

**PROCEEDINGS THE THIRD INTERNATIONAL
CONFERENCE ON THE SUSTAINABLE ECONOMIC DEVELOPMENT AND
BUSINESS MANAGEMENT IN THE CONTEXT OF GLOBALISATION
(SEDBM 2020)**

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ACADEMY OF FINANCE

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WELCOME NOTES

Dear Friends and Colleagues,

We are pleased to welcome you to the 3rd International Conference: **“Sustainable Economic Development and Business Management in The Context of Globalisation” (SEDBM 2020)**.

The Fourth Industrial Revolution Industrial Revolution 4.0 and the creative innovation help bring about disruptive technologies such as artificial intelligence (AI), Internet of Things (IoT), etc at a quicker pace and a larger scale of development together with ecological challenges such as climate change, epidemics and other menaces to the human social and economic development, etc. Even though globalization process nourishes international markets with high degree of growth and development, it also creates increasing inequity. The impacts from globalization, international integration, climate change and epidemics are making great changes to the world. The 3rd International Conference SEDBM 2020 will strive to offer not only plenty of networking opportunities, to interact with the leading researchers from both academia and universities, but also an environment to engage in stimulating discussions about research topics and practices. We are especially honoured to have:

- John Bruce Wells is Deloitte’s Chief of Party for the US Agency for International Development (USAID) Vietnam Low Emission Energy Program (V-LEEP) that helps assess and implement policies that accelerate deployment of solutions that promote clean energy in Vietnam.

- Assoc. Prof., Dr. Tran Dinh Thien: Former President of Vietnam Institute of Economics (VIE), Member of Prime Ministerial Economic Advisory Committee.

We wish you all an intellectually stimulating and productive conference!

On behalf of the Organizing Committee, Nguyen Trong Co

ASSOCIATE PROFESSOR NGUYEN TRONG CO
PRESIDENT OF ACADEMY OF FINANCE



Assoc. Prof. Nguyen Trong Co is the President of Academy of Finance. He has been working for the Academy since his graduation and in different positions such as lecturer, Head of Financial Analysis Department, Deputy Head of Human Resources Department before becoming Vice President of the Academy. He was nominated as the President of Academy of Finance in 2014 and has been in that position to present. He is the Editor-in-Chief of the Journal of Finance and Accounting Research, Vice President of the Scientific Board of Finance Research and member of the Scientific Board of Banking Research. He was awarded the honor membership of FCPA Australia. Assoc. Prof. Nguyen Trong Co is the author/co-author of more than 21 valuable textbooks and reference books such as “Financial Analysis”, Finance Publishing House, 2017; “Auditing Management and the use of Mineral Resources for Sustainable Development in Vietnam”, Finance Publishing House, 2016, etc. He has completed and published more than 20 research projects covering a wide range of research topics such as corporate finance, public finance and technological market, etc. He has also published more than 70 articles in both local and international journals.

DR. HOANG DUC LONG
RECTOR OF UNIVERSITY OF FINANCE-MARKETING



Dr. Hoang Duc Long is the Rector of the University of Finance-Marketing. He previously worked at the Academy of Finance before transferring to the Ministry of Finance. While working there, he took the post of the head of the Training Office (under the Personnel and Organization Department), and was promoted to the Deputy Director of Personnel and Organization Department cum the chairman of the Board of Trustees, formally known as the Board of Directors, of the University of Finance-Marketing. Then, he was assigned to run this university in January 2016. Seven months later, he was officially appointed as the rector of the university and has been in this position up to now. During his term here, he was the co-author of the two ministry-level research projects which have been evaluated and implemented. Before that, he had completed numerous ministry-level research projects during his service at the Ministry of Finance and advised the leaders of this ministry on issuing many important legal documents of the Vietnamese finance sector. To recognize his contribution and merits, he was awarded the third class Labor Order in 2011 by the State of Vietnam.

JOHN BRUCE WELLS IS DELOITTE'S CHIEF OF PARTY FOR THE US AGENCY FOR INTERNATIONAL DEVELOPMENT (USAID) VIETNAM LOW EMISSION ENERGY PROGRAM (V-LEEP) THAT HELPS ASSESS AND IMPLEMENT POLICIES THAT ACCELERATE DEPLOYMENT OF SOLUTIONS THAT PROMOTE CLEAN ENERGY IN VIETNAM



Prior to serving USAID on several programs in Asia, he was a Partner with ERM Indonesia, the President of Citizens International, and the Director of Private Sector Initiatives for Chemonics. In these roles he helped global companies such as BP, Exxon Mobil and Vale meet their corporate sustainability commitments in developing country operations. He was also founder and President of The Bruce Company, a two-time Inc. 500 firm that helped launch premier partnerships such as Energy Star; and helped launch the U.S. Green Building Council which operates the LEED building certification program.

**ASSOC. PROF., DR. TRAN DINH THIEN:
FORMER PRESIDENT OF VIETNAM INSTITUTE OF ECONOMICS (VIE),
MEMBER OF PRIME MINISTERIAL ECONOMIC ADVISORY COMMITTEE**



Major practical consultances and researches: Participating in researches and research programs (both national level or ministerial level) on different aspects of socio-economic development of Vietnam. Secretary General of two National Research Programs on Industrialization and Modernization Strategy. Head of the three National Researches on Industrialization and Modernization. Participating in many researches that provide inputs for the preparation of government and communist party's documents

MỤC LỤC

INTRODUCTION TO INTERNATIONAL CONFERENCE ON SUSTAINABLE ECONOMIC DEVELOPMENT AND BUSINESS MANAGEMENT IN THE CONTEXT OF GLOBALIZATION (SEDBM 2020)	
1.	FINANCIAL AUTONOMY AT HIGH SCHOOLS IN HO CHI MINH CITY Nguyen Trong Co..... 3
2.	MEASURING PERMANENT ESTABLISHMENT CONCEPT IN DOUBLE TAXATION AGREEMENTS OF VIETNAM Nguyen Thuy Trang..... 12
3.	THE RELATIONSHIP BETWEEN SUSTAINABILITY ACCOUNTING REPORT AND FINANCIAL PERFORMANCE OF LISTED COMPANIES ON THE HANOI STOCK EXCHANGE (HNX) - VIETNAM Duong Hoang Ngoc Khue, Nguyen Thi Ngoc Oanh 24
4.	ANALYSIS OF FACTORS AFFECTING FINANCIAL RISK OF PRIVATE ENTERPRISES IN FOOD AND BEVERAGE INDUSTRY IN VIETNAM' STOCK MARKET Nguyen Thi Ha, Phan Thuy Duong, Dang Thu Hang..... 31
5.	THE IMPACT OF CAPITAL STRUCTURE ON THE COST OF CAPITAL: EVIDENCE FROM VIET NAM PETROLEUM TRADING FIRMS Nguyen Tien Duc, Tran Ngoc Anh 40
6.	SOLUTIONS FOR APPLYING INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS) IN VIETNAM Nguyen Dinh Do 46
7.	GREEN BANKING TOWARD SUSTAINABLE DEVELOPMENT: VIETNAM PERSPECTIVES Nguyen Thuy Linh, Le Thi Hong Hanh 54
8.	CAPITAL INVESTMENT POLICY TO PROMOTE SUSTAINABLE DEVELOPMENT OF LIFE INSURANCE MARKET IN VIETNAM Hoang Manh Cu..... 63
9.	THE DETERMINATION OF OPTIMAL CAPITAL STRUCTURE FOR AN ENTERPRISE IN VIETNAM Hoang Trung Duc, Phạm Thi Lan Anh 70
10.	THE FINANCIAL RISKS CONTROL EXPERIENCE OF CORPORATE GROUPS IN THE WORLD AND THE LESSONS FOR VIETNAM Đàm Thị Thanh Huyền..... 76
11.	CONSTRUCTING AND COMPLETING THE LEGAL SYSTEM FOR THE DEVELOPMENT OF E-COMMERCE IN VIETNAM IN THE GLOBALIZATION CONTEXT Le Thi Thanh, Tran Thi Thu Huong..... 88
12.	RACE TO THE BOTTOM ON CORPORATE TAX AND RECOMMENDATIONS TO VIETNAM Phan Le Nga 97
13.	INTEGRATION COMPETENCE OF VIETNAMESE ACCOUNTING, AUDITING HUMAN RESOURCES IN THE AEC: CURRENT SITUATIONS AND RECOMMENDATIONS Le Vu Thanh Tam 106
14.	THE IDENTIFICATION AND CLASSIFICATION OF ENVIRONMENTAL COSTS IN ACCOUNTING Tran Hai Long, Le Thi Yen Oanh 115

15.	THE NECESSITY TO APPLY ENVIRONMENTAL ACCOUNTING IN VIETNAMESE ACCOUNTING SYSTEM Ngo Thi Thu Hong, Nguyen Thi Hong Hanh.....	121
16.	INFLUENCE OF EXECUTIVE SUPERVISION, ASSES RISKS AND CONTROL ACTIVITIES ON INTERNAL CONTROL OF THE VIETNAMESE COMMERCIAL BANKS Tran Quoc Thinh, Nguyen Khanh Tuan, Luu Chi Danh	128
17.	KEY ELEMENTS OF TAX COMPETITIVENESS OF VIET NAM'S TAX SYSTEM IN COMPARISON WITH OTHER COUNTRIES IN THE WORLD Le Xuan Truong, Phan Le Nga	137
18.	SUSTAINABLE GROWTH RATE: EVIDENCE FROM PHARMA AND TRANSPORTATION CONSTRUCTION ENTERPRISES IN VIETNAM Vu Van Ninh, Nguyen Thi Thuy Dung.....	152
19.	AUDITOR REPORT IN THE CURRENT EVOLVING DUE TO COVID 19 ISSUES OF AUDITORS INTERERSTING Pham Tien Hung, Nguyen Thi Thanh Phuong, Tran Vu Hoang Son	161
20.	PROFESSIONAL ETHICAL STANDARDS DIRECTIVE AUDITOR'S MIND AND ACTION IN FINANCIAL STATEMENT AUDIT DUE TO COVID 19 Pham Tien Hung	176
21.	CORPORATE INCOME TAX INCENTIVE POLICY IN VIETNAM: IMPROVEMENT FOR SUSTAINABLE ECONOMIC DEVELOPMENT Le Manh Thang	186
22.	PROBABILISTIC PREDICTION OF BANKRUPTCY OF LISTED STEEL ENTERPRISES IN VIETNAM Nguyen Huu Tan	196
23.	PUBLIC VS. PRIVATE BLOCKCHAINS: THE RACE TO OWN THE FUTURE OF PAYMENTS Nguyen Thi Thuong Huyen, Nguyen Tuan Minh.....	207
24.	IMPACT OF LABOR ON THE ECONOMIC GROWTH OF VIETNAM: HISTORY, SITUATION AND PREDICTION Nguyen Sy Thanh.....	219
25.	REQUIREMENTS FOR BUILDING COST MANAGEMENT ACCOUNTING MODEL IN PUBLIC HIGHER EDUCATION INSTITUTIONS Ngo Thi Thuy Quyen, Trinh Thi Thu Phuong	228
26.	PROMOTING ADMINISTRATIVE PROCEDURES REFORM IN CUSTOMS TO HELP BUSINESSES IN VIETNAM OVERCOME DIFFICULTIES Nguyen Thi Minh Hoa, Nguyen Thi Hong Hanh	232
27.	CENTRAL BANKS' MONETARY POLICY - QUANTITATIVE EASING: APPLICATION FOR VIETNAM Doan Huong Quynh , Nguyen Anh Quang	240
28.	CORPORATE INCOME TAX INCENTIVES FOR SMALL AND MEDIUM ENTERPRISES IN VIET NAM Pham Quynh Mai, Luu Huyen Trang.....	248
29.	RESEARCH FACTORS AFFECTING PROFIT ADJUSTMENT OF THE LISTED FIRMS IN THE REAL ESTATE AND CONSTRUCTION INDUSTRIES ON VIETNAM STOCK MARKET Bui Thi Thu Huong, Nguyen Dieu Linh, Hoang Hong Tuan	255
30.	INTERNATIONAL EXPERIENCES ON LOCAL BUDGET EXPENDITURE EFFICIENCY Hoang Thi Thanh Lieu, Dao Minh Tam, Pham Thi Phuc.....	274
31.	FINANCIAL MANAGEMENT IN MULTINATIONAL COMPANIES – IMPLICATIONS FOR VIETNAMESE ENTERPRISES Nguyen Phi Hung, Duong Thi Quynh Lien, Tran Doan Quan	279
32.	PUBLIC INVESTMENT AND THE ROLE OF PUBLIC INVESTMENT FOR VIETNAM ECONOMIC DEVELOPMENT PROMOTION Pham Ngoc Dung, Nguyen Thanh Giang	285
33.	FACTOR AFFECTING THE LEVEL OF ENVIRONMENTAL ACCOUNTING INFORMATION DISCLOSURE IN VIETNAM MINING INDUSTRY Nguyen La Soa, Ngo Van Hau.....	290

34.	APPLYING DEA MODEL TO EVALUATE AUTONOMY MECHANISMS IN HO CHI MINH CITY'S HOSPITALS Ngo Thanh Hoang, Nguyen Dinh Hoan, Mai Thi Bich Ngoc, Nguyen Thanh Binh, Pham Van Truong, Phung Thanh Loan	302
35.	SOME ISSUES POSED WITH GREEN ACCOUNTING IN VIETNAM IN THE CONTEXT OF GLOBALIZATION Nguyen Ba Minh	307
36.	EFFICIENCY OF AUDIT COMMITTEE AFFECTING ON EARNINGS MANAGEMENT AT LISTED COMPANIES IN VIET NAM Nhat Phuong Diem	318
37.	ANALYSIS FACTORS AFFECTING GOLD PRICE IN VIETNAM- USING THE VECTOR AUTOREGRESSIVE MODEL (VAR) Tran Nguyen Ngoc Anh Thu.....	330
38.	FACTORS AFFECTS THE INDIVIDUAL CUSTOMER'S DECISION TO DEPOSIT AT THE BANK FOR INVESTMENT AND DEVELOPMENT OF VIETNAM (BIDV), TAN BINH BRANCH Pham Thi Tuyet Nhung, Vu Thanh Tung	345
39.	OVERVIEW OF METHODOLOGY FOR VERIFYING AND DECISION IN AUDITING Phan Thi Bich Ngoc, Vo Thi Thu Ha.....	358
40.	ANALYSIS OF FACTORS AFFECTING NON-INTEREST INCOME OF COMMERCIAL BANK: AN EMPIRICAL CASE IN VIETNAM Huong T. Phan, MScF. Chau B.X. Nguyen	368
41.	APPLICATION SCOPE OF STRATEGIC MANAGEMENT ACCOUNTING IN VIETNAMESE ENTERPRISES Tran Hong Van, Tran Thi Phuong Lan, Nguyen Minh Hang.....	378
42.	INTERNATIONAL EXPERIENCES ON FINANCIAL POLICIES FOR DEVELOPING THE INDIVIDUAL ECONOMIC SECTOR AND EXPERIENCE LEARNED FOR VIETNAM Thi Thu Hong Pham, Thi Hoa Nguyen.....	388
43.	EXAMINE THE EFFECT OF INTERNAL CONTROL ON VIETNAMESE BANKS' PERFORMANCE: CASE AT STATE-OWNED COMMERCIAL BANKS Le Van Tuan, Nguyen Kim Quoc Trung	402
44.	MODEL OF JOB TRESS ON TURNOVER INTENTION, A CRITICAL STUDY AT LOGISTICS INDUSTRY, EVIDENCE FROM VIETNAM Huynh Thi Thu Suong.....	410
45.	FINTECH CROWD FUNDING DEVELOPMENT IN VIETNAM Nga Phan Thi Hang, Thanh Tran Thi Phuong.....	423
46.	SOLUTIONS FOR IMPLEMENTING FINANCIAL AUTONOMY MECHANISM IN HO CHI MINH CITY, CULTURE AND SPORTS PUBLIC NON-BUSINESS UNITS IN HO CHI MINH CITY Nguyen Đao Tung, Nguyen Manh Thieu, Pham Thanh Ha, Luu Huu Đuc	434
47.	SOME ISSUES TO CONSIDER WHEN IMPLEMENTING VIETNAM'S IMPORT AND EXPORT TAX COMMITMENTS IN FTAS HANOI, VIETNAM Tran Thi Thu Huyen, Doan Huong Quynh, Tran Tien Dat	449
48.	MACROECONOMIC ENVIRONMENT AND FDI: EVIDENCE FROM DEVELOPING COUNTRIES IN ASIAN Nguyen Thi Kim Chi, Le Trung Dao.....	455
49.	MUTUAL INFLUENCE BETWEEN LOCALITIES IN THE RED RIVER DELTA REGION IN ATTRACTING FOREIGN DIRECT INVESTMENT (FDI) Pham Van Hung, Trieu Van Huan.....	466
50.	GREEN ECONOMY WITH THE CHALLENGE AND OPPORTUNITY FOR THE SUBSTANABLE DEVELOPMENT IN VIETNAM Truong Thi Thuy, Hoang Trung Đuc.....	478
51.	LEAN MANAGEMENT - NEW DIRECTION FOR VIETNAMESE PRIVATE ENTERPRISES Dao Thi Huong	484
52.	THE IMPACT OF THE 4.0 NETWORK ON VIETNAM'S SUSTAINABLE ECONOMIC DEVELOPMENT Dang Thai Binh	499

53.	BUILDING HIGH QUALITY HUMAN RESOURCES FOR SUSTAINABLE DEVELOPMENT IN OUR COUNTRY AT PRESENT Hoang Thi Hong Hanh, Nguyen Chi Thien, Nguyen Hong Son	507
54.	THE DEVELOPMENT OF ECO-INDUSTRIAL PARKS IN THE WORLD AND THE IMPLICATIONS FOR INDUSTRIAL PARKS IN VIETNAM Nguyen Hong Chinh, Nguyen Thi Thuy Nga, Nguyen Thi Thuy Trang	516
55.	SOLUTION ORIENTED FDI WITH THE GOAL OF SUSTAINABLE ECONOMIC DEVELOPMENT OF VIETNAM Le Thi Hong Nhung, Nguyen Quoc Viet.....	524
56.	SOLUTIONS TO PROMOTE POSITIVE EFFECTS OF FOREIGN DEBT ON SUSTAINABLE ECONOMIC GROWTH Luong Quang Hien, Bui Xuan Hoa, M.Econ Nguyen The Hung	533
57.	EFFECTIVE FDI ATTRACTION OF CHINA FOR SUSTAINABLE ECONOMIC DEVELOPMENT Nguyen Tien Thuan.....	540
58.	VIETNAM'S PARTICIPATION IN GLOBAL APPAREL VALUE CHAIN IN THE CONTEXT OF 4.0 INDUSTRIAL REVOLUTION Hoang Thi Phuong Lan	549
59.	SUSTAINABLE DEVELOPMENT OF SMALL AND MEDIUM ENTERPRISES IN VIETNAM IN THE CONTEXT OF GLOBALIZATION Ha Quy Tinh, Ngo Thi Huong Thao.....	564
60.	EXAMINE THE EFFECT OF INTERNAL CONTROL ON VIETNAMESE BANKS' PERFORMANCE: CASE AT STATE-OWNED COMMERCIAL BANKS Nguyen Thanh Giang, Nguyen Thu Huong	571
61.	MODELLING ECONOMIC GROWTH, CARBON EMISSIONS, AND FOSSIL FUEL CONSUMPTION IN VIETNAM Vu Quoc Dung, Nguyen Thi Phuong Tuyen	579
62.	EMPIRICAL ANALYSIS OF ECONOMIC GROWTH AND UNEMPLOYMENT IN VIETNAM Nguyen Thi Viet Nga	593
63.	MODELS OF DEVELOPING BORDER-GATE ECONOMIC ZONES TOWARDS GREEN ECONOMY GROWTH IN NORTHEASTERN BORDER AREAS OF VIETNAM Dao Duy Minh, Phan Pham Chi Mai, Nguyen The Anh, Vu Van Anh	599
64.	ANALYSIS OF TFP AND ITS INFLUENCING FACTORS: A SEMI-PARAMETRIC APPROACH Nguyen Thi Thai Hung.....	608
65.	THE FOURTH INDUSTRIAL REVOLUTION AND CHALLENGES FOR VIETNAMESE HUMAN RESOURCES Vu Thi Vinh, Hoang Lan Huong, Hoang Phuong Anh	615
66.	EFFECT OF ENERGY CONSUMPTION & ECONOMIC GROWTH ON ENVIRONMENTAL DEGRADATION IN VIETNAM, CAMBODIA AND THAILAND Thanouxay SIVANNALIT	620
67.	INTEGRATED REPORTING - NECESSITY OF VIETNAMESE ENTERPRISES IN THE CONTEXT OF INTERNATIONAL ECONOMIC INTEGRATION Tran Quoc Thinh, Nguyen Khanh Tuan, Luu Chi Danh	628
68.	GREEN GROWTH IN THE WORLD AND THE CURRENT PRACTICE IN VIET NAM Dang Thi Thu Giang, Tran Thi Thanh Huyen, Pham Quynh Trang	632
69.	AUSTAINABLE DEVELOPMENT IN THE CONTEXT OF GLOBALIZATION: OPPORTUNITIES AND CHALLENGES FOR REAL ESTATE BUSINESSES IN VIETNAM Nguyen Ho Phi Ha, Vu Thi Phuong	643
70.	SOLUTIONS TO IMPROVE QUALITY AND EFFICIENCY OF RURAL ADMINISTRATIVE SERVICES IN BAC NINH PROVINCE Tran Tuan Anh, Do Thi Thu Hang	651
71.	CURRENT SITUATION OF PUBLIC SERVICES PROVIDING IN PRODUCTION AND CONSUMPTION OF POTATO IN BAC NINH PROVINCE Do Thi Thu Hang; Nguyen Phi Hung	657

72.	ESTIMATION OF APARTMENT VALUE USING THE HEDONIC PRICING METHOD: THE CASE IN DISTRICT 7, HO CHI MINH CITY, VIETNAM Vo Thi Hoang Vi.....	664
73.	FACTORS AFFECTING CONSUMERS' DECISION TO USE E-WALLETS IN HO CHI MINH CITY Ao Thu Hoai, Lam Anh Hong, Pham Thi Thu Hang, Do Thi Yen Nhi.....	672
74.	DEVELOPING HIGH-TECH AGRICULTURE IN CENTRAL HIGHLAND IN THE CONTEXT OF GLOBALIZATION AND INTERNATIONAL ECONOMIC INTEGRATION Hoang Thi Xuan.....	689
75.	THE RELATIONSHIP BETWEEN TRADE OPENNESS AND ECONOMIC GROWTH: A STUDY ON ASEAN-5 My-Linh Thi Nguyen, Toan Ngoc Bui.....	702
76.	THE ASYMMETRIC EFFECT OF GASOLINE PRICE ON CONSUMER PRICES: AN EVIDENCE FROM THE VIETNAMESE MARKET Nguyen Quyet.....	709
77.	THE RELATION BETWEEN CEO TENURE AND EARNINGS MANAGEMENT Bui Van Duong, Vo Thi Truc Dao.....	721
78.	SUSTAINABLE DEVELOPMENT REPORT AND CURRENT TRENDS Vo Thi Truc Dao, Nguyen Thi Kieu Oanh.....	729
79.	IDENTIFY INTEREST AND ATTITUDE OF ACADEMY STUDENTS BASED ON CONFESSION POSTS ANALYSIS Hoang Huu Son, Do Thi Thu Thao.....	739
80.	CLIMATE CHANGE AND SALT CONTAMINATION IN THE MEKONG DELTA Dao Thi Minh Thanh, Pham Dao Thuy Linh.....	747
81.	RESEARCH OF PERSONALISATION IN ONLINE SHOPPING: LITERATURE REVIEW AND RESEARCH MODEL Nguyen Phuong Hoa, Nguyen Thi Hong Van, Nguyen Dieu Thai.....	753
82.	FREE TRADE AGREEMENT – DRIVING FORCES AND CHALLENGES FOR VIETNAM'S ECONOMIC GROWTH AND SUSTAINABLE DEVELOPMENT Nguyen Thi Thanh Huyen, Doan Huong Quynh , Pham Thi Van Anh.....	761

INTRODUCTION TO INTERNATIONAL CONFERENCE ON SUSTAINABLE ECONOMIC DEVELOPMENT AND BUSINESS MANAGEMENT IN THE CONTEXT OF GLOBALIZATION (SEDBM 2020)

Globalization is not a new phenomenon, it has appeared as a wave which attracts and connects resources of different countries since the end of the nineteenth century. However, the emergence of knowledge economy results in the new features of present globalization process.

The knowledge economy has the ability to engage all nations, forcing us to adapt by changing our development methods and pathways.

In the 21st century, the movement of the contemporary world with a series of political, economic and social changes happening at the same time is expected to impact on the globalization process: The balance of global powers switching from mono-polar to multi-polar; the Fourth Industrial Revolution associated with the disruptive technologies such as artificial intelligence (AI), Internet of Things (IoT),... with an unprecedented speed and scale in history; ecological challenges, including climate change and epidemics, toward the socio-economic development of all countries, etc.

Globalization has brought the growth and development at the international level, but it has also created the growing intensity of inequality.

The pressure and the irresistible power of the globalization associated with the knowledge economy have profoundly affected every country and every sector. It forces countries to actively integrate into the world economy if they do not want to be left behind in the development process. Globalization has not only created various opportunities for emerging countries, but has also posed an unprecedented series of challenges for them. Global economic growth has made great achievements but accompanied by the shortage of natural resources, increasing environmental pollution, climate change, epidemics, population aging, poverty, inequality, unemployment and underemployment which are the most concerned global issues of the 21st century. Therefore, sustainable development is deemed to be a comprehensive solution for the current context.

Although Vietnam has developed spectacularly over the last three decades, the transition to a modern and prosperous economy has only just begun. With per capital income being much less than the global average income, Vietnam is trying to maintain a trajectory of rapid growth and following other successful East Asian economies who have entered the ranks of middle-income countries for the last half decade.

However, in a changing world, the economy of Vietnam is facing great opportunities and challenges. Therefore, taking advantage of opportunities and overcoming challenges to find a new

growth model targeted at improving the quality of growth in the period 2021 – 2030 and vision to 2045 is considered an urgent demand. Vietnam needs to shift its growth model from width to depth in the development process. In which, it is essential to alter the ratios of resources contributing to growth, give priority to the motivation of science- technology and innovation to take a leap in some fields, give priority to the private sector, support and foster innovative start-ups, promote digital economy in a number of sectors, improve market institution, enhance governance capacity of the state and enterprises, promote green and holistic growth, develop regional economy and build regional linkages to create poles of growth and sustainable development ...

Following the success of the first conference (SEDBM-1), which focused on clarifying the issues of economic development and sustainable business in the context of globalization to recognize opportunities and challenges, the second conference (SEDBM-2) focused on discussing sustainable economic and business development under globalization to define the major problems as well as to propose appropriate responses. In 2020, the Academy of Finance and the University of Finance and Marketing co-organize the third international conference (SEDBM-3) with the aim to obtain profound considerations, analyses, assessments, forecasts, policies and measures on the contemporary issues regarding globalization, economics, nations, regions and the world the sustainable economic and business in the new context.

The Organizing Committee has received more than 100 articles and selected, edited 82 articles to be published in the Proceedings which mostly focus on analyzing and relating the issues of economics, finance, governance, human resources, accounting and auditing to sustainable development. The conference attracts participation of researchers and economic specialists from universities and institutes as well as the local and international organizations. The research papers show the diversified approaches to the contents of economic development and sustainable business in the context of globalization.

SEDBM 2020 focuses on discussion, analysis and clarification of economic development and sustainable business in the context of globalization. Therefore, the Organizing Committee expects the participants to focus and clarify the following issues: (i) Accounting, auditing, finance, management, international finance... and sustainable business; (ii) Socio-economic development, digital economy, knowledge economy, changing growth model and sustainable business.

The Organizing Committee would like to express gratitude towards scientists and researchers for your enthusiastic participation and contribution to the success of the conference. With the view that science and technology are the motivation for the development of countries in general and universities in particular, we recognize that in the context of globalization, there are multiple unpredictable changes which are not only related to every country but also to the whole world, therefore, the analyses, assessments, forecasts and solutions ... introduced in this conference are extremely valuable for the global, regional or national prosperity.

We wish you good health and success and we strongly believe that this conference will be successful in all aspects.

Best regards!

On behalf of the Organizing Committee,

Nguyen Trong Co

FINANCIAL AUTONOMY AT HIGH SCHOOLS IN HO CHI MINH CITY

Assoc. Prof. Dr. Nguyen Trong Co
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Abstract: *This study is carried out for the purpose of analyzing the current financial autonomy in schools (focusing on high schools) in Ho Chi Minh City. The research content includes autonomy in revenue sources and rates; autonomy in using financial resources; autonomy in distributing financial results. Using the formula to calculate the level of financial autonomy by the total non-business revenue / total recurrent expenditure to evaluate the level of financial autonomy of high schools (high schools) in Ho Chi Minh City. Research results show that the level of financial institutions of high schools depends greatly on the development of high-quality educational programs in addition to formal education programs. In order to upgrade the high schools to self-guarantee funding totally by public budget recurrent spending units, it is necessary to promote the policy of socialization of education services.*

Keywords: *autonomy, financial autonomy, non-business units, education and training*

1. PLACE THE PROBLEM

In Vietnam, the empowerment of autonomy to schools started in 2006, when there was Decree 43/2006 / ND-CP of the Government stipulating the autonomy and self-responsibility in implementing tasks. , organizational structure, payroll and finance for public non-business units. The delegation of autonomy to schools according to Decree 43 has initially seen a positive change, creating a favorable mechanism for schools to improve autonomy, self-responsibility, and be more proactive in the implementation of its activities, providing quality-oriented, effective educational services to better meet the needs of society. However, in the implementation process, there are still some difficulties and problems because the regulations on the ceiling tuition fees, the regulations on socialized revenues are too tight, some norms of expenses still have to be complied with According to the industry's no longer appropriate technical and economic norms.

Being the most developed city in Vietnam with a dense population, the demand for using high-quality educational services in Ho Chi Minh City is high. Over the several years, the local government has always prioritized to invest in education and training, and ensured the rate of public expenditure for education reaches 20% of the total budget. The city has achieved 276 classrooms per 10,000 inhabitants in the condition that each year the number of students increases; the rate of primary school students learning English in schools is 95%, students studying IT at 63%. The city's high school exam result in 2019 was ranked 5th in the country [8]. In addition achievements, due to the high mechanical increase in population, there is big challenge of school facilities in some districts such as: the number of students per class is still high, do not ensure for accommodating to 2 sessions per day. In order to deal development requirements on investment

from the budget, the city has promoted the implementation of the policy of socialization in the education sector, the education sector promotes autonomy in schools to mobilize resources from investment in education development in the private sector. With the spirit of promoting autonomy but not affecting the quality of education, the ultimate goal of the implementation of autonomy is to improve the quality of education output, which poses many problems that need to be solved on management mechanism, policy system to mobilize and effectively use financial resources to meet the requirements of learners and society. Therefore, the assessment of the current status of the financial institution mechanism in high schools in Ho Chi Minh city, thereby proposing a number of major solutions to improve the MFI mechanism at high schools.

2. RESEARCH OBJECTIVES AND RESEARCH METHODS

- The objective of this study is to analyze the current situation of the MFI mechanism at high schools in Ho Chi Minh City; thereby proposing a number of solutions in implementing the financial mechanism of the schools.

- Qualitative research method is used by the author to accomplish the above research objectives, the author uses mainly the methods of analysis, statistics, description, and schematic of the collected secondary data.

3. RESEARCH RESULTS

3.1. The reality of classifying the type of unit according to degree of autonomy

Among the high schools in the city, there is only 1 unit classified to ensure all regular operating expenses (Saigon South High School), the rest are classified as self-guaranteed units ensure a regular expenditure (TCTC). Survey results at 98 high schools on the level of financial autonomy in 2018 show:

+ 100% TCTC: 01 Saigon South High School.

+ Level of TCTC from over 70% to less than 100%: 03 high schools implementing advanced models are located in urban districts;

+ Level of TCTC from over 50% to below 70%: There are 15 schools in the sample; of which 10 high schools in the inner district accounted for 66.67%, 5 high schools in suburban districts accounted for 33.33%, no high schools located in suburban districts;

+ Level of TCTC from 30% to below 50%: There are 64 schools in the sample; Of which, there are 35 schools in urban districts accounting for 54.7%, 12 schools in suburban districts accounting for 18.8% and 17 schools in suburban districts accounting for 26.6%.

+ level of TCTC from 10% to below 30%: There are 13 schools in the sample; In which, 5 schools in the inner district make up 38.5%, 1 school in the suburban district accounts for 7.7%, 7 schools in the suburban district account for 53.8%.

3.2. The situation of autonomy in revenue sources and rates at high schools

**** The status of revenue autonomy***

Sources of income of high schools include non-business revenues (collection of tuition fees, fees; collection of services and other revenues) and funding from public budget

Table 1. The situation of revenue mobilization of high schools in the city. Ho Chi Minh*Unit: million VND*

Year	Total self-financing	Collecting career fees			Budget for regular budget allocation
		Collecting fees and charges	Service collection	Other receipts	
2012	935.332	59.374	42.356	102.904	730.698
2013	1.078.918	88.917	47.566	123.280	819.155
2014	1.256.776	143.076	46.381	180.932	886.387
2015	1.425.382	177.364	42.901	302.734	902.383
2016	1.609.784	193.627	56.212	392.360	967.585
2017	1.705.878	185.584	46.334	499.334	974.626
2018	1.994.793	185.341	69.311	609.760	1.130.380

Source: Report on the situation and results of the implementation of the autonomy mechanism at the NTSNQ in Ho Chi Minh City 2012 - 2018

The total autonomous funding of high schools has increased over the years; Total autonomous funding in 2018 increased 113.3% compared to 2012. The total autonomous funding (calculated by the non-business revenues plus the state budget recurrent funding) increased due to two reasons:

- *First*, the state budget funding for high schools increased, in 2018 increased 34.8% compared to 2012. In the city. In Ho Chi Minh City, the allocation of state budget for education is based on the number of students, there is a distinction between ordinary and specialized students. Thus, due to the increase in the number of students and the increase in the allocation norms, the state budget funding for high schools increases. However, although state budget funding accounts for the largest proportion of total revenues of schools, this proportion tends to decrease from 78.1% in 2012 to 53.2% in 2018.

- *Second*, the total non-business revenue increased, in 2018 increased 322.4% compared to 2012. Of the total non-business revenue in 2018, other revenues accounted for the largest proportion of 70.5%; fees and charges accounted for 21.4% and service revenue 8.1%.

*** *The status of autonomy in terms of collection***

The rates of high schools are currently regulated as follows:

+ Each school year, the Department of Education and Training and the Department of Finance issue the instructions on the collection and use of tuition fees and other revenues of public educational institutions; in which there are regulations on tuition fees of high school students and there is a distinction between students in districts and districts. Specialized students in specialized high schools and public high schools with specialized classes are free of charge. Currently, the tuition fee for high school students in districts is 120,000 VND / student / month and for high school students in districts is 100,000 VND / student / month.

+ Other revenues such as 2-day teaching; classes to strengthen foreign languages, informatics; organizing study with foreign teachers; organizing life skills programs, extracurricular programs, gifted subjects; organizing semi-boarding classes, units are actively

calculating these revenues to ensure the principle of collecting enough to cover expenses and having agreement with students' parents.

In the academic year 2018 - 2019, the Department of Education and Training of the city promulgates a framework that regulates the rates for some agreed revenues, such as the fee for organizing 2 sessions per day for high schools from 200,000 to 300,000 VND / student / month. ; semi-boarding service and management organizations from 200,000 to 250,000 VND / student / month; semi-boarding toilet money from 30,000 to 50,000 VND / student / month; semi-boarding equipment and supplies 150,000 - 200,000 VND / student / year.

+ Only 03 high schools Le Quy Don, Nguyen Du, Nguyen Hien implement the advanced school fees according to the trend of integration. Accordingly, in addition to the regular tuition fees like other high schools, these schools are allowed to collect a maximum of VND 1,500,000 / student / month (collected for 9 months), including: teaching 2 sessions, English Enhancing, studying with foreign teachers, gifted subjects, life skills, extracurricular programs, facilities for advanced models (this fee does not include payments on behalf of households and agreement collection other activities not included in the mentioned activities such as Integrated English Program, part-board service organization, ...).

+ For schools participating in the project “Teaching and learning Mathematics, Science and English with integrated English and Vietnamese programs”, the fee level is implemented according to Decision No. 5695 / QD-UBND dated November 20, 2014 on to approve the project “Teaching and learning Mathematics, Science and English with integrated English and Vietnamese Programs” at public schools in the city according to the following 04 plans:

Option 1: Tuition fee of 3.1 - 3.2 million VND / month for 6 periods / week with 100% foreign teachers;

Option 2: Tuition 4 million VND / month for 8 periods / week with 100% foreign teachers;

Option 3: Tuition fee of 2.2 million VND / month for 6 periods / week with 50% of foreign teachers and 50% of Vietnamese teachers;

Option 4: Tuition is 3.2 million VND / month for 8 periods / week with 50% foreign teachers and 50% Vietnamese teachers.

+ Only Saigon South High School is a unit that self-guarantees that the operating budget can collect the tuition fee of 600,000 VND / student / month and not collect any other fees.

With the regulations on collection and use of tuition fees and other charges as above, it can be seen that the revenue sources of high schools differ greatly between high schools in inner districts and high schools in foreign districts. Fort; the difference between the high schools and other high schools. Due to being located in areas with more developed socio-economic conditions, high schools in urban districts have the conditions to deploy many service activities to increase career income such as English enrichment classes, Gifted clubs, extracurricular programs, English - Vietnamese integration programs, this has influenced the level of financial institutions of high schools.

3.3. The situation of autonomy in using financial sources

Survey results from high schools show that most high schools have done well in the financial management, expenditure management in the unit. All schools have developed internal spending regulations; every year, units amend and supplement their internal spending regulations to suit the actual situation and the change of related spending policies.

For recurrent expenditures, schools actively used autonomous financial resources for recurrent expenditures. Expenditure and spending norms comply with the internal spending regulations approved by competent authorities (the spending norms do not exceed the spending limits set by competent state agencies by all high schools. are classified as self-guaranteeing units partly operating costs). The funds saved from this expense will be used to pay the additional income and set up funds in accordance with the provisions of Decree 43/2006. For non-recurring assignments, schools have paid in accordance with the State Budget Law and current law for each funding source. Recurrent expenditures account for more than 85% of total operating expenditures of schools, the rest are non-recurrent expenditures accounting for about 15% of total operating expenditures.

Based on the State's current regimes and policies and the implementation of the units' internal spending regulations, the units have made an estimate and used funds for their regular spending tasks. Among recurrent expenses, personal payment accounted for the largest proportion (about more than 82%), the rest were professional expenses, expenses for procurement and repair of assets, expenses for setting up funds and other expenses.

Table 2. Structure of recurrent expenditures of high schools in Ho Chi Minh City

Unit: %

Content	2012	2013	2014	2015	2016	2017
Personal payments	81.5%	82.5%	82.6%	83.7%	82.1%	82.6%
Expenses for professional expertise	4.0%	3.9%	3.9%	4.0%	5.6%	5.7%
Expenses for repair, maintenance and maintenance of property	2.8%	1.0%	2.0%	1.4%	1.2%	0.8%
Other expenses	5.7%	3.8%	5.4%	5.0%	5.7%	6.8%
Expenses for setting up the Fund	6.1%	8.8%	6.1%	5.9%	5.4%	4.1%
Total recurrent expenditure	100%	100%	100%	100%	100%	100%

Source: High School Finalization Report - Department of Education and Training

3.4. Situation of autonomy in the use of financial results in the year

The total revenue gap between recurrent activities of high schools increased continuously from 2012 to 2018. In 2018, the total difference between revenues and expenditures of high schools increased by 70.5% compared to 2012. This is the condition. for units to increase income for employees and set up funds according to Decree 43/2006.

Table 3. Distribution of the gap between recurrent income and expenditure of high schools in Ho Chi Minh City

Unit: million VND

Year	Total difference between revenue and expenditure	The total income increased	Non-fiction Fund	Bonus and welfare	Income stabilization fund
2012	172.641	116.138	23.677	30.884	1.941
2013	187.932	125.768	24.792	34.610	2.762
2014	201.889	139.188	22.533	38.827	1.341
2015	201.563	140.323	21.000	39.392	848
2016	243.354	165.633	29.309	11.739	36.673
2017	260.786	173.296	28.868	55.763	2.859
2018	294.290	176.446	33.859	72.948	11.037

Source: Summary of reports on the implementation of financial autonomy and self-responsibility of public non-business units

All high schools have positive recurrent operating income margins. In 2018, the total revenue difference greater than the expenditure of high schools was VND 294,290 million. Most of the income and expenditure difference is used by the units to increase income for employees; The employee's additional income accounted for 66.5% to 69.6% of the income and expenditure difference in the period 2012 - 2018, the rest was deducted from the career development fund, bonus fund and fund. income stability. The total additional income of workers at high schools increased steadily, in 2018 the total additional income increased by 52% compared to 2012. In which, Le Quy Don High School had the highest income increase of 50. million VND / person / year and Hiep Binh High School with the lowest added income is 3 million VND / person / year.

The non-business development fund is used to invest, develop and improve non-business activities, supplement investment capital for building facilities, purchase equipment and means of work, and pay for the application of scientific and technological advances. to provide additional training and training to improve working capacity for officials and employees; ... The SWF has fluctuated over the years, but in general, the deduction rate for the NTFP Fund tends to increase. In 2018, the total number of NTFP Funds increased by 43% compared to 2012. Thus, schools in the city's general education sector are very interested in investing, upgrading equipment procurement and training workers to improve the quality of education in schools.

4. SOME SOLUTIONS TO PROMOTE THE IMPLEMENTATION OF FINANCIAL AUTONOMY MECHANISM AT HIGH SCHOOLS IN HO CHI MINH CITY

Firstly, upgrade the autonomy finance of high schools in the spirit of promoting the socialization of general education services.

- Expand the advanced school model according to the trend of regional and international integration; upgrade the financial institutions of the schools according to the advanced model.

With the aim of building an advanced, modern and integrated model in order to meet the need to enjoy higher quality educational services accessible to and equal to regional and international

countries; Ho Chi Minh City has implemented this educational model at all educational levels from kindergarten to high school. The developed advanced model has created conditions for schools to increase revenue sources to improve the quality of teaching and learning, thereby contributing to renovating the operating mechanism of these units, promoting socialization of educational services. . This is the initial foundation for implementing self-control and recurrent expenditure of general education non-business units.

In the immediate future, with three schools that are implementing advanced models with an MFI level of over 70%, it is necessary to upgrade the MFIs to a unit that ensures all recurrent expenditures by 2021. To perform this task, it is necessary to increase the revenue collection. The state-of-the-art process ensures that the schools collect enough to cover recurrent expenditures, on the basis that the state invests in additional facilities and trains teachers to ensure the true quality of advanced schools.

In the following years, the city needs to have a specific roadmap to orient which schools will implement the advanced model (schools in the inner district, schools in the district center). When recognized as an advanced school, the tuition fees of schools will increase according to the 3-5 year roadmap, and the state budget funding will also decrease gradually according to the roadmap. At the end of the period of 3-5 years, the schools will ensure regular spending.

- Raising high school fees on the basis of determining the cost of general education services, the city's ability to balance the budget and the ability to pay the people.

In the spirit of promoting the socialization of general education services, the increase in tuition fees will be adjusted in the direction that schools in districts have slower growth than schools in districts. Part of the regular budget saved by the city budget will be used to invest in new construction, renovation and upgrading of facilities and equipment for schools; direct support for beneficiaries in the form of scholarship programs for students with difficult circumstances or excellent students at all levels, ...

- Encourage schools to participate in the integrated English - Vietnamese Program project; expanding and improving the quality of intensive English programs, informatics, learning English with foreign teachers, gifted clubs. Implementation of these programs enables schools to increase revenues and improve the quality of student output.

Second, reform the method of assigning state budget estimates to high schools from allocation to the form of assignment.

Decree 32/2019 / ND-CP specifies the conditions for assigning the tasks of providing public non-business services using state budget funds. Accordingly, the assignment of the task of providing public non-business services using the state budget funds is only implemented for the sub-national units under the management agencies assigned to provide public services (SNC). Assigning the task of providing services using state budget funds to the public non-business units (ĐVSNCL) when fully meeting the following 4 conditions:

- ĐVSNCL has functions and duties to provide SNC in accordance with assigned SNC under the decision of the competent authority. In addition, for ĐVSNCL assigned tasks in the field subject

to the State license to operate must meet additional conditions must be the unit has been licensed by the competent authority according to the provisions of specialized law;

- DVSNCL has been delegated the authority of the financial institution by the competent authority according to the autonomy mechanism of DVSNCL in each field;

- The provision of SNC services is a regular annual task of the unit, has been and is being assigned by the superior management agency;

- List of DVSNCL has not developed technical and economic norms and unit price, implemented according to the reasonable quantity, volume, cost according to the approved estimate by competent authorities.

According to these regulations, the method of assigning state budget estimates to high schools should be renewed from the mode of allocation to the form of assignment. At the same time, building clear quantitative criteria to evaluate the performance of the assigned tasks of the schools. These quantitative criteria should be built based on assessments of the quality of students of schools such as: percentage of good and excellent students; good conduct rate; high school graduation rate; average graduation score; university passing rate; awards for excellent students at all levels; English output standard results of high school students; ...

Third, strictly control the financial management, management and use of public assets, the distribution of funds at schools associated with increasing accountability of the head in terms of autonomy.

In order to limit mistakes in the management of finance and public assets at the NTSCs in general and schools in particular, it is necessary to strengthen the inspection and supervision of revenue and expenditure contents at the units. At the same time, it increases the accountability and accountability of principals and financial accounting staff at the schools.

Regarding the distribution of financial results in the year, the governing body should strictly supervise and control the setting up and use of funds at schools in accordance with regulations. The allocation of monetary funds from the difference between revenues and expenditures, from the saved funds should pay more attention to the Professional Operation Development Fund. Because the infrastructure invested in the future will be degraded or need new investment, so it is necessary to have a strategy to extract the annual career development fund to create this large fund in the future to invest. major projects bring high efficiency to the service of education and training in the condition that investment sources from the state budget are reduced. The Career Development Fund must be used for the purpose of training and improving the professional qualifications of staff and teachers in schools; strengthening school facilities, ensuring proper standards, norms and assigned functions.

Fourth, the conditions for implementing the above solutions.

- Management agencies at all levels need to complete the law provisions on financial autonomy in schools.

- + Building a network of quality units of the field of education and training;

- + Completing the formulation and promulgation of economic and technical norms, educational service prices;

- + Issue documents guiding the determination of the cost of educational services for high schools;

+ Reform the budget allocation mechanism according to output criteria, associated with fair and efficient goals; associating with the demand for using high quality educational services of the city people; There is a distinction between quality, efficient units and poor quality, ineffective units;

+ Promote the autonomy in organizational apparatus and payroll to high schools;

- Schools need to clearly define the financial advantages and disadvantages of the unit when implementing the financial institution; propose specific plans, roadmaps and steps to remove each difficulty and problem;

+ Promote propaganda and dissemination of the MFI mechanism to each officer, teacher and student's parents to get consensus, especially from parents in sharing teaching - learning fees with home -School. This is the basis for promoting the socialization of educational services.

5. CONCLUSION

The financial institution mechanism for the NTSCs in general and high schools in particular is being completed; this is a condition for schools to strongly innovate the financial management to contribute to the educational development of the city. The empowerment of synchronous autonomy on the contents of organizational structure and personnel autonomy combined with financial autonomy contributes to promoting the provision of general education services according to the market mechanism, promoting the commune educational service association. Part of the State budget saved will be used for investment in facilities; increase the application of technology in teaching - learning activities; pay directly to users of the service in the form of scholarships, implementing policies on tuition exemption and reduction.

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MEASURING PERMANENT ESTABLISHMENT CONCEPT IN DOUBLE TAXATION AGREEMENTS OF VIETNAM

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Abstract: *The concept of “permanent establishment” (PE) in tax treaties plays a key role in determining the taxing jurisdiction, and hence the tax base, of the country. There are several ways that taxpayers can exploit PE definition in tax treaties to avoid tax liability, such as through commissionaire arrangements, through the specific exceptions and through electronic transactions. By using qualitative research method based on ActionAid’s available database (2016), this study evaluates the concept of PE in the double taxation agreements (DTAs) that Vietnam has signed up to the time of study. Following Hearson M.’s method, this study also updates data for 07 Vietnam’s DTAs which has not been in the dataset yet and 09 DTAs which Vietnam has signed recently from 2015 to 2020. Generally, Vietnam’s DTAs have relatively good PE index in comparison with several countries in Southern Asian and in comparison with average threshold of developing countries. However, PE definition in treaties between Vietnam and OECD countries/G20 countries/BEPS Actions countries bring less source taxing rights than the ones between Vietnam and non-members of above groups do. From the result, this study gives several suggestions for policy implications.*

Keywords: BEPS, double taxation agreement, permanent establishment, tax treaty

1. INTRODUCTION

Taxation plays a vital role in the development of any economy. It provides revenue to fund governmental activities, ensures resources redistribution, streamlines consumption of certain goods and services, reduces inflation and generates employment. Thus, tax is a fiscal tools used by many governments in the world to achieve their objectives in certain period. Such objectives commonly are maximizing governmental revenue and encouraging economic development (Akanle, 1991). However, tax is one of the important costs of a corporation and in maximizing shareholders’ wealth, firms always try to pay tax with the smallest amount by legal and also illegal ways. Tax avoidance is a plan or arrangement established for the sole or dominant purpose of avoiding tax (Braithwaite, 2005). Tax avoidance can be understood as the effort of companies in order to minimize tax payment legally.

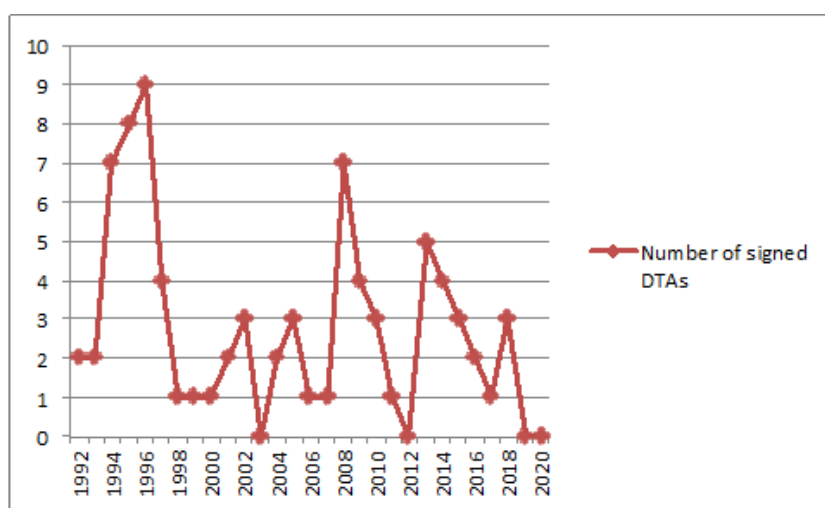
Tax treaties represent an important aspect of the international tax rules of many countries, especially in globalizing era. The taxing rights of the states is one of the biggest issues in cross border transactions because it decides the budget revenue deriving from tax. DTA, which is concluded by nearly every jurisdiction in the world, have served to prevent harmful double taxation and remove obstacles to cross-border trade in goods and services, and movements of capital, technology and persons.

Vietnam started to sign DTA in 1992. Up to August, 2020, Vietnam has signed a DTA with 80 countries/territories in the world. Table 1 presents the classification of Vietnam’s DTAs basing on

whether or not the treaty partner is an OECD member and whether or not the treaty partner is a G20 member. Vietnam has signed DTAs with 27 over 35 OECD members (accounting 33.75% of total number of Vietnam's DTAs). Besides, if classifying basing on whether or not the treaty partner is a G20 member, the number of treaty partner being G20 member is 14 partners (accounting 17.5% of total number of Vietnam's DTAs).

Figure 1 shows that the number of DTAs Vietnam signed from 1994-1996 being 24 DTAs, in which 14 is the number of DTAs Vietnam has signed with countries being OECD members, equals about one third of the total number of DTAs that Vietnam has signed up to 2020. One of the most appropriate reason of this fact is that in this period, right after clearing relations with world economic organizations and normalized relations with the United States as well, Vietnam endeavored in attracting resources from outside to serve the domestic economic development.

Fig 1. Number of signed DTAs of Vietnam over a 18-year period from 1992 to 2020



[Source: Author collected from Vietnam Ministry of Finance's Website - <http://www.mof.gov.vn>]

Table 1. Classifying Vietnam's DTAs by groups of countries

	Signing with		Signing with	
	OECD Country	Non-OECD Country	G20 Country	Non-G20 Country
Number of DTAs	27	53	14	66
%	33.75	66.25	17.5	82.5
Total of DTAs	80		80	

[Source: Author collected from ActionAid Tax Treaties Dataset 2016]

The number of DTAs which Vietnam has signed is explained by the goal of attracting FDI after opening up the economy. However, the effect of signing DTAs on FDI attraction in Vietnam still needs to be considered. Studies which have been done by many researchers and organizations around the world on the impact of DTA on FDI attraction show that this impact is mixed, including positive, negative and neutral effect as well. While, Barthel et al. (2009); Blonigen and Davies (2004); Coupé et al. (2009) and Davies (2004) argue that the positive

effects of the signing DTAs on FDI attraction are often shown in the relationship between developed countries rather than between developed countries and developing countries or among developing countries.

Moreover, the accelerated network of tax agreements has also given rise to treaty abuse (Hearson M., 2016). Via exploiting loopholes in tax treaty provisions, organizations and individuals are able to reduce their tax liability, therefore it harm tax base of contracting countries.

Treaty abuse shows the attempt of a person to indirectly access the benefits of a tax agreement between two jurisdictions without being a resident of one of those jurisdictions. There are a wide number of arrangements through which a person who is not a resident of a jurisdiction that is a party to a tax agreement may attempt to obtain benefits that a tax agreement grants to a resident of that jurisdiction.

Taxpayers engaged in treaty abuse strategies undermine tax sovereignty by claiming treaty benefits in situations where these benefits were not intended to be granted, thereby depriving jurisdictions of tax revenues. Because of these reasons, treaty abuse is one of the most important sources of Base Erosion and Profit Shifting (BEPS) concerns.

OECD BEPS Action 7 and United Nations Handbook (2017) showed several ways that taxpayers can exploit PE definition under United Nations Model Convention and OECD Model Convention to avoid tax liability.

(1) Artificial avoidance of PE status through commissionaire arrangements

According to OECD BEPS Action 7, a commissionaire arrangement may be defined as an arrangement through which an independent agent in a country in its own name but on behalf of a foreign enterprise that is the owner of these products. According to United Nations Handbook (2017), a commissionaire arrangement is international structures reorganization of companies by centralizing a number of functions dealing with intangibles, product promotion, inventory management, often located in low-tax jurisdictions, and converting sales subsidiaries that had previously handled all aspects of the purchase and sale of goods in the source country into independent sales agent.

This position relies on the definition of PE of the United Nations Model Convention and the one of the OECD Model Convention, which require that for a PE to be present in these circumstances, the agent must have “authority to conclude contracts” in the name of the related person supplying the goods, but except independent agent. Hence, an independent agent concludes contracts that are binding only on the agent itself and do not create any obligations on the part of the supplier, even though it is clear that the supplier will be supplying the goods on the terms agreed to by the agent. Only a small sales commission would be taxable in the source country, so it is possible to argue that in many cases commissionaire arrangements and similar strategies were put in place primarily in order to erode the taxable base of the country where sales took place.

(2) Artificial avoidance of PE status through the specific exceptions

By exploiting the specific exception provisions in PE definition of the United Nations Model Convention, like the OECD Model Convention, which list a number of activities that are described as

being “preparatory or auxiliary” and that do not result in the creation of a PE, a taxpayer resident in one country should be able to establish itself in the territory of the other country and carry on activities that are not central to the earning of its profits without any taxation in the other country. This is the case even where many or all of the enumerated activities are carried on over a long period of time. Concern has been expressed that by manipulating and combining various functions, taxpayers can establish a substantial presence in the market jurisdiction that contributes to the profitability of the enterprise without those activities constituting a PE under the existing rules.

(3) Artificial avoidance of PE status through electronic transactions

PE has always been linked to the physical presence which is illustrated as a “fixed place of business” in almost DTAs. While fast development of information and communications technology has significantly changed the ways that companies do business globally. Through technological advances, it has become possible to have significant market penetration in a country without creating a taxable presence in the form of a PE. As a result, countries are deprived of revenues from the traditional sale of goods that they would historically have right to tax under existing rules. In the simplest case, a distribution structure can use a website selling the product for direct delivery to replace a local sales office, thus eliminating all the sales income from the domestic tax base. Similarly, a local presence, such as an office, might be maintained, but through the use of information and communications technology, many functions formerly performed by the local presence can be transformed into functions performed outside the territory of source country. According to Hugh J. and Brian J. (2017), this development might be referred to as “base cyberization”: part of the tax base that was previously captured by traditional jurisdictional concepts has now been converted to “cyber” transactions that are not taxed.

Because of the risk of eroding tax base via DTAs’ PE definition which Vietnam are facing, this study aims to measure the concepts of PE in DTAs which Vietnam has signed basing on ActionAid Tax Treaties Dataset (2016) which has been developed by Hearson M. (2016). From the measuring results, the paper gives several suggestions for policy implications in order to prevent tax base erosion through DTAs in Vietnam.

2. LITERATURE REVIEW AND METHODOLOGY

2.1. Literature review

2.1.1. Double taxation agreement and definition of PE in double taxation agreement

a. Double taxation agreement

Double taxation agreement (DTA), a type of tax treaty, is a bilateral (two-party) agreement made by two countries to resolve issues involving double taxation of income of each of their respective citizens (OECD, 2020)

DTAs stipulated which of two principles should prevail when they came into conflict: the principle of source, by which a country is entitled to tax income because it is earned within its borders; and the principle of residence, by which a country is entitled to tax income because it is earned by one of its residents. Broadly speaking, DTAs allocate to the source country the pri-

mary right to tax active income, the profits from activities in which the recipient of the income plays an active role, such as a branch or subsidiary. Besides, the residence country agrees to make allowance for any tax its residents have paid in the source country when calculating their tax liability at home.

The objectives of tax treaties are to attract foreign investors; to create a framework within which the tax authorities can minimize disputes and resolve them when they arise; and to create a legal framework for cooperation between the tax authorities to counter offshore non-compliance (Michael Lang et al, 2014).

DTAs represent an important aspect of the international tax rules of many countries. Over 3,000 bilateral income tax treaties are currently in effect, and the number is growing. The overwhelming majority of these treaties are based in large part on the United Nations Model Double Taxation Convention between Developed and Developing Countries (United Nations Model Convention) and the Organization for Economic Co-operation and Development Model Tax Convention on Income and on Capital (OECD Model Convention). OECD Model Convention is mostly used by developed countries which promotes residence taxation and is arguably more beneficial for developed country investors. While, United Nations Model Convention, mostly used as a base for tax treaties signed between a developed country and a developing country which provides more room for “source based” taxation – beneficial for developing countries as they are capital importers.

b. Definition of PE in DTA

The concept of PE, which is used in DTAs, plays a key role in determining the taxing jurisdiction, and hence the tax base, of the country. Specifically, the profits of an enterprise of one country (residence country) are taxable in the other country only if the enterprise maintains a PE in the latter country (source country) and only to the extent that the profits are attributable to the PE. The existence of a PE allows the source country to tax the business income derived by a resident of the other country and may also require the residence country to exempt the income. Therefore, the definition of PE is due to avoid international double taxation on the foreign company’s profit that is subject to taxation. In that respect the definition of PE is an important concept.

The vast of PE definitions used in DTAs are based on the United Nations Model Convention and OECD Model Convention. Although similar in form, the United Nations’ model PE definition include more source taxation rights than the OECD’s model, which means that United Nations’ model constitutes a better outcome for a country that wishes to retain its taxing rights over foreign investors. The Table 2 gives details to prove that the PE definition of United Nations Model Convention is broader than the one of OECD Model Convention.

Table 2. Differences between two models of PE definition of United Nations and OECD

Article 5 - Paragraph		PE definition	UN Model Convention	OECD Model Convention
3	a	Construction PE length in months	More than six months	More than twelve months
	a	Supervisory activities associated with construction	Yes	No
	b	Service PE included	Yes	No
	b	Service PE length in months	More than six months	Not included
4	a,b	Delivery exception to PE	No	Yes
5	b	Stock agent PE	Yes	No
6		Insurance PE	Yes	No
7		Dependent agent extension	Yes	No

2.1.2. Measure of PE definition

In most instances, the United Nations model makes amendments to the OECD model that grant the source country an additional right to tax. Therefore, according to Hearson M.'s coding method, there are nine provisions relating to PE definition that vary in this way within the dataset, each of which has been coded as a binary value where 1 means that the UN model provision is included, and 0 that the OECD model version is used.

The table 3 below indicates how PE definitions in treaties are converted to numerical values, according to Hearson M. (2016).

Table 3. PE provisions coded in ActionAid Tax Treaties Dataset (2016)

Item	United Nations model reference	Description	Scored
5i	Article 5(3)(a) length	Permanent establishment definition: Construction PE length in months (UN = 6; OECD = 12)	Linear scale from 24months = 0 to no threshold = 1
5ii	Article 5(3)(a) supervisory activities	Permanent establishment definition: Supervisory activities associated with construction (UN = Yes, OECD = No)	Yes: 1; No: 0
5iii-b	Article 5(3)(b) included	Permanent establishment definition: Service PE included (UN = Yes, OECD = No)	Yes: 1; No: 0
5iii-c	Article 5(3)(b) length	Permanent establishment definition: Service PE length in months (UN = 6, OECD = Not included)	Linear scale from 18 months = 0 to no threshold = 1
5iv	Article 5(4)(a)	Permanent establishment definition: Delivery exception to PE (UN = No, OECD = Yes)	Yes: 0; No: 1
5v	Article 5(4)(b)	Permanent establishment definition: Delivery exception to PE (UN = No, OECD = Yes)	Yes: 0; No: 1
5vi	Article 5(5)(b)	Permanent establishment definition: Stock agent PE (UN = Yes, OECD = No)	Yes: 1; No: 0

5vii	Article 5(6)	Permanent establishment definition: Insurance PE (UN = yes, OECD = No)	Yes: 1; No: 0
5viii	Article 5(7)	Permanent establishment definition: Dependent agent extension (UN = Yes, OECD = No)	Yes: 1; No: 0

From these nine coded fields, Hearson M. (2016) developed PE index by taking the average value of nine items' scores. PE index measures the definitions of PE in different DTAs by which, the higher PE index, the broader PE definition. It means that source country is given more rights to tax foreign investors.

2.2. Research methodology and data

The study uses qualitative research method based on ActionAid's available database to evaluate the concept of PE in the DTAs that Vietnam has signed up to the time of study. The two sections below summarizes the research methodology and database used in the study.

2.2.1. Research methodology

The qualitative research method used in this study is the comparative research method. The study focuses on analyzing the PE index as one of the indicators to assess the source level of DTAs. By comparing the mean value of the PE index and its detailed indices of Vietnam's DTAs with the ones of groups of countries, the study makes an assessment of the PE concepts in DTAs which Vietnam has signed.

2.2.2. Data

This study bases on ActionAid Tax Treaties Dataset (2016) which has been developed by Hearson. The dataset includes information on 26 aspects of 519 tax treaties concluded by developing countries in sub-Saharan Africa and Asia as of 2015. In which, there are index of 64 DTAs in the total of 71 DTAs which Vietnam had signed as of 2014¹. Therefore, by following Hearson M.'s method which uses the PE models of United Nations and OECD as standardized variations this study updates data for 07 Vietnam's DTAs which has not been in the dataset yet and 09 DTAs which Vietnam has signed recently from 2015 to 2020².

Table 4. Summary of DTAs of Vietnam dataset

Total DTAs as if 2014 (ActionAid Dataset 2016)	64
Plus: Unavailable data	07
Plus : DTAs signed from 2015 to 2020	09
Total DTAs up to 2020 in study's dataset	80

Table 5. Summary of ActionAid dataset

1 Excluding seven DTAs between Vietnam and following countries/territories: Algeria (signed in 1999), North Korea (signed in 2002), Venezuela (signed in 2008), Mozambique (signed in 2010), Kazakhstan (signed in 2011), Palestine (signed in 2013) and Iran (signed in 2014).

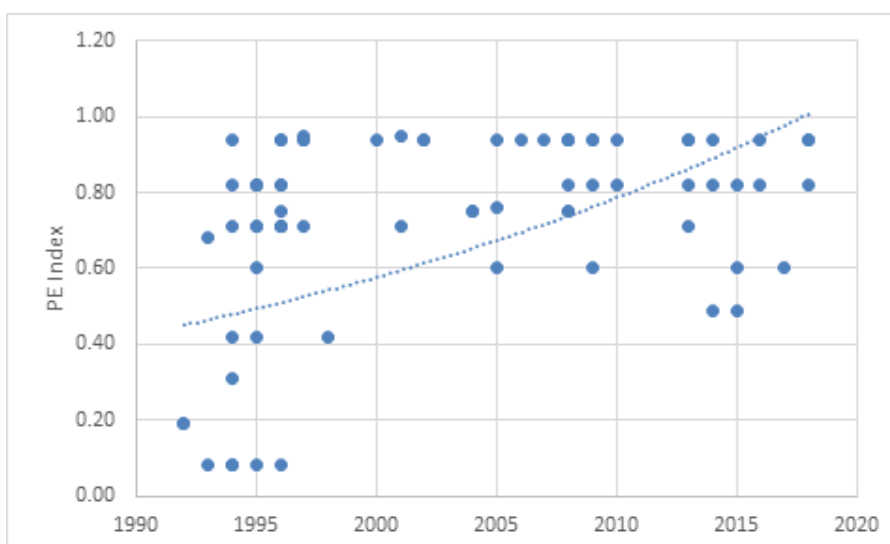
2 Including nine DTAs between Vietnam and following countries/territories: Portugal (signed in 2015), United State (signed in 2015), Estonia (signed in 2015), Manta (signed in 2016), Panama (signed in 2016), Latvia (signed in 2017), Macao (signed in 2018), Croatia (signed in 2018) and Cambodia (signed in 2018).

Total tax treaties as if 2014 (ActionAid Dataset 2016)	519
Plus : Unavailable data for Vietnam's DTAs	07
Plus : Vietnam's DTAs signed from 2015 to 2020	09
Total DTAs up to 2020 in study's dataset	535

3. RESULT AND DISCUSSION

Figure 2 shows PE Index of DTAs which Vietnam has signed up to 2020. The dotted blue line presents the aggregate trends in PE Index of Vietnam's DTAs. This line tends to go up to the right, suggesting that the later, PE provisions in Vietnam's DTAs have become more source-based over time, which means that recent treaties expand the circumstances in which Vietnam can tax foreign companies' profits within borders. The DTAs having the lowest PE index are DTAs between Vietnam and France, between Vietnam and Germany and between Vietnam and Singapore, while the DTAs having the highest PE index are DTA between Vietnam and Indonesia and between Vietnam and the Philippines.

Fig 2. PE Index of DTAs which Vietnam has signed up to 2020



[Source: Author collected from ActionAid Tax Treaties Dataset 2016]

Figures 3 shows the comparison between the average PE index of Vietnam's DTAs with the average PE index of the ones of three other Southeast Asian countries, including Laos, Myanmar and the Philippines. The data shows that in comparison with Laos, Myanmar and the Philippines, the average PE index of Vietnam's DTAs is the highest (0.72) and is higher than the average PE index of developing countries (0.53). The data for Myanmar and the Philippines follows with figure of 0.64. The average PE index of Laos' DTAs, which even is lower than the average figure of developing countries, is the lowest (0.35). It means that, comparing with three resemble countries in Southern Asia area, Vietnam appears to have been as the most successful country in retaining taxing rights, in particular with respect to the definition of PE. Three possible explanations for this are countries' negotiating strength, national policy preferences, and emulation of regional partners (Dauer&Krever, 2012).

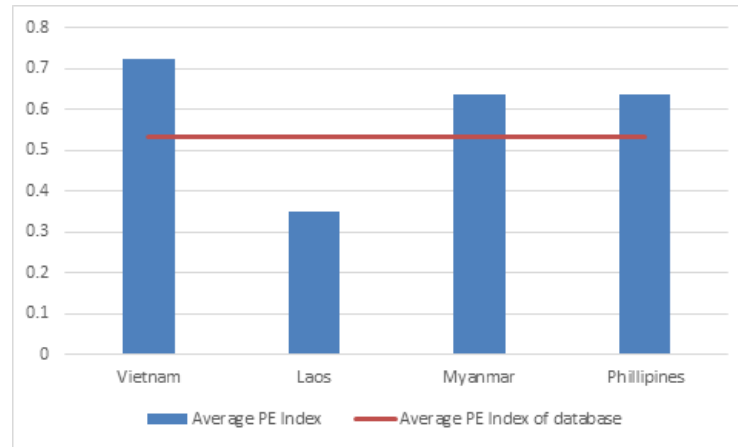


Fig 3. Comparing average PE index of Vietnam and the ones of three other Southern Asian countries (Laos, Myanmar and the Philippines)

[Source: Author collected from ActionAid Tax Treaties Dataset 2016]

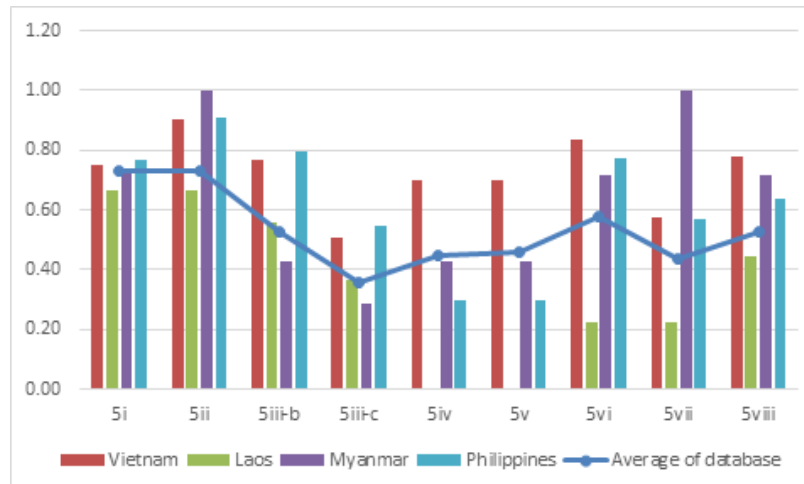
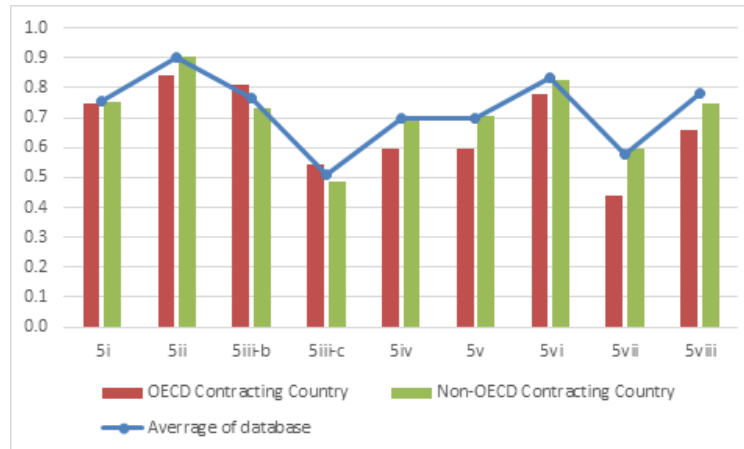


Fig 4. Comparing average score of nine items relating to PE provisions of Vietnam and the ones of three other Southern Asian countries (Laos, Myanmar and the Philippines)

[Source: Author collected from ActionAid Tax Treaties Dataset 2016]

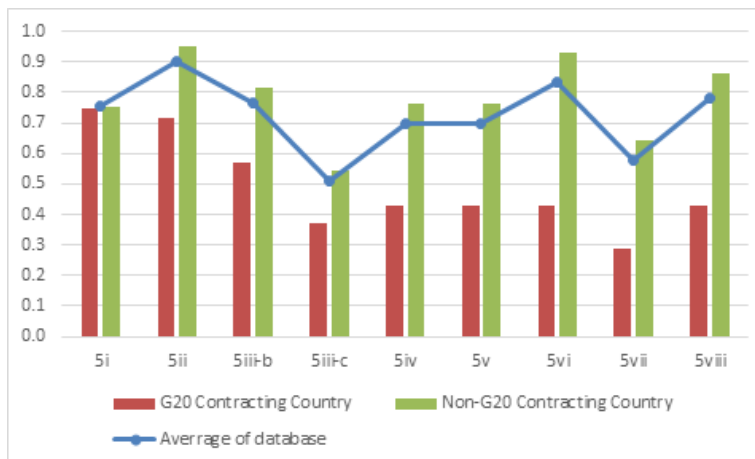
Figure 4 above goes into depth to analyze the data related to the scores of the nine detailed indices that make up the PE index following Hearson (2016) which are described in detail in Table 1 and Table 4. From the figure we can see that Vietnam and the Philippines pay relatively equal attention to the nine detailed provisions in determining PE status when they negotiate DTAs. It is reflected in the small difference between the constituent indicators of PE index. Besides, Myanmar focuses more on the terms 5ii and 5vii which determine PE status of “supervisory activities associated with construction” and “insurance agent”, not adhering to the terms 5iii, 5iv and 5v determine PE status of services including delivery. In the provisions to determine PE status in Laos’ DTAs, there is absolutely no mention of the terms 5iv and 5v.

Fig 5. Comparing average scores of nine items relating to PE provisions in DTAs between Vietnam and OECD countries and the ones in DTAs between Vietnam and non-OECD countries



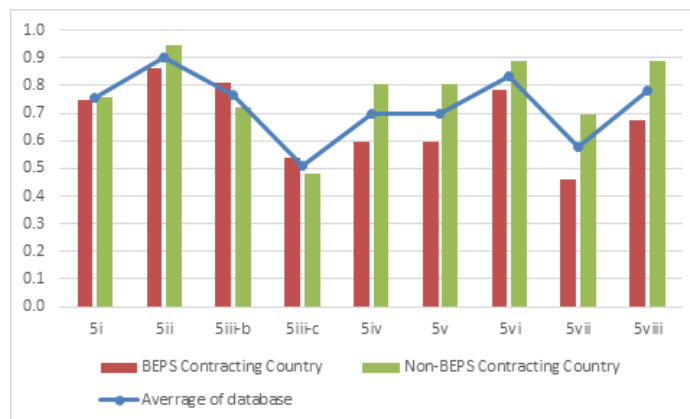
[Source: Author collected from ActionAid Tax Treaties Dataset 2016]

Fig 6. Comparing average scores of nine items relating to PE provisions in DTAs between Vietnam and G20 countries and the ones in DTAs between Vietnam and non-G20 countries



[Source: Author collected from ActionAid Tax Treaties Dataset 2016]

Fig 7. Comparing average scores of nine items relating to PE provisions in DTAs between Vietnam and countries participating BEPS and the ones in DTAs between Vietnam and countries not participating BEPS Actions



[Source: Author collected from ActionAid Tax Treaties Dataset 2016]

The three figures 5, 6 and 7 compare average scores of nine items relating to PE provisions in DTAs between Vietnam and OECD/Non-OECD countries, between Vietnam and G20/Non-G20 countries and between Vietnam and countries participating/not participating BEPS Actions. The data shows that the regulations relating to the determination of PE in DTAs between Vietnam and countries of the OECD/the G20/countries participating in BEPS Actions have lower average scores than the ones of DTAs between Vietnam and countries not OECD members/not G20 member/not participating in BEPS Actions. These scores are even lower than the average values of developing countries' DTAs in the dataset. It means that as a group, OECD/G20/BEPS Actions countries appear to impose more restrictions on the Vietnam's taxing rights, while non-OECD/non-G20/non-BEPS Action countries appear to be allowing developing countries to retain more taxing rights. While OECD/G20/BEPS Actions members are countries having the largest volume of transaction with Vietnam, therefore the risk of happening tax avoidance activities involving PE status from these countries' citizens is very high.

4. CONCLUSION AND POLICY IMPLICATIONS

This study has elaborated some comparisons basing on available dataset of ActionAid (2016) and updating data for Vietnam's DTAs signed from 2015 to 2020 in order to evaluate PE definitions in Vietnam's DTAs. Vietnam started to sign DTA in 1992. August, 2020, Vietnam has signed a DTA with 80 countries/territories in the world. Generally, Vietnam's DTAs have relatively good PE index in comparison with several countries in Southern Asian area including Laos, Myanmar and the Philippines and in comparison with average threshold of developing countries. However, in term of PE definition, treaties between Vietnam and OECD countries/G20 countries/BEPS Actions countries bring less source taxing rights than the ones between Vietnam and non members of above groups do. While volume of transactions between Vietnam and OECD/G20/BEPS Actions members accounts for a large proportion in the total volume of Vietnam's international transactions. It contains high-risk activities relating tax avoidance by exploiting concepts of PE.

Therefore, the definition of PE in Vietnam's DTAs, especially DTAs between Vietnam and OECD/G20/BEPS Actions countries, must be updated to prevent the artificial avoidance of PE status in relation to BEPS, including through the use of commissionaire arrangements, the specific activity exemptions and digital transactions.

1) One possible response to the problem of commissionaire arrangements is modifying the agency PE rule in the treaty to make explicit that the negotiation of contracts on behalf of the principal dealing with goods that the principal was to furnish would be sufficient to establish a PE, even in the absence of formal legal authority to conclude the contracts.

2) A re-examination of the activities enumerated in the various paragraphs of PE definition in DTAs may be necessary in order to allow a more nuanced treatment of situations where activities are combined.

3) It might be possible to reevaluate the traditional presence tests in light of new technological developments. This is part of the broader discussion of the relevance of the PE concept. For example, the types of activities that traditionally have not constituted a PE might be treated differently

where sales in a jurisdiction are made online. Thus, the existence of a warehouse, which often does not constitute a PE in DTAs following OECD Model Convention. Similarly, activities in the jurisdiction that would lead to the existence of an independent-agent PE might need to be evaluated differently where the sales take place online.

4) Information and communications technology activities in a jurisdiction might be considered to be a “virtual PE” based on the existence of “significant digital presence”. The European Parliament (2015) defines the “significant digital presence” as a result of either revenues received from the supply of digital services (7 million euro), number of online users (more than 100,000) or number of business contracts for digital services (more than 3,000). It might also be possible to evaluate the business activities of a taxpayer in the jurisdiction by taking into account both the physical presence and the digital presence in the jurisdiction to determine if there was “significant business presence”. Similarly, the collection of information through a fixed place has traditionally been viewed as not in itself constituting a PE. But where the extensive ability to collect and utilize digital information is the primary revenue source of the business, a different result may be required to adequately protect the tax base of the source country.

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THE RELATIONSHIP BETWEEN SUSTAINABILITY ACCOUNTING REPORT AND FINANCIAL PERFORMANCE OF LISTED COMPANIES ON THE HANOI STOCK EXCHANGE (HNX) - VIETNAM

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Abstract: *The aim of this study is to determine the relationship between sustainability accounting report and financial performance of listed companies on the Hanoi Stock Exchange (HNX). The study used unweighted disclosure index method to assess the sustainability accounting reporting of listed companies on the HNX with 33 items of disclosure compiled from Circulation No.155/BTC, Circular No.200/BTC and Vietnamese Accounting Standards (VAS). Linear regression model was used to determine the relationship between sustainability accounting reporting and financial performance of listed companies. The research was carried out with a sample of 302 annual reports of listed companies on the Hanoi Stock Exchange in 2016. The findings showed that, (1) the disclosure of sustainability accounting report reaches a low level (49.3%), and (2) there is a positive relationship between sustainability accounting reporting and financial performance of the firms, measured by return on equity (ROE).*

Keywords: disclosure, sustainable accounting reporting, financial performance

1. INTRODUCTION

Besides disclosing financial information, Vietnamese enterprises also disclose non-financial information to give users of financial statements a general view of their business operations. Therefore, investors, as well as organization stakeholders, have interest in both financial and non-financial information. The impacts of social responsibility information disclosure on businesses' financial performance always capture the interests of many researchers. A number of studies have conducted an analysis of the impacts of corporate responsibility, including corporate social responsibility (CSR), corporate social performance (CSP), environmental social governance responsibilities (ESG) and non-financial indicators (sustainable development report) towards the financial performance of businesses with different results.

Research conducted by Velte, P. (2017) focused on assessing the impact of environmental, social, and governance performance (ESGP) on financial performance of listed companies in Germany for the period of 2010 - 2014. The study was applied correlation and regression analysis to evaluate the possible relationship between ESGP and financial indicators.

The results showed that ESGP had a positive impact on the ROA indicator, in which the corporate governance factor had the strongest impact on financial indicators compared to environmental and social factors. Along with this line of research, there were many studies such

as Taliento et al. (2019), Caloian (2013), KPMG (2011), Preston et al. (1997), Margolis and Walsh (2003), Orlitzky et al. (2003), Reverte (2016), Agan et al. (2016)...

In Vietnam, the disclosure of sustainability accounting reporting related to the environment and society of listed companies was used to be voluntary, and there were no documents guiding the disclosure of this type of information until 2016 when Circular No.155/2015/TT-BTC was issued by The Ministry of Finance of Vietnam on guidelines for information disclosures on the securities market has come into force.

This Circular provides regulations on disclosure of sustainability information including environmental and social, which could be integrated into enterprises' annual reports or enterprises may separately prepare on their sustainability reports. The year 2016 was the first year when Vietnamese listed companies published information under circular No.155/BTC, including the disclosure of sustainable accounting information.

Accordingly, studies in this line were also carried out such as Ta's research conducted in 2019 with the objective to figure out the impacts of disclosing social responsibility information on the financial performance of non-manufacturing enterprises listed on Vietnam's securities market. The results showed the positive effect of disclosing social responsibility information on corporates' financial performance with the representative indicator of return on asset ROA. Besides, there is much research conducted by Le and Truong (2019) and Le and Nguyen (2016).

Therefore, it is necessary to study the relationship between sustainability reports and the financial performance of listed companies on the HNX. The objective of the research is (1) to assess the sustainable accounting reports prepared by listed companies on HNX to comply with circular No.155/BTC, Vietnamese Accounting Standards, and other regulations; (2) to consider the relationship between sustainability accounting reports and financial performance of listed companies on the HNX.

2. THEORETICAL FRAMEWORK AND HYPOTHESIS

In 1994, Elkington launched a new accounting framework comprising three main areas of social, environmental, and financial issues, which was called the triple bottom line (TBL or 3BL). This proposal by Elkington has set a new task for accountants, not only should they look at the profit or loss of the business, but also the environmental and social responsibilities. This is absolutely needed in the context of the strong development of daily economic activities, causing many negative impacts on society and the surrounding environment. The term sustainable development was mentioned for the first time in the publication "World Conservation Strategy" of The International Union for Conservation of Nature - IUCN (1980). Accordingly, "for development to be sustainable it must take account of social and ecological factors, as well as economic ones; of the living and non-living resource base". Asian Development Bank (ADB) also considers sustainable development as a new form of development, integrating the production process with resource conservation and environmental quality improvement. The growth in the global economic perspective, particularly in relation to the environment, has shown managers the importance of integrating environmental aspects into the business management system, including the accounting system of enterprises.

Besides, among the theories used to prove the relationship between social responsibility management and financial performance, Freeman's stakeholder theory (1984) has been largely used in research studies. The stakeholder theory holds that organizations are obliged to treat fairly among stakeholders, and in the event of a conflict of interest, the enterprises must achieve and maintain an optimal balance. Satisfying the interests of stakeholders will determine the success of products and services (Freeman, 1984). This requires businesses to develop and maintain sustainable management.

This theory was used to explain the motivation for organizations to choose and carry out social responsibility, meeting the increasing demand for environmental and social information from government agencies, credit institutions, investors, consumers, and the community through their sustainability reports. Because stakeholders are concerned about the firm's sustainability strategy, companies with good corporate sustainability reporting (corporate social responsibility reporting) would possess better social responsibility policies (Clarkson et al., 2008). Thereby, the trust of stakeholders would be enhanced and the financial efficiency of the business would improve as well. With a view to spreading images and names to partners and stakeholders, businesses are likely to increase the need to disclose information about social responsibility activities related to environmental and worker protection, product quality, community development.

The previous results of many studies showed that the majority of business managers and academics believed that making sustainability reports or disclosing social responsibility information could increase the financial efficiency of an enterprise. To verify this correlation in the Vietnam market, based on Elkington's triple bottom line (1994), Freeman's stakeholder theory (1984), and the previous research results, the authors proposed the hypothesis:

H1: There was a relationship between sustainability accounting reporting and the financial performance of an enterprise.

3. METHODOLOGY

3.1. Method to score the disclosure index

The authors have used an unweighted method to score a publication of sustainable accounting, which meant that if subcategories is disclosed on the annual reports, it is counted and scored as 1, otherwise, it is counted and scored as 0. Therefore, the total score of a company's sustainability accounting reporting disclosure is calculated according to the following formula:

$$SARD_j = \sum_{i=1}^{n_j} d_{ij}$$

Of which:

- $SARD_j$: Sustainability Accounting Reporting Disclosure of company j , and $0 \leq SARD_j \leq 33$
- $d_{ij} = 1$ if subcategory is disclosed
- $d_{ij} = 0$ if no information subcategory is disclosed
- n : The number of sustainable accounting items are disclosed.

Sustainability accounting reports in Vietnam were prepared based on the regulations of information disclosure by listed companies including circular No.155/2015/ TT-BTC, Vietnamese

Accounting Standards (VAS), and circular No.200/BTC on guidelines for accounting policies for enterprises. The list of published sustainability accounting standards consists of 33 items of information specifically collected by the authors as follows:

Table 1. Statistics of mandatory disclosure items of sustainability accounting reporting

Information items	Quantity
Environmental information	8
Social information	7
Corporate governance information	18
Total	33

Source: Compiled from circular No. 155/BTC, circular No. 200/BTC, and VAS

3.2. Regression model

Based on the assumptions, the regression model on the relationship between sustainability accounting reports and company performance used in the study to test the hypothesis has the following form:

$$\text{SARD} = \beta_0 + \beta_1 \text{Per} + \varepsilon$$

of which:

SARD: Sustainability accounting reporting disclosure.

β : Partial regression coefficients

ε : Errors in the model

Table 2. Measurement of independent variable in the model and its expected sign

Variable Name	Description	Type of variable	Measurement	Expected sign
SARD	Sustainability accounting reporting disclosure.	Quantitative	the total score of a company's sustainability accounting reporting disclosure	
Per	Operation Performance	Quantitative	Net Income/Total Asset (ROA)	+/-
		Quantitative	Net Income /Total Equity (ROE)	+/-
		Quantitative	Net Income /Net sales (ROS)	+/-

3.3. Research sample

The sample consisted of the year 2016 annual reports of 302 out of 376 listed companies on the Hanoi Stock Exchange, Vietnam. In addition, listed companies in the sample did not belong to the financial sector, which was because that enterprises in the financial sector were different from typical manufacturing and trading enterprises. Besides, the listing time of the enterprises in the sample was before January 1, 2016; as the study uses non-financial information in 2016, enterprises must be listed before January 1, 2016, to ensure data sufficiency and must have an annual accounting period from January 1 to December 31 according to calendar year.

The sample of non-financial companies was presented in details as follows:

Table 3. Statistics of research sample

Listed companies as of December 31, 2016 on HNX	376
Exclude: Banks, and companies in the financial sector	(25)
Listed companies after January 1, 2016	(14)
Companies lacking data at the time of collection	(35)
Total number of companies in the sample	302

Source: Authors

3.4. Methodology of collecting and processing data

Data collection: Regarding the extent to which sustainability accounting reporting is disclosed, the study focuses only on the disclosure of official corporate information in annual reports and sustainability reports. However, the number of companies making sustainability reports are minor, and they mainly integrate the sustainability content into the company's annual report. The authors have collected annual reports, sustainability reports from the website of each listed enterprise on HNX or collected from the website <http://cafef.vn/>.

Data processing: The authors used SPSS and excel software to support data analysis and used descriptive statistics to calculate the average, the disclosure rate, the frequency of disclosure, and the standard deviation. Thereby, the authors can assess the mandatory disclosure level of sustainability accounting reporting of listed companies on the HNX. Besides, the authors consider whether existing the relationship between sustainability accounting reports and financial performance or not.

4. Result and discussion

Table 4. Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
SARD	302	2	31	16.27	6.97
SARD (%)	302	6.06%	93.94%	49.30%	21.12%
SARDEnv	302	0	8	2.70	3.34
SARDEnv(%)	302	.00%	100.00%	33.69%	41.79%
SARDSoc	302	0	6	2.78	1.66
SARDSoc(%)	302	.00%	85.71%	39.78%	23.65%
ROA	302	-.32	.86	.052	.086
ROE	302	-.85	.75	.091	.159
ROS	302	-8.49	24.38	.094	1.50
Valid N (listwise)	302				

Table 4 shows the statistical results of the sustainable accounting disclosure of listed companies with the highest sample of 31/33 points, accounting for 93.94% while the lowest is 2/31 points, accounting for 6.06%, of which the highest environmental disclosure point is 8/8 (100%), the lowest is 0/8 (0%); the highest social disclosure is 6/7 (85.71%), the lowest is 0/7 (0%).

Table 4 also summarizes the performance of the listed companies in the sample, measured with three measures: ROA, ROE, ROS. The highest and lowest levels of ROA are 0.86 and -0.32 respectively; of ROE are 0.75 and -0.85 respectively, and of ROS are -8.49 and 24.38 respectively.

Table 5. ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3971.649	3	1323.883	3.029	.030 ^a
	Residual	130254.933	298	437.097		
	Total	134226.583	301			

a. Predictors: (Constant), ROS, ROA, ROE

b. Dependent Variable: SARD (%)

The results of table 5 of ANOVA analysis indicated that the Sig value of the F-test (Sig column) is small (Sig = 0.030 <0.05), indicating that there is a linear relationship between sustainable accounting disclosure (CRS) with the company's performance.

Table 6. Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	15.720	.472		33.279	.000
ROA	-1.756	6.326	-.022	-.278	.782
ROE	7.405	3.423	.169	2.163	.031
ROS	-.400	.265	-.086	-1.509	.132

. Dependent Variable: SARD

The company's performance is measured in three scales including ROA, ROE, and ROS, but the regression results in Table 6 showed that the link between the sustainable accounting report and the performance of the company measured by ROE (Sig = 0.031 <0.05) is statistically significant and has a positive impact (coefficient $\beta_1 = + 0.169$).

5. CONCLUSION

The study was surveyed for the 2016 annual reports of listed companies on the Hanoi Stock Exchange. This was the first year that Circular No.155/BTC on information disclosure on the stock market replaced Circular No.52/2012/TT- BTC and came into force on January 1, 2016. The results of the study presented that the listed companies in the sample have an average level of sustainable accounting disclosure of 49.3%, reaching a disclosure level below average. Research results also showed that there is a positive relationship between sustainable accounting reporting and financial performance of the companies as measured by return on equity.

The findings are significant for scholars and practitioners in accounting information disclosure, and this is a new research direction in Vietnam. Besides that, The State Securities Commission and Ha noi City Stock Exchange should have policies to encourage enterprises to disclose voluntarily sustainability accounting information to make information transparent, enhance the company's image to investors, and have a positive impact on the company's performance.

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ANALYSIS OF FACTORS AFFECTING FINANCIAL RISK OF PRIVATE ENTERPRISES IN FOOD AND BEVERAGE INDUSTRY IN VIETNAM' STOCK MARKET

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Abstract: This article is carried out to analysis of factors affecting financial risk of private enterprises in food and beverage industry in Vietnam' stock market. The panel data is extracted from financial statements of 27 listed private enterprises in food and beverage industry in Vietnam' stock market between 2009 and 2019. The financial risk of the business is represented by the variable FR_{it} (Bathory model). Bathory's model suggests that the higher the value of FR_{it} represented the better the financial position of the company and the lower the financial risk. According to empirical research results, there are 4 independent variables that affect financial risk including: solvency, accounts receivable, turnover and financial structure variables. In addition, the size of the business also affects the financial risk of the business. These evidences are useful new insights to business managers and governmental authorities.

Keywords: Alexander Bathory model, financial risk, private enterprises in food and beverage industry.

1. INTRODUCTION

Business activities in the fiercely competitive environment and volatile international environment, businesses face many risks, especially financial risk. Financial risk is always present in every business decision of the business. Depending on the level, risks can cause financial losses, but can also push businesses into a state of exhaustion, even bankruptcy. Therefore, in its operation, a very important thing that every business needs to always pay attention to, it is to study the factors affecting financial risk.

Vietnam is becoming a potential consumer market for food and beverages in the region, contributing significantly to the country's economy while ensuring both domestic demand and export. With a high growth rate in recent years, the food and beverage industry is considered to be one of the most attractive industries in Vietnam. Vietnam is currently considered as one of the markets with potential consumption of food and beverage. Consumption index of food manufacturing and beverage manufacturing in the first 9 months of 2018 increased by 8.1% and 10.2% over the same period last year, respectively (according to the General Statistics Office). The survey data of Vietnam Report also shows that food - beverage currently accounts for the highest proportion in the monthly expenditure structure of consumers (accounting for about 35% of expenditure). In terms of growth potential, the food and beverage industry currently account for about 15% of GDP and tends to increase in the near future. Business Monitor International (BMI) predicts that the growth rate of food and beverage industry will be higher in the period of 2016 - 2019, in which Vietnam is likely to be ranked third in Asia. Food and beverage enterprises face many risks due to the large value of goods. If the inventory is high, slow debt recovery will affect liquidity, thereby slowing down the ongoing activities of the enterprises. Firms in food and beverage industry are characterized by

large business capital, high costs, ... lead their financial risks are high. Financial risks can arise from any fluctuations from policies, economic growth, financial markets, interest rates, market rates, inflation.... Therefore, research and analysis of factors affecting financial risks contribute to identifying influencing factors in Food and beverage enterprises is necessary.

This paper analyzes the impact of these factors on the financial risk of food and beverage businesses listed on Vietnam's stock market in the period 2009-2019. The results of the study will be useful for food & beverage business executives and policy makers in financial risk management.

2. LITERATURE REVIEW AND METHODS

2.1. Literature review

Alexander Bathory proposed a model to measure the financial risk of businesses in 1984 with scales belonging to five groups of financial indicators such as capital structure, profitability, and proportion of capital, invest in assets ... and five financial indicators to identify financial risk. Bathory's model suggests that the higher the value of FR_{it} , the better the financial position of the company and the lower the financial risk.

Cao & Zen (2005) use the coefficient of financial leverage as a dependent variable to study the financial risk of large enterprises. Research results have shown that financial risk is positively correlated with debt size and structure, negatively correlated with performance and profitability, and no correlation with interest rates and solvency.

Gang & Liu (2012), Bhunia & Mukhuti (2012) all show that financial risk are significantly correlated with the current solvency ratio (CR), profitability ratio of revenue (ROS), coefficient of fixed capital (FAR), coefficient of self-financing (NAR); low correlation with turnover of fixed assets (FAT) of total assets turnover (TAT); and there is no correlation with debt structure (CL / NCL), inventory turnover (IT), receivables turnover (ART).

Zhou & Zhao (2006) adopted the Z model and found that the average level of financial risk of privately owned listed companies is significantly higher than that of state-owned listed companies.

Simantinee & Kumar (2015) used the Alexander Bathory model to measure financial risk and regression analysis used to study the relationship between financial risk and factors affecting financial risk. The research results show that: (i) fixed asset turnover (FATR) has the greatest positive correlation with financial risk; (ii) the ratio of fast solvency (QR) has the greatest negative correlation to financial risk; (iii) financial risk positively correlated with earnings per share (DPS), net profit margin (OPM), net profit margin (NPM), current solvency ratio (CR), financial coverage ratio (FCCRPT) and fixed asset turnover (FATR); (iv) financial risk is negatively correlated with net earnings per share (NOPS), return on long-term capital (ROLF), quick solvency ratio (QR) and ability ratio interest payment (ICR); (v) financial risk is not correlated with inventory turnover (ITR) and total asset turnover (TATR).

The study on this issue in Vietnam has been verified by Hau (2017) when analyzing the factors affecting the financial risk of 34 real estate listed companies on HSX in the period 2013 - 2015. The research results show that the financial risk of real estate listed companies in Ho Chi Minh Stock Exchange have a significant correlation with the liquidity ratio. current payment, quick solvency coefficient, general solvency coefficient, fixed capital coefficient; and there is no correlation with debt structure, revenue-yield ratios, profitability ratios of assets, inventory turnover, fixed assets turnover, total assets turnover, accounts receivable turnover. revenues, self-financing coefficients.

Table 1. Summary of empirical evidence on factors affecting financial risk

Impact factors	Research author	The findings from the study
Debt structure	Gang & Liu (2012), Bhunia & Mukhuti (2012), Hau (2017).	Debt structure has no correlation with financial risk
Solvency	Gang & Liu (2012), Bhunia & Mukhuti (2012), Hau (2017).	Financial risk are inversely related to solvency
Profitability	Gang & Liu (2012), Bhunia & Mukhuti (2012), Hau (2017).	Financial risk is negatively related to profitability
Operation ability	Gang & Liu (2012), Bhunia & Mukhuti (2012), Hau (2017).	Failure to demonstrate the relationship of performance to financial risk
Capital Structure	Gang & Liu (2012), Bhunia & Mukhuti (2012), Hau (2017).	Financial risk are inversely related to capital structure

(Source: Compiled by the authors)

The Alexander Bathory model was used as a dependent variable in empirical studies in India, China, Taiwan ... through a secondary database collected at Stock Exchanges with all Different types of businesses, production and business lines. In Vietnam, research on financial risk is quite a lot, but applying this theoretical model to verify with the database of listed private enterprises in food and beverage industry in VietNam stock market, solving like the research results and present recommendations are not yet available. Therefore, within the scope of the study, the Alexander Bathory model continues to be tested in Vietnam to identify factors affecting financial risk, thereby contributing to improving the efficiency of financial risk management of enterprises.

2.2. Research Methodology

2.2.1. Data Collection

The study used panel data collected from 27 private enterprises in food and beverage industry listed on Vietnam Stock Market from 2009 to 2019 provided by FiinGroup JSC. Research data is extracted from the audited financial statements of these companies.

2.2.2. Research Models

The concept of analysis of the factors that influence financial risk is explained by the following framework (Fig. 1):

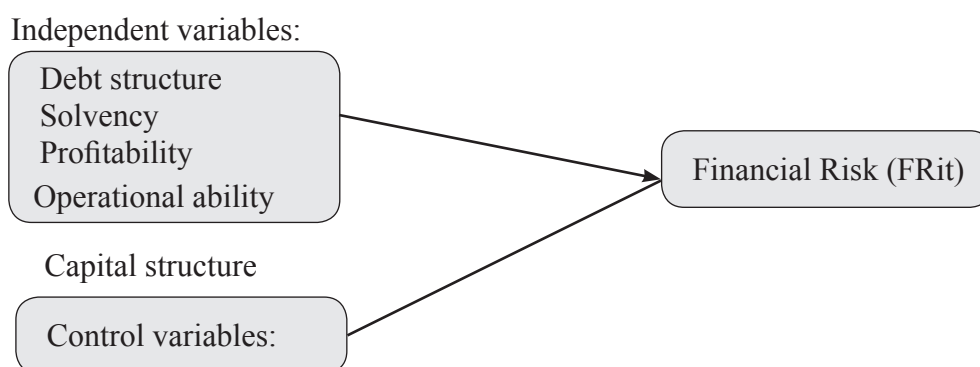


Fig. 1. Research model of factors affecting enterprises' financial risk

Dependent variable

In this paper, Alexander Bathory model was used to measure the financial risk. The model can be expressed as below:

$$FR_{it} = SZL_{it} + SY_{it} + GL_{it} + YF_{it} + YZ_{it}$$

FR_{it} is the value measuring financial risk of index,

We took it as dependent variable in this paper.

SZL_{it} = (profit before tax + depreciation + deferred tax) / current liabilities

SY_{it} = Pre-tax profit/operating capital.

GL_{it} = Shareholders' interests / current liabilities

YF_{it} = Net tangible assets / total liabilities

YZ_{it} = Working capital / total assets.

According to Alexander Bathory's view, the smaller the value of FR it is, the weaker the enterprise strength is, and the higher financial risk of enterprise is.

Independent variables

We summarized in five main factors that affect construction firm's financial risk, which are debt structure, solvency, profitability, operation ability, and capital structure, set 10 indexes as independent variables to express the five main factors. Controlled variables are sale growth, firm size and firm age. The detail is shown in Table 2.

Table 2. Definition of model variables

Variable name	Code	Related definition	Notes
Financial risk	FR	Bathory's model metrics	Financial risk metric values
Debt structure	DS	Liability structure ratio	Current liabilities / non-current liabilities
Solvency	QR	Quick Ratio	(Current assets-inventory)/ current liabilities
Profitability	ROA	Return on Assets	ROA = Net Income Before Taxes/ Average total assets
	ROS	Return on Sales	ROS= Net income/ Net Sales
Operation ability	IT	Inventory turnover	Cost of goods sold/inventories
	FAT	Fixed asset turnover	Sales/net fixed assets
	TAT	Total asset turnover	Sales/total assets
	RT	Accounts receivable turnover	Annual credit sales/accounts receivable
Capital structure	ES	Net assets ratio	Equity/total assets
	FAS	Fixed assets ratio	Fixed assets/total assets
Sale Growth	GR	Sale Growth	(Current period net sales – previous period net sales)/ previous period
Firm size	SIZE	Firm size	Firm size measured by log of total assets
Firm age	AGE	Firm age	Year of research – year of establishment

(Source: Compiled by the authors)

2.2.3. Research hypothesis

Based on previous studies and the theories, we propose the hypothesis as follows:

H1: Private enterprises in food and beverage industry' financial risk is negatively related with debt structure.

H2: Private enterprises in food and beverage industry' financial risk is negatively related with solvency.

H3: Private enterprises in food and beverage industry' financial risk is negatively related with profitability.

H4: Private enterprises in food and beverage industry' financial risk is negatively related with operation ability.

H5: Private enterprises in food and beverage industry' financial risk is negatively related with capital structure.

2.2.4. Research design

The paper employs the quantitative method using panel data through multiple linear regression techniques to estimate the impact of independent variables on dependent variables in the model. First, three popular methods using panel data which are Pooled Ordinary Least Square (POLS), Fixed Effects model (FEM) and Random Effects Method (REM) are used in this research. F-test and multiplier test suggested Breusch & Pagan Lagrangian (Breusch & Pagan, 1979) are also applied to select the most appropriate model. Breusch & Pagan Lagrangian-test is for choosing between POLS and FEM model. Meanwhile, Hausman test is for choosing between FEM and REM model. Following the regression of these models, the required tests for multicollinearity, autocorrelation are run to confirm that the conclusions are firm, unbiased and valid. In addition, there is a problem of autocorrelation and heterogeneity in a panel data model, resulting in ineffective POLS, FEM and REM estimates. Therefore, new methods such as Generalized Least Square (GLS) are necessary to address the above-mentioned phenomena and produce more reliable estimates.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Descriptive Statistic

Table 3 presents descriptive statistics analysis. The mean value of financial risk was 6.56 of which the highest financial risk was 66.06 and the lowest financial risk was 1.55; the maximum of return of assets is 0.72 while the minimum is -0.32, and the standard deviation reached 0.09; the maximum of return of sales is 1.68 while the minimum is -0.87. The mean value of net assets ratio is 0.5 while the maximum of net assets ratio is 0.96. The average of quick ratio was over 1.2. To some extent, it indicates that sample enterprises' liquidation capacity is relatively strong.

Table 3. Descriptive statistical analysis of sample

Variable	Obs	Mean	Std. Dev	Min	Max
FR	296	6.56	6.69	1.55	66.06
DS	278	428.82	5364.98	0.33	89225.85
QR	297	1.27	1.71	-0.16	19.76
ROS	296	0.08	0.15	-0.87	1.68
ROA	296	0.08	0.09	-0.32	0.72
IT	296	4.80	3.20	0.40	35.71
FAT	296	13.46	30.03	0.20	251.97
TAT	296	1.22	0.64	0.05	3.24
RT	296	8.17	7.74	0.45	64.50
ES	297	0.50	0.21	0.03	0.96
FAS	297	0.21	0.15	0.01	0.77
AGE	297	14	7.71	2	43
SIZE	297	27.94	1.55	24.79	32.21
GR	296	0.17	0.46	-0.73	4.11

(Source: Data processing results of authors)

3.1.2 Correlation analysis

According to the statistics obtained from the regression analysis as shown in Table 4, independent variables of DS, FAT, TAT and RT have inverse impacts on FR_{it} . Meanwhile, the other independent variables have concurrent impacts on FR_{it} . The following Table 4 shows the correlation coefficients between variables. The purpose is to examine whether there is close correlation between independent variables and dependent variables to exclude variable that may lead to multi-collinearity. The results show that the correlation coefficient between any pair independent variables in the model is no less than 1.0 and therefore multicollinearity is unlikely to occur.

Table 4. Correlation matrix

	FR	DS	QR	ROS	ROA	IT	FAT	TAT	RT	ES	FAS	AGE	SIZE	GR
FR	1													
DS	-0,04	1												
QR	0.92	-0.04	1											
ROS	0.17	-0.10	0.14	1										
ROA	0.27	-0.24	0.21	0.68	1									
IT	0.04	-0.03	0.08	0.12	0.24	1								
FAT	-0.02	0.02	0.01	-0.06	0.03	-0.02	1							
TAT	-0.01	0.08	-0.02	-0.17	0.19	0.28	0.40	1						
RT	-0.01	0.15	-0.05	-0.02	0.13	0.21	0.07	0.44	1					
ES	0.69	-0.03	0.57	0.27	0.45	0.16	-0.10	-0.02	0.03	1				
FAS	-0.10	-0.00	-0.24	-0.12	-0.09	0.11	-0.34	-0.05	0.13	-0.07	1			
AGE	-0.02	0.04	0.00	-0.04	-0.02	0.02	0.21	0.02	-0.06	0.09	-0.17	1		
SIZE	-0.18	-0.08	-0.12	0.18	-0.02	-0.10	-0.10	-0.57	-0.16	-0.10	-0.12	-0.14	1	
GR	-0.07	-0.03	-0.06	0.08	0.15	0.12	0.01	0.03	-0.02	-0.07	0.02	-0.12	0.12	1

(Source: Data processing results of authors)

3.1.3. Regression results

Regression results with FR_{it} as dependent variable and DS, QR, ROS, ROA, IT, FAT, TAT, RT, ES, FAS as independent variables; AGE, SIZE, GR are control variables are summarized in Table 5 respectively. Multicollinearity test results show that the magnification coefficient of VIF variance are <10 , the model has no multicollinearity phenomenon. The largest VIF is 3.12, which indicates that the possibility of multicollinearity is not significant. The Breusch and Pagan Lagrangian Multiplier test for random effects results (Table 5) rejected the null hypothesis that the Pooled OLS model was appropriate. Following the results from the Hausman test (Table 5), the null hypothesis that the Random Effects model was appropriate was rejected; indicating that the differences between the FE model and the RE model were systematic. Therefore, the coefficients of the FE model were efficient.

Table 5. Regression Results

Variable	VIF	Regression coefficients			
		POLS	FEM	REM	GLS
DS	1.16	-0.0000158	-0.00000102	-0.0000102	0.00000998
QR	1.65	3.106***	2.909***	2.968***	2.100***
ROS	2.40	1.673	1.642	1.529	0.841
ROA	3.12	-1.517	-0.516	-0.875	2.055
IT	1.23	-0.161***	-0.132**	-0.164***	-0.077**
FAT	1.50	0.00984*	0.00737	0.00768	0.0036
TAT	3.03	-0.140	-0.506	-0.183	-0.265
RT	1.37	0.0147	0.0630***	0.0346	0.0468***
ES	1.95	8.383***	13.91***	10.86***	8.04***
FAS	1.37	5.166***	4.654***	4.783***	2.9316***
AGE	1.17	-0.0360*	0.232***	0.00223	0.000003
SIZE	1.84	-0.294**	-1.470***	-0.333**	-0.193***
GR	1.10	0.115	0.600**	0.180	0.084
Cons		6.764*	33.52***	6.233	4.201**
Significance		F (13, 263) = 188.46	F(13,237) = 107.34	Wald chi2(13) = 1620.48	Wald chi2(13) = 1066.64
White test		Chi2 (103) = 220.90 Prob > Chi2 = 0.0000			
Breusch and Pagan Lagrangian Multiplier test		Chibar2(01) = 19.09 Prob > chibar2 = 0.0000			
Hausman test		Chi2(12) = 38.37 Prob>chi2 = 0.0001			
Wooldridge test		F (1, 26) = 2.140 Prob>F = 0.1555			

t statistics in brackets * $p<0.1$, ** $p<0.05$, *** $p<0.01$.

(Source: Data processing results of authors)

After regression and testing, selecting the appropriate model is FEM, the Wooldridge test indicates that that the model has no autocorrelation (p -value $>5\%$) and the White test indicates that the model has heterogeneity (p -value $<5\%$), so the authors proceeds to overcome the discovered defects of the model by GLS method. The regression results shown in Table 4 show that the

relationship between IT and SIZE with FR_{it} is in the opposite direction (the regression coefficient receives negative values is -0.077 and 0.193), this relationship is statistically significant (p-value <0.05). Besides, the relationship between QR, RT, ES, and FAS with ROA is the same direction, this relationship is statistically significant (p-value <0.01). In addition, no statistically significant relationship was found between DS, ROS, ROA, FAT, TAT and AGE with FR_{it} .

3.2. Discussion

Firstly, financial risk of private enterprises in food and beverage industry listed on the stock market have no correlation with debt structure (H1 is not accepted). This result is consistent with the research results of Gang & Liu (2012), Bhunia & Mukhuti (2012), Hau (2017).

Secondly, the financial risk of private food and beverage enterprises listed on the stock market are negatively correlated with solvency (H2 approved). This result is consistent with the results of the research: Gang & Liu (2012), Bhunia & Mukhuti (2012), Hau (2017).

Third, the financial risk of the private food and beverage companies listed on the stock market are not correlated with profitability (H3 is not accepted). This result is consistent with the research of Hau (2017), but contrary to the findings of Gang & Liu (2012), Bhunia & Mukhuti (2012).

Fourth, the financial risk of private food and beverage companies listed on the stock market are not negatively correlated with performance (H4 approved). This result is inconsistent with the results of the study: Gang & Liu (2012), Bhunia & Mukhuti (2012), Hau (2017).

Fifth, the financial risk of the private food and beverage industry listed on the stock market are negatively correlated with the capital structure (H5 approvals). This result is consistent with the research results of Gang & Liu (2012), Bhunia & Mukhuti (2012), Hau (2017).

In addition, the variable reflecting firm size (SIZE) has a positive impact on FR_{it} , opposite to financial risk. When large-scale food-beverage businesses will help food-beverage businesses increase business efficiency, it will also generate large cumulative profits. This helps businesses in the food and beverage industry to improve their financial independence and minimize financial risk

4. CONCLUSIONS AND POLICY IMPLICATIONS

This paper examines the effects of debt structure, solvency, profitability, performance, capital structure and age, firm size, revenue growth, and financial risk of private enterprises in food and beverage industry listed on Vietnam Stock Exchange in the period of 2009-2019. In comparison with previous domestic and foreign countries, this study also contributes to a better explanation of the factors affecting corporate financial risk.

The financial risk of the business is represented by the variable FR_{it} (Bathory model). Bathory's model suggests that the higher the value of FR_{it} , the better the financial position of the company and the lower the financial risk. According to empirical research results, there are 4 independent variables included in the study that affect financial risk including: solvency, accounts receivable turnover and financial structure variables. In addition, the size of the business also affects the financial risk of the business. Solvency has a positive impact on FR_{it} , high solvency represents good financial situation and low financial risk. Receivables turnover is one of the variables showing

the performance of the enterprise, the receivables turnover has the opposite effect on the financial risk of the enterprise. The two variables representing the financial structure of the business both positively impact with Fr, which shows that the financial autonomy of the enterprise will contribute to minimize financial risk for the business.

Therefore, businesses need to take measures to improve solvency, good management of receivables as well as improve financial autonomy to contribute to reducing financial risk in the enterprise. In addition, large-scale enterprises with advantages of capital also contribute to minimize financial risk for businesses. The research results help food and beverage businesses explain the causes that affect the financial risk of businesses, thereby helping business executives in making short-term financial decisions. and long-term business, help businesses improve the efficiency of financial risk management.

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THE IMPACT OF CAPITAL STRUCTURE ON THE COST OF CAPITAL: EVIDENCE FROM VIET NAM PETROLEUM TRADING FIRMS

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Abstract: *The determination of capital structure plays an important role in the development of enterprises because this directly affects the cost of capital, followed by influencing the efficiency of production operations and business activities of the enterprise. Although studies on the capital structure has been paid a great attention, which focused on assessing the impact of the capital structure on the efficiency of production operations and business activities, the impact of the level of debt on cost of capital of enterprises, especially for petroleum trading firms has been neglected. The article examines the relationship between the cost of capital and the capital structure of enterprises by analysing the data of 31 petroleum trading enterprises being listed on Vietnam stock market from 2014 to 2019.*

Key words: *capital structure, the cost of capital, oil and gas*

1. INTRODUCTION

Capital structure of the firm, as defined by Baker and Martin (2011), is the mixture of debt and equity that the firm employs to finance its productive assets, operations and future growth. The capital structure decision is crucial for any business organization. The decision is important because it is a direct determinant of the overall costs of capital and contributes to the firm's total level of risks.

The relationship between capital structure and firm the cost of capital received considerable attention in the finance literature. A number of theories have been advanced in explaining the capital structure of firms. The capital structure decision of a firm influences its shareholders return and risk, consequently, the market value of its shares may be affected. However, previous researchers have reported conflicting results, the lack of a consensus about this crucial topic is taken as a motivation to conduct this research in a new context that of Vietnam petroleum trading firms sector. A better understanding of the issues at hand requires a look at the concept of capital structure and its effect on the cost of capital. This paper examines the relationship between capital structure and the cost of capital of petroleum trading companies listed on the Vietnam Stock Exchange during the period 2014 - 2019.

2. LITERATURE REVIEW

While the irrelevance capital structure theorem of Modigliani & Miller (1958) was accorded many criticisms due to its idealistic assumptions of no taxes, no transaction or distress

1 Academy of Finance

2 Grant Thornton (Vietnam)

costs, perfect market information coupled with the linearly related capital structure refinement (MM, 1963); the agency cost theoretical model popularized by Jensen and Meckling (1976) assumed that firms have optimal capital structure position they strive to achieve. The optimal capital structure of the firm in the agency cost theoretical model is the capital structure level that minimizes the agency cost and maximizes the value of the firm. This implies that capital structure choice of the firm is dynamic. The dynamic nature of capital structure suggests that capital structure of firms change across firms and time, for example: each firm in an industry for example can change their capital structure over time to ensure the agency cost is minimized and value of the firm is maximized.

Over the past several decades, theories on a firm's capital structure choice have evolved with several directions. Furthermore, different models have been built to explain the effect of capital structure on the firms' performance, in which the research focuses on profitability (represented by ROE, ROA, BEP) or the cost of capital (represented by WACC). A number of significant studies have been conducted such as the study "*The Cost of Capital, Corporate Finance and the Theory of Investment*" by Modigliani F. & M.H. Miller (1958), or Ross's study (2003) - "*Capital structure and the cost of capital*" all show the close relationship between capital structure and the capital cost of enterprises. In Vietnam, Hoang Trung Duc, (2019) made a study entitled "*The capital structure of electrical enterprises listed in Vietnam securities*" with one of the purpose to measure the impact of capital structure on weighted average cost of capital (WACC). He has taken 16 electrical enterprises listed on HNX and HSX in the period 2012 - 2017 as the sample for the study. This study shows that the relationship is negative.

In summary, there is no universal theory of the debt-equity choice. Different views have been put forward regarding the financing choice. The present study investigates the effect of capital structure on profitability of listed firms on the GSE.

3. RESEARCH METHODS

The article used the financial statements of 31 oil and gas trading firms listed on Vietnam stock market from 2014 to 2018. Variables used for the analysis include WACC (Weighted Average Cost of Capital) and debt ratios. Liquidity, growth opportunities, tangibility, risk are also included as control variables. The panel character of the data allows for the use of panel data methodology.

This study involves in the multivariate dependence technique where distinction of independence and dependence variables are being used to test the hypothesis (Zikmund, Babin, Carr, & Mitch, 2008). The dependent variable is WACC - representing the capital cost of oil and gas enterprises and DR - the independent variable representing the capital structure of enterprises, specifically as follows:

$$WACC_{it} = \beta_0 + \beta_1 \cdot DR_{it} + \beta_2 \cdot CR_{it} + \beta_3 \cdot GROW_{it} + \beta_4 \cdot TANG_{it} + \beta_5 \cdot RISK_{it} + e_{it}$$

The dependent and independent variables in the model are detailed as follows:

Table 1: Variables of the model

Variables	Description
<i>Dependent variables</i>	
WACC	Weighted Average Cost of Capital ()
<i>Independent variables</i>	
DR	The variable represents the level of corporate debt usage, which is determined by the proportion of debt /Total capital
CR	The variable representing the solvency of the firm, determined by the current solvency coefficient (current assets /current liabilities)
GROW	The variable representing the firm's growth ability, is determined by the formula $[(TS_n - TS_{n-1})/TS_{n-1}]$
TANG	The variable represents the asset structure of the enterprise, which is determined by Fixed asset/Total assets
RISK	The variable representing the business risks of an firm, which is determined by the standard deviation of EBIT/Total Asset

The study conduct tests of data samples collected based on the least squares method (OLS), fixed effects regression model (FEM) and random effects regression model (REM). OLS, FEM and REM models are also tested to evaluate the multi-collinear phenomena, autocorrelation, and variance of variation. Moreover, the Hausman test was also conducted to select the appropriate model. Finally, if the models still have defects, the general regression model GLS is employed to ensure the rationality and reliability of the research model.

The correlation coefficient matrix illustrates that the relationships between the variables are less than 0,5. Therefore, the introduction of variables into the model will not bring the multi-collinear phenomenon.

Table 2: Correlation Coefficients of the Explanatory Variables

	DR	CR	TANG	SIZE	RISK
DR	1.0000				
CR	-0.4091	1.0000			
TANG	-0.0145	-0.1405	1.0000		
SIZE	0.1277	-0.0595	-0.2616	1.0000	
RISK	-0.3492	0.4397	-0.1569	-0.2474	1.0000

4. RESEARCH RESULTS

The model is tested by OLS method. The value of R^2 is equal to 0.3331, which reflects that the independent variables account for 33.01% of the variation of the dependent variables. However, when carrying out the test of the model's defects, the author found that the OLS model does not appear to have multi-collinear phenomena (VIF coefficient is less than 2) but self-correlation phenomenon occurs (the p-value of the Wooldridge test = 0,0306 is less than 0,05) and the unequal variance phenomenon (the p-value of the White test is less than 0,05).

Table 3: Multicollinearity Test

Variable	VIF	1/VIF
CR	1.38	0.723483
RISK	1.33	0.750546
DR	1.28	0.782759
TANG	1.05	0.949464
GROW	1.04	0.958537
Mean VIF	1.22	

Table 4: Heteroskedasticity Test

White's test for Ho: homoskedasticity
against Ha: unrestricted heteroskedasticity

chi2(20) = 57.31
Prob > chi2 = 0.0000

Cameron & Trivedi's decomposition of IM-test

Source	chi2	df	p
Heteroskedasticity	57.31	20	0.0000
Skewness	8.42	5	0.1346
Kurtosis	3.01	1	0.0830
Total	68.74	26	0.0000

Table 5: Autocorrelation Test

Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation

F(1, 30) = 5.153
Prob > F = 0.0306

Therefore, FEM, REM model is used. The Hausman test gives the p-value of 0,0187 greater than 0,05 so that the REM model is a more reliable model. However, Breusch - Pagan test shows that this model still has the Heteroskedasticity and autocorrelation phenomenon. Therefore, the modified GLS is employed model to overcome the above defects.

Table 6: Regression Results

c	OLS WACC	FEM WACC	REM WACC	GLS WACC
DR	0.0137** [1.98]	-0.00641 [-0.48]	0.00126* [0.13]	0.0148*** [2.64]
CR	0.00710*** [7.71]	0.00283*** [2.64]	0.00390*** [4.01]	0.00506*** [4.71]
TANG	0.0151* [1.90]	0.0275 [1.49]	0.0198 [1.59]	0.00859 [1.30]
GROW	-0.00042 [-0.08]	-0.00532 [-1.22]	-0.00507 [-1.20]	-0.00485** [-2.17]
RISK	0.0961**	.	0.137	0.121**

	[2.14]	.	[1.63]	[2.21]
_cons	0.0199***	0.0324***	0.0257***	0.0208***
	[5.62]	[6.16]	[4.58]	[6.41]

5. DISCUSSION AND CONCLUSION

The test results show that the debt ratio (DR) is positive relationship with the average cost of capital with a p-value significance of less than 0.01 in the GLS model. This shows that the increasing level of debt by 1% leads to the increase in the capital cost of oil and gas enterprises by 0,0148%. Moreover, this shows that for most oil and gas enterprises, the cost of using loans is greater than the cost of using equity. Therefore, the priority to use internal capital is considered as a basic measure to lower the average cost of capital use of oil and gas firms. The increase in internal capital can be carried out through two basic measures: increasing equity capital and improving undistributed after-tax profit.

Solvency (CR) also shows a positive relationship with the average cost of capital (WACC). With 99% reliabilities, when the solvency increases by 1%, WACC increases by 0.00506%. It can be seen that oil and gas trading firms have large working capital turnover, which requires these to ensure funding for their business activities. Therefore, the continuous mobilization and repayment ways, especially short-term debts, is considered as one of the characteristics of oil and gas trading firms compared to other firms in the same sector. The high solvency means that firms do not effectively use short-term assets which indirectly reduced the efficiency of business activities, reduced the internal capital of enterprises and made oil and gas firms must mobilize external capital, increasing WACC.

Besides, firms is growing along with the ability to mobilize capital at lower costs so that the negative relationship between GROW and WACC has high economic significance. Specifically, when firms improve the growth rate by 1%, WACC will reduce 0,00485% with the significant p-value less than 0.05. The development of a firms leads to the quick expand of its asset size as well as capital so that it is easy to approach loans with lower expenses.

In addition, RISK variable has a positive relationship with WACC. The regression model shows that for oil and gas firms, when the risk level increases by 1%, WACC will increase by 0.0208%. This means that oil and gas firms are facing business risks and often have to mobilize loans with higher costs than less risky firms.

In conclusion, the quantitative model once again confirms the relationship between the capital structure and the average cost of capital of firms. The relationship found between these two criteria for oil and gas firms is a positive relationship. The decision to raise loans will directly affect the cost of capital and increase business costs, therefore, reducing profits of oil and gas firms. Hence, building the optimal capital structure with the requirement of achieving the minimum average cost of capital is an important task in the development process of Vietnam oil and gas trading firms.

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SOLUTIONS FOR APPLYING INTERNATIONAL FINANCIAL REPORTING STANDARDS (IFRS) IN VIETNAM

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Abstract: *For adaption requirements of international economic integration, as well as requirements of accounting - auditing integration, the article focused on assessing the implementation of the Vietnamese accounting standards system and some changes in principles and methods for valuation in current time. Moreover, it focused on the implementation of Vietnam's accounting-auditing commitment. Base on the role and the necessity of IFRS, the article suggested some recommendations to apply IFRS in Vietnam.*

Keywords: *Ifrs, Viet Nam, accounting – auditing, economic*

I. INTRODUCTION

Along with the policy of economic openness and integration with other countries in the region and over the world, Vietnamese accounting system has experienced tremendous challenges such as innovation, integration and development towards accounting equality in the region and over the world. Vietnamese accounting system has affirmed its significance in implementing one of the three breakthroughs of the country's socio-economic development strategy through the 11th National Congress of the Communist Party of Vietnam in 2011, which is "Perfecting the socialist-oriented market economy institution focusing on creating a fair competitive environment and administrative reform" It is also one of important objectives of the accounting-auditing development strategy to 2020 and vision to 2030 under the Government's Decision No. 480/QD-TTg of March 18, 2013, namely: To set up a complete accounting and audit system conformable with the Vietnamese State's management mechanism and the development of regional and world accounting and audit professions in order to satisfy information requirements for management, administration, inventory and control of economic resources and national economic and financial activities.

In recent years, to achieve the objectives, strategies of socio-economic and accounting - auditing development of the country to meet the renovation requirements of the market economy and the economic development of the country with the policy of opening up and integrating into the regional and international economy more and more deeply, the accounting system has been making lots of changes in the content, methods as well as the functions and roles of accounting. Accounting is not only an economic management tool, a science subject, a profession but also a business language, a information system that provides users more and more reliable information presented in the reporting system and timely update changes in the market economy so that users can make appropriate and effective economic decisions.

In order to meet the requirements of providing information on financial statements in the trend of international economic integration and development, countries need to prepare and present their financial reporting system according to the International Financial Standards Standards (IFRS).

The International Accounting Standards System includes International Accounting Standards (IAS) and International Financial Standards Standards (IFRS) issued and updated, supplemented, amended and replaced by the International Accounting Standards Board (IASB). IAS is a necessary and important condition to ensure the preparation and presentation of financial statements in accordance with international practices. In the current trend of international openness and integration for economic development, most countries have applied IAS. According to information from the IASB, over 130 countries and territories have declared the application of IFRS. Vietnam, unfortunately, is one of the few countries where IFRS have not yet been applied. Through the research on the application of IFRS in the world, the need as well as the great effect of applying IFRS to strategic objectives of the accounting and auditing development of Vietnam vision to 2030, the research application of IFRS has been considered as urgent and necessary - this is the first specific objective of the scheme for application of financial reporting standards in Vietnam issued in accordance with Decision 345/QĐ-BTC dated March 16, 2020, which is: “Develop measures and route, publicize and provide assistance regarding application of international financial reporting standards (IFRS) in Vietnam”. The necessity of preparing and presenting financial statements according to IFRS comes from:

- Limitations, and problems of Vietnamese Accounting Standards (VAS)
- Demands for using information of different entities in the current market economy condition
- Practical effects of financial statements prepared according to IFRS:

+ Affirming the important role, nature and functions of accounting in the context of current international accounting development, that is an effective management tool providing useful, practical and effective financial information.

+ Increasing the attraction of foreign investment capital, serving as a basis for international financial institutions, foreign corporations and companies to make investment decisions to Vietnam.

- Accelerating and deepening this international economic integration of Vietnam into the regional and world economy.

With the above-mentioned necessity and great effects, Vietnam has realized the need and significance of the application of IFRS.

In our opinion, to apply the IFRS system to Vietnam, the following solutions should be implemented:

2. COMPLETION OF PRICING PRINCIPLES, METHODS IN VIETNAMESE ACCOUNTING

One of the first important solutions to apply IFRS in Vietnam is perfecting pricing principles and methods in accounting toward applying a fair value accounting model to suit international accounting practices.

Financial statements are both an accounting method and general reports on financial position, business performance and cash flow of an enterprise. Assets and liabilities presented in the

financial statements system are valued according to the prescribed principles and methods of price calculation. The pricing principle is understood as the main price type used to calculate the price of elements of financial statements, while the price calculation method is the accounting method that determines value of the price calculation objects according to specified principles. Expressions of the pricing method are the types of prices used and the calculation techniques. There have been different pricing models in Vietnam, namely:

- Historical cost model (actual price)
- Market price model
- Fair value model

The historical cost model uses the historical cost to calculate the prices of accounting objects at all times: initial recognition, after initial recognition and financial statements preparation.

At the market price model, prices are determined at their historical prices and market prices: the historical prices are used to calculate the prices of objects at the time of initial recognition while market prices are used to calculate prices when preparing financial statements.

With the fair value model, the valuation of accounting objects is determined on a basis of voluntary and understanding the value of objects among parties involved in the valuation.

In Vietnam, the awareness, understanding and utilization of the fair value model is quite new and it is only officially mentioned in Article 6 of the Law on Accounting 2015 (after amending and supplementing to the Law on Accounting 2003). With provisions on the use of fair value, there is a legal basis to implement the pricing principles and methods according to the important fair-value model – an important basis for applying international accounting standards into Vietnam. Specific issues and orientations for the application of fair value according to international practice will be addressed in the following solutions regarding the promulgation of Vietnamese accounting standards “Determination of fair value”.

3. COMPLETION OF VIETNAMESE ACCOUNTING STANDARDS (VAS), ISSUANCE AND SUPPLEMENTATION OF NEW ACCOUNTING STANDARDS APPROACHING TO IFRS

In our opinion, the next important solution to apply IFRS in Vietnam is to complete, amend and supplement new accounting standards of Vietnam approaching to IFRS:

Vietnamese Accounting Standards (VAS) after 5 publications includes 26 standards. The publication of the promulgation of Vietnamese accounting standards on the basis of international accounting standards from the early years of openness has marked great results in reforming the Vietnamese accounting system on the basis the implementation of the EURO. TAPVIET project to gradually formulate the legal framework for accounting in Vietnam. Along with the promulgated accounting standards, there are circulars guiding the application and regulations of the Vietnamese enterprise accounting regime such as Decision 15/2006 and Circular 200/2014.

The VAS as well as IAS is understood as a system of regulations on accounting principles and methods for recording and preparing financial statements.

International accounting standards (IAS) are regularly updated and supplemented to suit the development of the market economy and new requirements on providing financial information for users in the trend of deep integration and development into regional and global economy.

In order to implement the new regulations on accounting standards prescribed in the Law on Accounting 2015 and to improve Vietnamese accounting standards approaching to IFRS system, we need to issue the following additional Vietnamese accounting standards:

2.1. Vietnamese accounting standards “Determination of fair value”

It's well known that the foundation of Vietnamese Accounting Standards is the historical price, so the financial statements have not reflected correctly and fully the financial situation of the businesses at the time of preparing the report because of the value of the assets and liabilities in the market economy always change, so to integrate towards the application of international accounting standards, it is necessary to change the pricing principles and methods together with the study to promulgate standards “Determination of fair value” based on the approach to the IFRS 13.

In the world, fair value has been widely used in accounting standards and financial statements. In 2010, the draft of the International Financial Reporting Standard No. 13 (IFRS No. 13) determined the fair value as a basis used to calculate the prices of some accounting objects. After researches and discussion, this Standard was published in 2011 and became effective from 2013. Accordingly, the fair value is understood as “The price at which an asset can be exchanged among parties eligible for knowledge in a parity transaction”

In the IFRS system, fair value is used in the following cases:

- To determine historical cost.

According to provisions of the accounting theory framework of the International Accounting Standards Board, fair value is not a basis for measurement to identify elements of financial statements but only used to determine the value at initial recognition for certain assets and liabilities.

- To determine value after initial recognition

In this case, fair value is used to determine the value of assets and liabilities such as real estate, plants, machinery, financial instruments, etc.

- To determine asset depreciation

According to IFRS No. 13, the fair value, depending on each case, is determined by one of the following three levels:

a. The reference data is the listed price of assets or liabilities homogeneous on the operating market that the entity may collect at the specified date.

b. The reference data may be collected for assets or liabilities directly at market prices or indirectly based on listing prices of markets other than level 1. If assets or liabilities are related to a specific provision, the reference data at level 2 must be collectible reference data of all essential provisions related to assets or liabilities.

c. The reference data on assets or liabilities are not based on the active market (there is no market as biological assets, agricultural products - discuss later).

In Vietnam, fair value has been mentioned scatteredly in some related accounting standards such as: VAS 03 “Tangible fixed assets”, VAS 04 “Intangible fixed assets”, VAS 06 “Leases”, VAS 10 “Effects of changes in foreign exchange rates”, VAS 11 “Business combinations” and VAS 14 “Revenue and other income”

The concept of fair value has also been mentioned in these VAS when referring to the object to be priced that the standard mentioned. According to provisions of the above-mentioned standards, the fair value mentioned in the VAS for determining value of accounting objects are primarily assets at initial measurement and recognition of tangible, intangible fixed assets, revenue, other incomes and cost of the business combination as well as initial recognition and reporting of monetary items denominated in foreign currencies.

Although there are regulations on fair value in each standard and the method of measuring the fair value, they are not legal and uniform but only specific to each content and this is also one of the reasons for limitations in the widespread application of fair value. Therefore, to approach the fair value model and to ensure compliance with the international practices on financial statements, the Law on Accounting 2015 has specified provisions in Clause 1, Article 6 “Accounting Principles” accounting “and Clause 3, Article 7 “Accounting standards and codes of ethics for accountants”

Based on the studies of fair value models in countries with developed market economies, Vietnam needs to study and gradually approaches the fair value model to complete the pricing method of Vietnamese Accounting System in the trend of deep economic development and integration with the region and the world in order to promulgate the “Measurement of fair value” standard approaching to IFRS No. 13. Accordingly, the fair value standard needs to specify the purpose, scope of application and the following basic contents:

- **The concept of fair value: In our opinion**, fair value is the value at the time of selling an asset or paying a liability between parties engaging in a transaction voluntarily and having an understanding of the parity exchange of transactions made

- Basis of fair value measurement: With Vietnam’s current conditions, the basis for fair value measurement should be based on market prices and conform to international practices.

- Method of fair value accounting: there should be regulations on accounting methods for each type of assets, liabilities and the use of the “Market Access” method is suitable.

- Assessment and recognition of fair value

The assessment and recognition of fair value should be done in accordance with the Law on Accounting and international practices as follows:

- + Assets and liabilities assessed and recognized at their fair values at the end of the financial period include:

- Financial instruments required by accounting standards must be recognized and reviewed at fair values

- Monetary items denominated in foreign currencies are revalued at actual exchange rates

- Other assets or liabilities that are subject to constant fluctuation as required by accounting standards must be revalued at fair values.

+ The reassessment of assets and liabilities at fair values must be made from reliable grounds. If there is no reliable basis for measurement, assets and liabilities must be determined at historical cost.

+ The Ministry of Finance stipulates that assets and liabilities are recognized and revalued at fair value as well as accounting method for recognition and revaluation at fair value.

- Provisions on the use of fair value in accordance with international accounting standards

+ Use of fair value for initial assessment and recognition of the asset in the following circumstances:

—► When enterprise does not spend money to buy or manufacture new products

—► Even if there is an original cost of the asset, in this case, there will be a difference between the fair value and the historical price, the difference will be recognized as a profit or loss at the time of initial recognition.

—► The cost of business combination is determined on the basis of fair value of exchanged assets

+ Use of fair values for calculating prices after initial recognition and when preparing financial statements

—► Financial assets and investment properties are stated at fair value at the reporting time

—► Assets are machinery, equipment, and plants that are assessed at fair value

—► The biological assets and its products are recognized at fair value subtracting estimated cost of sale at harvest.

+ Solving differences of volatility due to changes in fair value

—► Recognition as income, expense including profit (loss) in business performance.

—► Recognition of the increase or decrease of the equity source in the balance sheet of assets held for sale.

3.2. Issuance of accounting standard “Financial instruments” to develop the stock market

The context of a developed market economy and restructuring of enterprises and financial institutions and equitization process has generated transactions related to particularly complex financial instruments when many enterprises used derivative financial instruments for hedging purposes. There were no regulations on accounting and guidance, therefore, the research and promulgation of Vietnam’s accounting standards on financial instruments are needed.

Up to now, there have been no regulations or guidelines on accounting of financial instruments in Vietnam. At the international level, there are three accounting standards on financial instruments, including: IAS 32-Financial instruments; IAS 39-Financial instrument: recognition and valuation and IAS 7-Financial instrument: information disclosure. The international accounting standards for financial instruments always subject to changes and supplements to meet the management requirements of growing market economy.

In Vietnam, there is only Circular No. 210/2009/TT-BTC dated November 06, 2009 guiding the application of international accounting standards on presentation of financial statements and disclosures of financial instruments. This Circular applies to all transactions related to financial

instruments with the following basic contents: provisions on terms; guidelines on the presentation of financial instruments in the financial statements and guidance on the interpretation of financial instruments for users.

In order to issue the Vietnamese accounting standard “Financial instruments” approaching IFRS, the basic contents of the standard should include:

- Provisions and guidelines for recognition, measurement, presentation and disclosure of financial statements of financial instruments
- Classification, identification, recognition and disclosure requirements
- Regulations on accounting principles of derivative financial instruments
- Accounting for derivative financial instruments for hedging purposes

2.3. Accounting standards on “agriculture”.

Agriculture is an important production sector of the Vietnamese economy, accounting for a large proportion of the total domestic product value of the economy. However, the accounting regulations of agricultural activities as a specific economic sector of Vietnam have not yet met the requirements of providing information adequately, transparently and reliably according to international practices as well as new requirements of Vietnam’s agricultural economy to suit the information needs of subjects.

In fact, from the perspective of regulations on accounting in agriculture in Vietnam, there are only a few standards such as: VAS 02; VAS 03 and on the basis of the historical cost principle but not having access to international practices, therefore, it is necessary to research and promulgate accounting standards on agriculture approaching to IAS No. 41.

Based on the study of IAS 41 according to Vietnam’s conditions, it is necessary to stipulate a standard in the content of Vietnam accounting standards “Agriculture” with the following basic contents:

- Concept and classification of agricultural production activities, biological assets and agricultural products
- Provisions on conditions for recognition and measurement of biological assets and agricultural products
- Methods and grounds for measurement of fair value of agricultural products at the time of harvest
- Provisions of increasing or decreasing value after initial recognition
- Government subsidies for agriculture
- Presentation of Financial Statements

2.4. Accounting standards for property losses, environmental accounting standards, etc.

The study contents of the promulgation of Vietnam’s accounting standards on property and environment losses, etc. are presented at the following conferences

3. PREPARATION OF HUMAN RESOURCES FOR IFRS APPLICATION IN VIETNAM

With the above two important solutions on changing accounting principles and methods, the finalizing, supplementing, amending and promulgating Vietnamese accounting standards

approaching to international accounting reporting standards requests the participation of various ministries, agencies, organizations, businesses and especially accountants.

One of the reasons that the application of IFRS to Vietnam is still slow in comparison to the requirements of renovating the market economy institution as well as integration goals of the accounting and auditing system according to the strategic objectives of socio-economic development of the country and the strategy of auditing accounting development under the development strategy to 2020 with a vision to 2030 is the lack of qualified human resources to understand and apply IFRS. into Vietnam: lack of human resources for accounting in Vietnam; lack of in-depth experts in international financial reporting standards and preparation skills, therefore, the training of human resources is very urgent in current conditions. The process of training human resources for IFRS application in Vietnam is directly related to the Ministry of Finance, companies, businesses, auditing and accounting training institutions, occupational agencies and associations depending on the roles and functions of each organization to actively develop research plans, promulgate, guide and implement synchronously and completely according to the roadmap of the scheme for application of IFRS in Vietnam.

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GREEN BANKING TOWARD SUSTAINABLE DEVELOPMENT: VIETNAM PERSPECTIVES

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Abstract: *This paper aims at highlighting the concept of green bank and sustainable development as well as the benefits of those to the environment and the economy. Then, it describes the green banking policies and current status of greenbanking in Vietnam. Further attempts have been made to give some recommendations to promote green banking in Vietnam, heading to sustainable development of Vietnam banking system. m*

Keywords: *green banking, sustainable development, environment protection, Vietnam.*

Introduction: In the environmentally-friendly society, “Go Green” has become relevant in each and every aspect of business. There is a wave of change with all business activities to not only focus on profit but also on sustainable development. Green Bank is a new concept that has been introduced in recent years, especially for emerging countries including Vietnam, because the requirements of environmental protection are trade-offs to achieve economic growth and development heading to sustainable development. Therefore, it is generally accepted that the green bank is a model for banking in the future when it balances economic benefits and environmental responsibilities of all stakeholders in the banking activities. The study mainly includes literature review from secondary data. The secondary data sources include reports of the respective banks and other relative information published on the banks and other internet sites, research papers and various articles on green Banking.

1. THE CONCEPT OF SUSTAINABLE DEVELOPMENT AND GREEN BANKING

In 1987, the Brundtland Commission published its report, “Our Common Future,” in an effort to link the issues of economic development and environmental stability. In doing so, this report provided the oft-cited definition of sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (United Nations General Assembly, 1987, p. 43). The aspects of sustainable development include: environmental sustainability, economic sustainability and social sustainability.

Banking industry, like other sector of the economy, is affected by the law that reflects a balanced relationship between growing demand and scarce resources. Sustainable development of the banking system is also considered with the above 3 aspects. From an economic sustainability perspective, the development of the banking system must ensure that all economic activities are established and maintained at the stable level over the time. In terms of social sustainability, the development of the banking system must be inextricably linked with building people’s long-term trust. Finally, from an

environmental sustainability perspective, a banking system is considered to be sustainable when it take steps to improve society and protect the environment.

Originating from the roles of banks in environmental protection, Green Banking is the new form of banking toward to protect environment activities and sustainable development. The banking sector is an intermediary role between economic development and environment protection through their activities. This concept was formally developed in some countries in 2003 with the vision to protect the environment. Then some of leading banks such as Citigroup Inc., The Royal Bank of Scotland, Westpac Banking Corporation were accepted the Equator Principles-a risk management framework which is adopted by financial institutions, especially banking, for determining, assessing and managing environmental and social risk in projects. Now, the concept appeared in many countries' policies and has an impact to both of economy and environment.

Green banking means combining operational improvements, technology and changing client habits in banking business. It means promoting environmental-friendly practices and reducing carbon footprint from banking activities. This comes in many forms such as using online banking instead of branch banking; paying bills online instead of mailing them; opening up CDs and money market accounts at online banks, instead of large multi-branch banks; or finding the local bank in the area that is taking the biggest steps to support local green initiatives (Singhand Singh, 2000). Considering the social responsibility towards environmental protection, the benefits of green banking is expected to be observed at all levels of business process in this globalized world.

2. BENEFITS OF GREEN BANKING

A "Green Bank" widely influences on many areas of life, ensuring sustainable development through creating effective and far-reaching market-based solutions to address a range of environmental problems, including climate change, deforestation, air quality issues and biodiversity loss, while at the same time offering customers' benefit. Some of Green banking benefits include: online banking or electronic banking, green mortgages, remote deposit capture.

- Online banking or electronic banking: Online banking, also known as internet banking, Electronic banking (e-banking) or virtual banking, is an electronic payment system that enables customers of a bank or other financial institution to conduct a range of financial transactions through the financial institution's website.

E-banking services first emerged in the early 1980s; credit card, ATM, and telephone banking service were three major applications at that period (Yang et al., 2009). During the last decade, database, information system and other technologies have been applied into banking services at different levels. After the Internet is available, e-banking services are now conducted through a secure website operated by their local banks (or a virtual bank). E-banking services available include online enquiry, e-payments, e-transfer, etc. at 24/7.

In recent years, mobile banking (m-banking) service is emerging as another new direction of e-banking. M-banking is that customers use wireless devices (cell phone, PDA, laptop, etc.) to access the internet and conduct the online services at any time from any place. M-banking is viewed as a powerful tool to complement regular e-banking with new developed services (Scornavacca & Hoehle, 2007). More recently, there is a new development of e-banking-it is called TV-banking services, which allow customers to use digital TV to access internet and conduct the banking services.

Adopting e-banking services are empirically proven to help banking institutions achieve variety of business objectives including a green banking solution. E-banking eliminates physical and geographic boundaries and time limitation of banking service. Banks greatly reduce the labor cost, extend the service edge and increase the efficiency and effectiveness. As a result, e-banking can help banks to get higher customer acceptance and satisfaction, higher profitability and enhanced competitive advantages. In many parts of the world, electronic banking provides a solution to the problem of bringing financial services to the rural poor. The unbanked or under-banked living in rural areas now has the ability to get into many of the same resources as people living in metropolitan areas. However, one of the most important benefits that electronic banking offers is a green solution that helps environment. A bank can make improvement in the operational area by replacing the daily courier service with scans and electronic delivery. Employees can be sent paychecks and reimbursement checks electronically to save paper.

However, the developing countries have just started to embrace the concept of e-banking in recent years (Osho, 2008). In order to encourage further green banking solutions in developing countries, such as Vietnam, a better understanding of how e-banking adoption can impact the green banking practices is critical. By gaining an in-depth understanding of the factors and conditions that influence a country's ability to fully adopt e-banking services and realize its environmental benefits, strategic implications can be generated for the researchers and practitioners regarding how to promote the growth of green banking in the developing countries.

- **Green Mortgages:** Green mortgages provide retail customers with considerably low interest rates compare market rates for clients who purchase new energy efficient homes or invest in retrofits, energy efficient appliances or green power. Banks can also choose to provide green mortgages by covering the cost of switching a house from conventional to green power, as well as include this customer benefit when marketing the product.

- **Remote Deposit Capture:** Remote deposit capture is a system that allows a customer to scan cheques remotely and transmit the cheques images to a bank for deposit, usually via an encrypted Internet connection. When the bank receives a cheque image from the customer, it posts the deposit to the customer's account and makes the funds available based upon the customer's particular availability schedule. Banks typically offer Remote Deposit Capture to business customers rather than to individuals.

- **Interest rate flexibility and efficiency**

A green bank likely offers the best rate for each client by the benefits of cost savings. Saving accounts, certificates of deposit ... will be able to receive higher interest rates than conventional banks. The loan will be lower than the discount rate by the banks assessing the risk of the project or policy by supporting environmental projects.

- **Support projects ensuring environmental or community benefit**

Green Bank is likely to provide loans for energy efficiency projects and non – profit activities toward the sustainable development in the future. Therefore, a local bank with green features is a great resource for local green initiatives on social, educational, housing, which directly benefit local community. Furthermore, green bank always makes sure the necessary environmental compliance factors before lending a loan/investment, which can create an enabling environment for the green loans.

- **Create interdisciplinary impacts**

Through the project appraisal and credit in an efficient manner, the green banks will affect businesses in many different industries, indirectly impact on the overall situation of the sector. On the other hand, green banks require high-level technology to cater to the online services. The technology used in the bank can be imported, transferred or produced. This will contribute to the development of the information technology industry in the country, increase the demand for high-quality human resources in the software industry, and help to solve the problems of unemployment and employment.

Once the green bank became popular models, the standards in the business community as well as the responsibility of the banks, organizations and businesses will be higher and promote efficiency. Communities will receive more benefits from the ethical business activities.

The application of model green bank also contributed to culture in the use of banking services by customers. When the use of banking services become more convenient, fast, incentives and less expensive (through online banking, green accounts and credit cards...), the consumer will have tend to use bank services more. This will create social awareness in the use of banking services in the future and will create a society where financial services - banks became a familiar part of everyday life.

- **Crossing the border**

Thanks to the uniform standards and technologies, the born a local green bank providing service for customers globally is highly promising. Once the green bank become a popular and effective model, more countries will want to follow this movement. The large multinational banks such as ING Direct and HSBC are facilitating the green bank by changing products, business philosophy.

3. GREEN BANKING POLICIES IN VIETNAM

After nearly 30 years since international integration, Vietnam's economy has been particularly recognized as one of the most successful developing countries in the world. However, Vietnam also has faced the danger of environment including biodiversity loss, deforestation, air pollution or GHG emission. Therefore, the economic achievements are under threat in recent years due to climate change and at risk of being reversed if the worst scenario occurs. The Vietnamese government has responded by approving the National Strategy on Green Growth for the period 2011-2020 and a vision to 2050 on September 25, 2012. To contribute to the implementation of the Strategy Based on the above strategy, the State Bank of Vietnam (SBV) has issued Directive No. 03/2015 on promoting green credit growth and managing social and environmental risks in credit activities. In 2017, the SBV continued to issue Directive No. 01/2017 on the implementation of the banking sector's action plan to implement the national green growth strategy to 2020. In 2018, The State bank of Vietnam issued Decision No. 1604/QD-NHNN approving the scheme for green banking growth in Vietnam.

Accordingly, in the coming time, these green banking missions should be completed by commercial banks:

- (1) Focus on building a strategic framework on green banks

Depending on the business orientation, market segment, target products and customers, and their capabilities and strengths, each credit institution develops a strategic framework and roadmap towards green bank development by 5 levels as follows:

Level 1: Implement complementary activities, fund “green” events and participate in public activities.

Level 2: Separate development of projects and business activities, in which the bank develops separate green products and services, adding to the list of traditional banking products and services.

Level 3: Systematic business activities in which most of banking processes and products comply with green principles, the bank’s organizational structure is designed to support the “green” impact on the senses: operational goals, operational principles, personnel and organizational structure, operational processes.

Level 4: The ecological balance initiative is strategic. Green banking activities are not limited to single operations but are expanded into networks, alliances, community dialogues or the entire ecosystem to achieve the sustainability of the society.

Level 5: The proactive ecological balance initiative, in which green banking activities are similar to level 4, but are purposefully implemented, not just activities that respond to change in addition as level 4.

(2) Develop and establish a comprehensive social and environmental risk management system, including: Internal guidelines on environmental and social risk management in credit operations; Organizational apparatus to manage and assess environmental and social risks; reporting system for environmental and social risk management activities; Bank’s institutional capacity building programs on environmental and social risk management.

(3) Comply with the guidance of the State Bank on environmental and social risks assessment; Credit institutions have to incorporate an environmental risk assessment as part of a bank’s credit risk assessment; include environmental and social risk assessments in guidance of internal audit report and comprehensive reports; develop an environmental and social risk management plan after evaluating and monitoring implemented projects and loans.

(4) Research to establish the unit / division responsible for the implementation of environmental and social risk management and management and supervision of the implementation of green banks and green credit at banks.

(5) Gradually transform internal management processes, modernize infrastructure and information technology in the direction of better support to minimize negative impacts on the environment; provide credit and payment services in environmentally friendly sectors; Actively develop internal guidelines on the green working environment towards implementing measures to save and effectively use water, printing paper, electricity, fuel ... at each branch and transaction office all over the banking system.

(6) Develop specific lending policies for sensitive environmental sectors such as agriculture, leather, renewable energy and textiles; Closely monitor and take measures to reduce lending to activities that harm the environment.

(7) Coordinate with the SBV's functional units in developing, implementing, evaluating and reporting on the implementation of the green bank's credit / green bank action plan and action plan.

(8) Organize training and awareness courses for employees on sustainable development, green growth, green credit, green banks, and understand the importance of environmental and social risk management; organize propaganda and event organization for customers to better understand green banking products and services; introduce products that are environmentally friendly or do not cause an adverse impact on the environment.

(9) Coordinate closely with functional units of the State Bank and the environment sector to proceed to build and formulate a data system on compliance situation, imposing environmental requirements of enterprises, forming a basis for commercial banks in assessing and determining the level of environmental risks when evaluating borrowers, thereby restricting/ reducing loans for environmentally damaging activities.

4. CURRENT STATUS OF GREEN BANK DEVELOPMENT IN VIETNAM

Green banking in Vietnam has received more concern from credit institutions in the last 5 years:

Firstly, developing green products and services.

Currently, banks are developing electronic banking services - one of the activities to green banking activities. According to statistics, there are 65 commercial banks providing internet banking services, 35 banks providing mobile banking services and many intermediaries providing electronic payment services. However, Vietnamese people still have the habit of using cash, statistics also show that up to 90% of card transactions are merely cash withdrawals at ATMs and only the remaining 10% are used for payment via POS.

According to the Vietnam Banking Industry Development Strategy to 2025, the orientation to 2030 has set the goal of promoting the development of non-cash payments, optimizing ATM and POS networks. By the end of 2020, the proportion of cash on total payment means will be below 10%, by the end of 2025 this figure will decrease to 8%.

Therefore, banks need to develop modern banking products and services, creating a basis for improving access to banking services ... In particular, the trend of "paperless banks" will become common. , leading to a gradual decline in the role of bank branches. With Industry 4.0, bank branches are not the most profitable distribution channel in the future.

For example, Sacombank has not only implemented e-bill payment service for quite a long time, recently, Sacombank has also become the first bank in Vietnam to stop completely issuing paper Pin card codes to contribute to environmental protection and at the same time, save costs, time and limit risks.

In line with the banking trend of 4.0, the mCard application released by Sacombank can be considered as a form of card wallet to create new experiences on convenience, modernity and security in payment transactions, helping Users save time and contribute to reduce the traditional paperwork.

Secondly, promoting green credit.

Green credit is understood as the lending by credit institutions to consumer, investment and production needs without risk to the environment, contributing to the protection of the common ecosystem. About 5 years ago, green credit was probably a relatively new concept to the Vietnamese economy. However, as the society develops, people's lives and production activities increasingly affect negatively on the environment, the concept of "green credit" is truly paid attention. Recently, many banks have implemented many preferential policies in granting green credit to contribute to environmental protection, such as: Nam A Bank has signed a contract with the Global Climate Cooperation Fund (GCPF) on the development of green credit program launch in Vietnam.

With a preferential interest rate of about 5 - 6% per year, commercial banks will provide medium and long-term green credits to projects that promote CO₂ emissions reduction and projects saving 20% of energy needs. In 2019, HD Bank has just launched a VND 10,000 billion credit package for businesses operating in the field of high-tech applications and clean agriculture across the country. Preferential loan interest rate with a reduction of 1% / year compared to normal interest rates, mortgaged assets are assets formed from loan capital with loan rates up to 80%, with a maximum loan term of 10 years.

The trend of green credit towards comprehensive and sustainable development could be even stronger in the near future with strong support of regulatory policies. However, the current "green credit lines" are still largely based on projects with international funding because banks are still concerned about credit risks from green investment projects. According to the statistics of the State Bank, currently only 24% of green projects have been built by credit institutions for credit appraisal, which is mainly carried out at some head offices and branches of banks such as BIDV, VietinBank, Vietcombank, Agribank, ACB, Sacombank, SHB, Viet A bank, OCB, HSBC ... (Doan Trang, 2018).

Thirdly, reducing carbon emissions in internal banking operations.

Currently, the increasing size of banks increases carbon emissions into the surrounding environment. With a huge number of branches, banks will significantly increase carbon emissions into the environment by using a lot of energy, air conditioners, printing equipment ... To reduce carbon customers need to change their habits by using non-cash payments and e-banking transactions.

5. SUGGESTIONS FOR GREEN BANKING IN VIETNAM

In order to continue promoting green banking development in Vietnam, in the coming time, some following solutions should be paid attention:

Firstly, the State Bank needs to coordinate with ministries and sectors to provide a specific list of fields and industries that need to be prioritized for commercial banks to refer as a basis for granting credit to projects; At the same time, it is necessary to have sanctions for commercial banks to provide credit for projects that seriously affect the environment and society ...

Secondly, commercial banks need to enhance the evaluation of the impact of projects on the environment and society, such as: Assessing the environmental and social security risk factors of

the project before granting credits; excluding or restricting credit extension for projects that are likely to have a major and serious impact on the social environment.

Thirdly, to develop green credit effectively, banks will have to invest in environmental and social risk management systems, professional training, staff capacity building ... in green credit sector. This will incur significant costs for banks.

Fourthly, commercial banks should convert operations to use modern technology platform, apply technology in managing information data helps to limit human resources and infrastructure investment and encourage customers to use electronic banking which eliminates paper wastage, saves fuel, and reduces printing costs and carbon emissions.

Fifthly, by building green payment channels, customers can go directly to the ATM counters, use deposit cards to deposit and withdraw money at the same time without having to fill out cash withdrawal forms and deposit money.

Sixthly, establishing a green financial fund to gain access to international funding sources, for example, the Green Climate Fund, financial institutions should be encouraged and obliged to establish internal policies on green banks, green credit, risk management policies ...

Seventhly, build a green headquarters. The construction of a green office helps to raise customers' awareness about green banking activities, in addition to enhancing the bank's brand image, increasing competitive advantages.

Eighthly, proactively educate customers of the bank about the benefits of green credit. In addition to businesses, the bank's customers are the bridge that brings green credit to the economy through its green investment activities.

In this globalized economy, Vietnamese banks are facing competition from the banks in the area in which a lot of banks have followed environmental and international standards. Customers and partners are always required sponsorship criteria and social environment from their partners. Thus, in order to seize new business opportunities and expand market share, the banks of Vietnam should act to meet the general trend there. Sustainable development is not simply about "justice" but also to ensure economic benefits such as asset protection, reinforcing brand value and reducing the cost of capital.

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CAPITAL INVESTMENT POLICY TO PROMOTE SUSTAINABLE DEVELOPMENT OF LIFE INSURANCE MARKET IN VIETNAM

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Abstract: *This paper aims to analyze the impact of capital investment policies on the sustainable development of the life insurance market in Vietnam. Based on the study of current legal regulations on capital investment for life insurance enterprises and its limitations; by statistical, synthesis, comparison methods, ... the author has analyzed the current situation of capital investment activities of life insurance enterprises in Vietnam in recent years. Based on the research results, the author has given some discussions and assessments of the impact of the above legal provisions on the sustainable development of the life insurance market in Vietnam; at the same time, proposing complete solutions to ensure the sustainable development of life insurers in Vietnam, including (1) Increasing the scale of investment capital; (2) Limiting the rate of investment in all sources of capital; (3) Ensuring the dispersal of risks; and (4) Be specific and consistent.*

Keywords: *policy for sustainable development of insurance, capital investment in life insurance, sustainable development of life insurance*

1. INTRODUCTION

- ***Necessity of research topic:*** Financial investment has a decisive role and it is always associated with the business activities of life insurance businesses. However, investment activities of life insurance enterprises in Vietnam in recent years still have certain shortcomings including: limited scale of investment capital, the imbalanced structure of the investment portfolio, and inadequate legal documents, etc., hindering financial investment activities in life insurers. In order to realize the strategic objectives, ensure the sustainable development of the life insurance market, it is necessary to promote financial investment activities in life insurance businesses.

- ***Identify the issues of research:*** The article focuses on current legal regulations on capital investment for life insurance enterprises in Vietnam, including: (1) Investment capital; (2) Investment scope; (3) Portfolio; and (4) Rate of investment; analyze the limitations of those regulations and the current status of capital investment activities of life insurers in Vietnam in recent years. Based on the research results, the author gave some discussions and evaluations; at the same time proposing complete solutions.

- ***Objectives of the research:*** Based on the study of the limitations of legal regulations on capital investment for life insurance enterprises and the real investment activities of those enterprises, the author proposes perfect solutions to ensure ensuring the sustainable development of life insurance businesses in Vietnam, including (1) Increasing the scale of investment capital;

- (2) Limiting the rate of investment in all sources of capital; (3) Ensuring the dispersal of risks; and (4) Be specific and consistent.

2. CURRENT INVESTMENT CAPITAL POLICIES FOR LIFE INSURANCE ENTERPRISES IN VIETNAM

In order to effectively manage and use capital, the State pays great attention to adjusting the capital investment activities of life insurance enterprises, especially capital from technical reserve. In our country, according to the Law on Insurance Business, Decree 73/2016/ND-CP (July 1, 2016), life insurers must comply with certain constraints about sources of investment capital, portfolio, investment area, and rate of investment.

- Sources of investment capital

Article 59, Clause 1 of Decree 73/2016/ND-CP (July 1, 2016) specifies the investment capital sources of insurance enterprises which includes equity, idle capital from technical reserve and other legal sources as prescribed by law. The idle capital source from the technical reserve is the total accumulated technical reserves minus the amounts that life insurance enterprises use to pay regular insurance sums in the period. The amount of regular insurance payment used in a period of a life insurer must not be less than 5% of the total accumulated technical reserves and will be deposited in credit institutions operating in Vietnam.

- Portfolio, rate and areas of investment

Decree 73/2016 / ND-CP (July 1, 2016) stipulates that life insurance enterprises may only use their idle capital to invest in Vietnam in the following areas:

- a. Purchase unlimited Government bonds, treasury bills, treasury bonds, national construction bonds, local government bonds and guaranteed government bonds;
- b. Unlimited deposit in credit institutions;
- c. Buy stocks, corporate bonds, fund certificates up to 50% of idle capital from insurance technical reserves;
- d. Trading real estate up to 20% of idle capital from insurance technical reserves;
- e. Contributing capital to other enterprises up to 20% of idle capital from insurance technical reserves.

Life insurance enterprises are allowed to invest abroad according to the law provisions on the excessive equity capital compared to the legal capital or the minimum solvency margin, whichever is greater.

3. LIMITATIONS OF CURRENT POLICY ON THE CAPITAL INVESTMENT FOR LIFE INSURANCE ENTERPRISES IN VIETNAM

In fact, over the past few years, along with the growth in premiums and technical reserves, the investment capital of life insurance businesses has also increased rapidly. The figures below will show that:

Table 1: Scale of investment capital sources of life insurance enterprises in Vietnam from FY2015- FY2018

Unit: VND billion

Targets	FY2015	FY2016	FY2017	FY2018
Insurance premiums	38.271	50.497	66.115	86.176
Total accumulated technical reserves	103.860	128.051	169.123	219.628
Investments	127.809	162.222	208.202	281.400

(Source: Insurance Supervisory Authority- Ministry of Finance)

The above figures show that the total investment capital along with premiums and technical reserves of life insurers tend to increase rapidly. From 2015- 2018, total investment capital increased by more than 120%, with an increase of VND 153.591 billion, from VND 127.809 billion to VND 281.400 billion; insurance premiums increased by over 125% with an increase of VND 47.905 billion; total accumulated technical reserves increased by VND 115.768 billion, corresponding to an increase of more than 111%. This proves that life insurance enterprises increasingly focus on creating large and long-term capital sources for socio-economic development investment. The complete and strict legal regulations have contributed to promoting investment activities and ensuring the financial safety of life insurance businesses.

However, in the above-mentioned legal constraints, there are still shortcomings that need to be amended and completed. These shortcomings are blamed for causes of the limitations in investment activities of life insurance enterprises such as low investment efficiency, incomplete investment portfolio, etc., which threatens the sustainable development of Vietnam's life insurance market.

- It is not necessary to stipulate on maintaining the amount used for regular insurance in the capital from technical reserve (at least 5% of technical reserve).

This regulation, on the one hand limits the scale of investment capital and reduces the investment efficiency of life insurance enterprises; on the other hand, has created anxiety about "liquidity" in fulfilling commitments with customers along with restrictions on the investment environment, investment capacity and restrictions in other regulations. Therefore, despite the rapid increase in investment capital, the investment capital structure of life insurers is still monotonous even though life insurers are allowed to invest in many fields. This is illustrated by the data in the following table:

Table 2: Investment portfolio of life insurance enterprises in Vietnam from FY2015- FY2018

Unit: VND billion

Classification	FY2015		FY2016		FY2017		FY2018	
	<i>Capital amount</i>	<i>Rate (%)</i>	<i>Capital amount</i>	<i>Rate (%)</i>	<i>Capital amount</i>	<i>Rate (%)</i>	<i>Capital amount</i>	<i>Rate (%)</i>
Deposits	23.829	18,64	33.732	20,79	50.910	24,45	98.651	35,06
Gov. bonds, guaranteed bonds, local bonds	89.394	69,94	110.182	67,92	132.867	63,82	145.732	51,79
Secured corporate bonds	955	0,75	1.848	1,14	3.393	1,63	9.742	3,46

Stocks, fund certificate, unsecured corporate bonds	5.462	4,27	7.644	4,71	13.222	6,35	18.771	6,67
Capital contributions	348	0,27	357	0,22	446	0,21	412	0,15
Real estate	-	-	-	-	-	-	45	0,02
Loans	6.596	5,16	6.769	4,17	7.022	3,37	7.373	2,62
Investment trust	160	0,13	931	0,57	6	-	-	-
Others	1.064	0,83	759	0,47	337	0,16	673	0,24
Total	127.809	100	162.222	100	208.202	100	281.400	100

(Source: Insurance Supervisory Authority- Ministry of Finance)

With the above structure, in spite of the fact that life insurance enterprises are allowed to invest in many fields, the portfolio of life insurance enterprises is quite poor and mainly focuses in safe areas such as: deposits in credit institutions and government bonds. From 2015 to 2018, the proportion of investment in these two categories has always accounted for over 87% of total investment capital sources and tends to increase over the years. The above data shows that deposits in credit institutions continuously increased over the years: VND 23.829 billion in 2015, VND 98.651 billion in 2018, an increase rate of 314%. Because the return on investment in this field is often not high, thus low investment efficiency is inevitable. Other investment sectors, despite its vibrancy, only accounted for less than 13% (even in 2016: 11,3%) of the total investment of life insurers. Meanwhile, in developed countries, most of the investment capital of insurance enterprises is invested in stocks and bonds.

Thus, in order for a life insurer to increase the size of capital used to invest and diversify its portfolio to increase investment efficiency, it is not necessary to maintain the amount used for regular pay during the period in the capital source from insurance technical reserves.

- Restrictions on the rate of investment are only stipulated for idle capital from technical reserves, not applied to other investment capital sources yet.

Investment capital of life insurance enterprises is specified in Article 59 of Decree 73/2016 / ND-CP (July 1, 2016). Although the technical reserve is a “debt” of a life insurer to its customers, the financial and solvency capabilities of a life insurer are not only expressed in technical reserve. However, according to Decree 73/2016/ND-CP (July 1, 2016), the limitations on the rate of investment are only regulated for idle capital from technical reserves, there is no regulation for other investment sources. That the loss of other investment capital sources of life insurance enterprises is caused by such regulation affects the solvency to customers, failing to ensure the safe and stable development of life insurance market.

- There have not been specific regulations on restrictions of investment rates.

Restrictions on the rate of investment for technical reserves in each category are presented above. Compared to other regional countries, the above investment restrictions are quite cautious. However, the legal regulations have not limited the maximum amount of investment capital in one place, one investment point or one issue of stocks, corporate bonds, etc,. This means that the principle of risk division is fully obeyed while the principle of risk dispersion is not grasped yet. Therefore, the life insurers find it difficult to preserve and develop capital due to the above non-strict provisions.

- The limitation on the geographical areas of investment in idle capital from technical reserves is no longer suitable in the context of international economic integration

Due to the limited and risky investment environment in Vietnam, the capital market is generally underdeveloped, financial and monetary instruments are not abundant. In case of allowing idle capital investment from technical reserves in Vietnam, it has significant impact on the investment diversification capacity of life insurance businesses. Because of the limited area of investment, the proportion of investment in the form of deposits with banks, credit institutions and government bonds is still large, hence the investment efficiency of businesses life insurance is still not high.

4. SOLUTIONS TO COMPLETE THE CURRENT POLICY ON CAPITAL INVESTMENT FOR LIFE INSURANCE ENTERPRISES IN VIETNAM

- Increase the scale of investment capital of life insurance businesses

To meet the strategic requirements for market development, finding solutions to increase the scale of investment capital has always been set by life insurers. In recent years, investment activities of life insurance businesses have encountered a number of problems with financial policies, especially regulations on maintaining the amount used to pay regular insurance money in the capital from insurance technical reserves. This provision limits the investment capital and reduces the investment efficiency of life insurance enterprises. The technical reserve is mainly included in the business expenses and is a financial reserve to ensure that the life insurer fulfills the responsibilities arising from the insurance contract. However, a life insurer does not necessarily have to reserve a portion of a technical reserve ready to pay customers for these liabilities “has and will” arise. After setting up and if used to invest all the technical reserves, the new “cash flow” will ensure the life insurer fulfills its commitments with its customers thanks to the collection premiums (without having to pay for complaints immediately) and other revenues. Insurance premiums earned by life insurers is not small, for example, in 2018 reached VND 86.176 billion. It is in these collected premiums that the technical reserve needs to be set up, the life insurer may use it immediately to pay for complaints instead of having to reserve a part of the appropriated reserve. In fact, many life insurers have used the investment premiums right away, not waiting for the calculation and setting up of technical reserves. In addition, the figures in Table 2 show that the ratio of life insurance enterprises’ investments in deposits and government bonds is still high, this investment is “liquid”, life insurance enterprises can withdraw money at any time when they need to pay customers.

- Regulating the restrictions on the rate of investment for all capital sources

Article 98 of the Law on Insurance Business not only stipulates that “the capital investment of insurance enterprises must ensure safety” but also requires that the investment of capital from technical reserves must be safe while other capital sources investments do not need to make this request. The data in Table 1 shows that the amount that life insurance enterprises use in investment from other sources of funding (other than technical reserves) are not small. Assuming that in 2018, life insurance enterprises all leave the amount used for regular pay from technical reserves equal to the minimum (5% of professional reserves for life insurance), the total idle capital from technical reserves would be: $95\% \times 219.628 = 208.646,6$ billion VND. Therefore, the investment capital which is not a technical reserves will be at least: $281.400 - 208.646,6 = 72.753,4$ billion VND.

If there are only limitations on the rate of investment capital from technical reserves as stipulated in Decree 73/2016/ND-CP and a lack of restrictions on investment capital other than the technical reserves (such as years 2018 is at least over VND 72.750 billion), then Article 98 of the Business Insurance Law is not fully applied with the investment requirements or life insurance enterprises are also at risk of insolvency. Hence, it is necessary to have regulations to adjust the investment capital other than the technical reserve. In the coming time, the State needs to limit the total investment capital (not only from technical reserves) in each portfolio not to exceed a certain percentage, including equity, funds, etc.,. In that case, the investment requirements under Article 98 of the Insurance Business Law have been fully implemented, the solvency of life insurance enterprises is guaranteed, life insurance market develops safely and stable.

- Restrictions on investment rates should be specific to ensure the implementation of risk dispersion principle

In order to comply with the requirements of “safety”, investment activities of life insurance enterprises must be based on the principle of risk division and dispersion. The division requires not focusing too much amount of capital on one portfolio, while the principle of dispersion does not allow life insurance enterprises to focus too much capital on one place or one investment point. Article 62 of Decree 73/2016/ND-CP (July 1, 2016) only stipulates the limitations on the maximum rate of investment capital for each portfolio without regulations on controlling the investment rate in particular for each type of investment assets such as the rate or level of non-guaranteed stock investment in an enterprise, for each issue, for each type, or the maximum rate or loan for a customer, etc.,. Article 62 of Decree 73/2016/ND-CP (July 1, 2016) also has not stipulated on distinguishing between bonds, listed corporate stocks trading on the stock market and bonds, stocks informally traded business cards in the market. Therefore, if under the above regulations, life insurance enterprises will not be able to fully implement the principle of division, and at the same time, it will not ensure the principle of dispersing risks in investment.

In the coming time, the State needs to stipulate the total investment capital in each place, each object, each issue of shares, and corporate bonds not to exceed a certain limit for each portfolio. For example, the ratio of investment capital to an object in the real estate business portfolio, capital contribution must not exceed 10% of the total permitted investment capital; buy shares, company bonds, lend up to 5%, etc.,. Even the deposit portfolio, although allowing for unrestricted investment, deposited in each bank or financial institution must not exceed a certain percentage. Strictly regulating the proportions of investment capital in accordance with each investment portfolio will ensure capital safety, capital development and financial security of private insurance enterprises, which contributes to promoting a safe and effective life insurance market.

- Issuing specific and consistent guiding documents to encourage and facilitate investment activities of life insurance enterprises

It is urgent for the Ministry of Finance to promulgate specific regulations on the investment portfolio soon. In addition, it is necessary to quickly coordinate with functional agencies such as the State Bank and the Ministry of Planning and Investment in order to formulate, issue and organize the implementation of the guiding regulations on lending activities of non-bank credit

institutions; encourage long-term investment life insurance enterprises; at the same time, simplify administrative procedures in approving and implementing investment projects, especially real estate investment projects, gradually raising and eventually removing restrictions on indirect investment, etc.,.

In short, the biggest obstacle that life insurance businesses encounter in investment activities is inadequate regulatory framework, asynchronous and lacking guiding documents. In order to create favorable conditions for investment activities of life insurance enterprises, the legislature, ministries and functional agencies should first agree on the view that insurance business and capital investment owners and technical reserves are closely connected in the activities of life insurance enterprises; at the same time, it is necessary to study, amend, finalize and promulgate highly feasible legal documents in accordance with current conditions and coordinate in implementation to help life insurance businesses maximize their effectively using idle capital, ensuring the insurance market to develop sustainably.

References:

- Decree 73/2016/ND-CP (July 1, 2016) detailing the implementation of the Law on Insurance Business and the Law Amending and Supplementing a Number of Articles of the Law on Insurance Business*
- Insurance Business Law and guiding documents*
- The annual report of Vietnam insurance Market data for FY 2015- FY 2018 (Ministry of Finance)*

THE DETERMINATION OF OPTIMAL CAPITAL STRUCTURE FOR AN ENTERPRISE IN VIETNAM

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Abstract: *Capital structure refers the indication of the scale and proportion of specific part of business capital. The purpose of determination of optimal capital structure is to reach the firm value maximization. Optimal capital structure relates to specific level of capital structure which results in the maximization of firm value. This study has applied the Cost-of-Capital Approach (COC Approach) with the aim of construction of optimal capital structure for the business Nhon Trach 2 Petroleum Power Joint Stock Company. The purpose of this study is to lay the foundation for the reaching optimal capital structure for listed power joint stock companies in the Vietnam security market.*

Keyword: *Enterprises, Capital structure, Nhon Trach 2 Petroleum Power*

Introduction

Power sector in security market has been gradually the field having essential influence on the social-economic development in Vietnam. Therefore, Vietnam ese government has been implemented many policies for the reaching the development of listed power sector. Due to the support of government, Vietnam listed power sector have been changed significantly and many enterprises have gained enormous profits from the process of operation. However, in order to reach the firm value maximization, capital structure must be considered significantly. Capital structure relates to the indication of scale and particular part of total capital in the business. The purpose of studying capital strucutre is to make the right decision for the determinantion of optimal capital structure which gaining the maximization of firm value.

Cost-of-Capital Approach

The cost-of-capital (COC) Approach is the optimal capital strucutre approach which is performed in the following steps

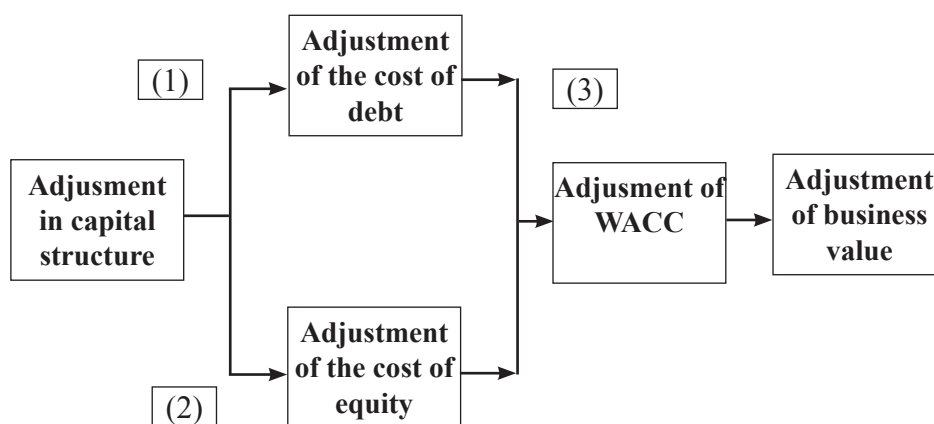
Step 1: Estimation of the cost of debt in each debt ratio: The cost of debt in each debt ratio is constructed based on the credit rating system.

Step 2: Estimation of the cost of equity in each debt ratio: The cost of equity in each debt ratio is constructed by the estimation of beta when fully funded by equity (β_U). Then, this task is followed by the estimation of the beta when debt was used (β_L). The application of CAPM model for the estimation of cost of equity at each debt ratio is performed.

Step 3: Estimation of the average cost of capital used for each debt ratio for the determination of the optimal debt ratio. This formula is used for the estimation of average cost of capital used in each debt ratio. Hence, the optimal debt ratio is the minimal average cost of capital

This approach is demonstrated in the following model

Graph 1: Demonstration of COC Approach



Application of COC method for the determination of optimal capital structure in Nhon Trach 2 Petroleum Joint Stock Company – (NT2)

Step 1: Determination of elements/factors in the model

- **Determination of Risk-free rate (Rf):** Risk-free rate is determined by rate of 10-year Government bond issued by National Treasury in 2019. Risk-free interest rate is 5.38% per year.

- **Determination of Equity Risk Premium (ERP):** Equity Risk Premium is determined by the differential parts between the rate of return of the market portfolio and the risk-free market. ERP is the basic foundation for the decision of the cost of equity and weighted average cost of capital. ERP reflects the degree to which risk is offset by the fact that investments in equity assets have a higher level of risk than investment in non-riskier assets such as government bonds. If the level of risk compensation is not large enough to meet the expectations of investors, investment decisions will not be made. The author collects data on the risk premium from Prof. Aswath Damodaran's calculations. The results show that the ERP of Vietnam in 2019 is 10.27%.

- **Determining the capital structure of Nhon Trach Thermal Power Joint Stock Company at market price:** The structure of capital at market price reflects the level and proportion of each source of capital (debt, equity) according to market value. For the determination of the capital structure at market prices, the market value of debt is determined based on book value and market value of equity determined by the number of shares held. at the end of 2019 multiplied by the closing price of that stock at the end of 2019.

Table 1.1: Capital structure of NT2 by market value in 2019

Capital structure	The volume of stock in circulation	Closing price of NT2 at the end of the year (VND)	Market Value (Trillion dong)	Propotion
Short-term Debt			1.066.152	..
Long-term Debt			2.631.620	..
Total Debt (D)			4.763.924	34,55%
Equity (E)	287.876.000	31,39	9.026.428	65,45%
Total Capital			13.790.352	..
D/E			0,5277	52,77%

(Source: Estimation from financial statements of JSCs)

- **Determination of enterprise income tax rate:** The enterprise income tax rate applicable to T2 is 20%.

- **Determine the beta coefficient of the stock NT2:** The beta coefficient of the stock NT2 collected by the author (source) is 0.47. Beta without financial leverage is determined by the following formula: $\beta_U = \beta_L / \{[1+(1-T_c)]*D/E\} = 0,47 / \{[1+(1-20\%)]*52,77\% \} = 0,33$

* **Step 2: Determine the cost of equity using the different capital structures**

- **Leverage factor leverage (β_L):** determined by the following formula: $\beta_L = \beta_U * [1+(1-T_c)*D/E]$

- **Cost of equity (Re):** determined according to the following formula under CAPM asset pricing model: $Re = R_f + \beta_L * (R_m - R_f) = R_f + \beta_L * ERP$

Table 1.2: Cost of Equity at the level of capital structure

Debt ratio	Total capital	Debt	Equity	D/E	β_L	Re
0%	13.790.352	-	13.790.352	0	0,33	9,51%
10%	13.790.352	1.379.035,2	12.411.316,8	0,11	0,36	9,88%
15%	13.790.352	2.068.552,8	11.721.799,2	0,18	0,38	10,11%
20%	13.790.352	2.758.070,4	11.032.281,6	0,25	0,40	10,35%
25%	13.790.352	3.447.588	10.342.764	0,33	0,42	10,62%
30%	13.790.352	4.137.105,6	9.653.246,4	0,43	0,44	10,95%
34,55%	13.790.352	4.764.566,6	9.025.785,4	0,527	0,47	11,28%
35%	13.790.352	4.826.623,2	8.963.728,8	0,53	0,47	11,29%
40%	13.790.352	5.516.140,8	8.274.211,2	0,66	0,50	11,72%
45%	13.790.352	6.205.658,4	7.584.693,6	0,81	0,36	9,85%
50%	13.790.352	6.895.176	6.895.176	1,00	0,59	12,86%
55%	13.790.352	7.584.693,6	6.205.658,4	1,22	0,65	13,60%
60%	13.790.352	8.274.211,2	5.516.140,8	1,5	0,73	14,54%
65%	13.790.352	8.963.728,8	4.826.623,2	1,85	0,82	15,71%
70%	13.790.352	9.653.246,6	4.137.105,4	2,33	0,95	17,32%
75%	13.790.352	10.342.764	3.447.588	3	1,12	19,57%
80%	13.790.352	11.032.281,6	2.758.070,4	4	1,39	22,92%
85%	13.790.352	11.721.799,2	2.068.552,8	5,66	1,82	28,49%

90%	13.790.352	12.411.316,8	1.379.035,2	9	2,71	39,69%
95%	13.790.352	13.100.834,4	689.517,6	19	5,35	73,21%
100%	13.790.352	13.790.352	-	-	-	-

(Source: Estimation from financial statements of JSCs)

* Step 3: Determine the cost of debt at different levels of capital structure

To determine the cost of debt use at different levels of capital structure, the author collected data on rankings to determine the bankruptcy risk premium of Professor Aswath Damodaran. The rating is based on the solvency of non-financial corporations with a market capitalization of more than \$ 5 billion and less than \$ 5 billion. Table 1.3 describes the bankruptcy risk rating of Prof. Aswath Damodaran.

Table 1.3: Bankruptcy Risk Rating Chart of Professor Aswath Damodaran

Market capital > \$5 billion				Market capital < \$5 billion			
If interest coverage ratio is				If interest coverage ratio is			
>	≤ to	Rating is	Spread is	greater than	≤ to	Rating is	Spread is
8.5	100000	AAA	0.40%	12.5	100000	AAA	0.40%
6.5	8.499999	AA	0.70%	9.5	12.499999	AA	0.70%
5.5	6.499999	A+	0.90%	7.5	9.499999	A+	0.90%
4.25	5.499999	A	1.00%	6	7.499999	A	1.00%
3	4.249999	A-	1.20%	4.5	5.999999	A-	1.20%
2.5	2.999999	BBB	1.75%	4	4.499999	BBB	1.75%
2.25	2.499999	BB+	2.75%	3.5	3.999999	BB+	2.75%
2	2.249999	BB	3.25%	3	3.499999	BB	3.25%
1.75	1.999999	B+	4.00%	2.5	2.999999	B+	4.00%
1.5	1.749999	B	5.00%	2	2.499999	B	5.00%
1.25	1.499999	B-	6.00%	1.5	1.999999	B-	6.00%
0.8	1.249999	CCC	7.00%	1.25	1.499999	CCC	7.00%
0.65	0.799999	CC	8.00%	0.8	1.249999	CC	8.00%
0.2	0.649999	C	10.00%	0.5	0.799999	C	10.00%
-100000	0.199999	D	12.00%	-100000	0.499999	D	12.00%

Source: <http://pages.stern.nyu.edu>

The author of this rating system for Nhon Trach Thermal Power Joint Stock Company - NT2 will be suitable for market capitalization of less than US \$ 5 billion. The solvency ratio is measured by taking pre-tax profit and interest divided by the amount of interest payable. Pretax profit and interest of NT2 in 2019 is 853,439 million dong; The average lending rate in Vietnam in 2019 is 6.25%. The cost of using debt at different levels of capital structure is shown in the following table:

Table 1.4: Cost of debt use at different levels of capital structure

Debt ratio	Total capital	Debt	Amount of loan interest	Interst coverage ratio	Credit rating	ERP	Rf	Rd	Rdt
0%	13.790.352	-							
10%	13.790.352	1.379.035,2	86.189,70	9.90	AA	0.70%	5,38%	6,08%	4,86%
15%	13.790.352	2.068.552,8	129.284,55	6.60	AA	1.00%	5,38%	6,38%	5,10%
20%	13.790.352	2.758.070,4	172.379,40	4.95	A-	1.20%	5,38%	6,58%	5,26%
25%	13.790.352	3.447.588	215.474,25	3.96	BB+	2.75%	5,38%	8,13%	6,50%
30%	13.790.352	4.137.105,6	258.569,10	3.30	BB	3.25%	5,38%	8,63%	6,90%
34,55%	13.790.352	4.764.566,6	297.785,41	2.87	B+	4.00%	5,38%	9,38%	7,50%
35%	13.790.352	4.826.623,2	301.663,95	2.83	B+	4.00%	5,38%	9,38%	7,50%

40%	13.790.352	5.516.140,8	344.758,80	2.48	B	5.00%	5,38%	10,38%	8,30%
45%	13.790.352	6.205.658,4	387.853,65	2.20	B	5.00%	5,38%	10,38%	8,30%
50%	13.790.352	6.895.176	430.948,50	1.98	B-	6.00%	5,38%	11,38%	9,10%
55%	13.790.352	7.584.693,6	474.043,35	1.80	B-	6.00%	5,38%	11,38%	9,10%
60%	13.790.352	8.274.211,2	517.138,20	1.65	B-	6.00%	5,38%	11,38%	9,10%
65%	13.790.352	8.963.728,8	560.233,05	1.52	B-	6.00%	5,38%	11,38%	9,10%
70%	13.790.352	9.653.246,6	603.327,90	1.41	CCC	7%	5,38%	12,38%	9,90%
75%	13.790.352	10.342.764	646.422,75	1.32	CCC	7%	5,38%	12,38%	9,90%
80%	13.790.352	11.032.281,6	689.517,60	1.24	CCC	7%	5,38%	12,38%	9,90%
85%	13.790.352	11.721.799,2	732.612,45	1.16	CC	8%	5,38%	13,38%	10,70%
90%	13.790.352	12.411.316,8	775.707,30	1.10	CC	8%	5,38%	13,38%	10,70%
95%	13.790.352	13.100.834,4	818.802,15	1.04	CC	8%	5,38%	13,38%	10,70%
100%	13.790.352	13.790.352	861.897	0.99	CC	8%	-		

(Source: Estimation from financial statements of JSCs)

*Step 4: Determination of optimal capital structure

WACC in particular capital structure was indicated in Table 1.5 in the following demonstration

Table 1.5: Optimal capital structure of NT2 Petroleum Electricity Joint Stock Company

Debt ratio	Equity ratio	Rdt	Re	WACC
0%	100%		9,51%	9,51%
10%	90%	4,86%	9,88%	9,38%
15%	85%	5,10%	10,11%	9,36%
20%	80%	5,26%	10,35%	9,33%
25%	75%	6,50%	10,62%	9,59%
30%	70%	6,90%	10,95%	9,74%
34,55%	65,45%	7,50%	11,28%	9,97%
35%	65%	7,50%	11,29%	9,96%
40%	60%	8,30%	11,72%	10,35%
45%	55%	8,30%	9,85%	9,15%
50%	50%	9,10%	12,86%	10,98%
55%	45%	9,10%	13,60%	11,13%
60%	40%	9,10%	14,54%	11,28%
65%	35%	9,10%	15,71%	11,41%
70%	30%	9,90%	17,32%	12,13%
75%	25%	9,90%	19,57%	12,32%
80%	20%	9,90%	22,92%	12,50%
85%	15%	10,70%	28,49%	13,37%
90%	10%	10,70%	39,69%	13,60%
95%	5%	10,70%	73,21%	13,83%
100%	0%		-	-

(Source: Estimation from financial statements of JSCs)

The target capital structure is the level of capital structure that results in the lowest average cost of capital (WACC). By setting the level of target capital structure for Nhon Trach 2 Petroleum

Electricity Joint Stock Company with the debt ratio ranging from 0% to 100%, the analysis shows that the WACC has fluctuated from 9,15% to 13.83%. The lowest average cost is 9.15%, corresponding to the capital structure ratio of 45% for debt and 55% for equity. Thus, with the current funding structure (34.55% of debt, 65.34% of equity), the WACC of 9.97% is not the level of the target capital structure. Thus, through the formulation of target capital structure for NT2, it has been recommended that T2 be adjusted to 45% of debt and 55% of equity to minimize cost of capital and maximize cost. corporate governance.

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THE FINANCIAL RISKS CONTROL EXPERIENCE OF CORPORATE GROUPS IN THE WORLD AND THE LESSONS FOR VIETNAM

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Abstract: *In Vietnam, there are many corporate groups that are operating ineffectively or have collapsed due to objective and subjective reasons. And risk control mechanism, especially control over potential breakdowns from financial decisions of these corporate groups, is an undeniable cause. But an undeniable cause is the risk control mechanism, especially of potential breakdowns from the financial decisions of these corporate groups over time. It is high time we learn the risk control experience in other countries to ensure that the operations, of enterprises in general and of corporate groups in particular, take place safely and develop sustainably. The article has collected, analyzed and synthesized researches in the world and in Vietnam, outlined financial risks in corporate group and the financial risks control experience in some countries around the world and has then drawn lessons for corporate group in Vietnam.*

Keywords: *corporate groups, financial risk*

1. OVERVIEW OF FINANCIAL RISKS OF CORPORATE GROUP

The term ‘risk’ is commonly used in economic literature and social context nowadays. When it comes to risk, it is often understood as bad, unexpected things that happen randomly and unforeseeable. In the Vietnamese dictionary, ‘risk’ is defined as “something bad that happens”.

Until now, in fact, there has not been a completely unified definition of risk. With different approaches, different schools have come up with different definitions of risk. In general, those definitions could be categorized into two main approach: the traditional and modern approach.

According to the traditional approach, risks are understood as losses or unstable, dangerous conditions that could happen accidentally and unintentionally to a person. The nature of risks is the uncertainty of the damage or loss that would occur. However, not all uncertainties are considered risks. If the uncertainty has never occurred and the probabilities could not be estimated, it is considered unpredictability, not risks. For enterprises, it is a loss of assets or a decrease in actual profit compared to planned or an unintended uncertainty occurring in the production and business process of the enterprise that has an adverse effect on the existence and development of the enterprise.

According to the modern approach, risks are understood as unpredictability or measurable uncertainty, which is the difference between the actual and expected value. The larger this difference, the greater the risk and vice versa.

An enterprise’s financial risks are the type of risk that arises from the choice of debt policies in its operation. The manifestation of financial risks is when the enterprise falls into insolvency,

resulting in bankruptcy. This type of risk is caused by excessive debt due to poor cash flow management, resulting in an imbalance between cash in and cash out.

Financial risk control is a critical mission of general managers and chief financial officers, in which the focus is on insolvency risk management because an enterprise's state of insolvency that leads to defaults, largely stemmed from the management's subjectivity. To gain sufficient control of financial risks, one must know how to evaluate and measure those risks, and then it comes to the choice of methods to prevent and overcome the risk if it occurs.

The goal of financial risk management is to control risks at appropriate costs to ensure business performance in the context of each situation. With this goal, the risk manager shall consistently measure the likelihood and acceptable prevention costs to ensure the maximum profit.

Due to the transition to a new model with those characteristics, Vietnamese Corporate group have not managed to be as mature as foreign Corporate group, but they still have to demonstrate the nature of Corporate group, in which the link between the parent and subsidiary company must be a capital investment relationship, according to which their methods of management, especially of financial management, must also change. In particular, Vietnamese Corporate group need to manage their subsidiaries through financial risks control. On the view that financial risk control is the ability and activity of an entity (controlling entity) to facilitate and orient the decision-making on financial and operating policies of the other entity in order to help the controlling entity achieve its objectives, in corporate groups, financial control is the activity that the parent company uses to facilitate and orient the decision-making on financial and operating policies of subsidiaries to achieve the development goal of the Group. Thus, controlling financial risks is a critical tool for the Parent company to manage its subsidiaries in the relationship of capital mobilization. Only by doing this will the Group have a healthy living body, ensure the financial security, and avoid chain breakdowns that affect the whole system.

The difference in financial risks between an independent enterprise and a Group is not huge, as basically, the enterprises within a Group are still a particular financially independent entity, and the Group is only a link in terms of capital, technology, and market as defined above. If it is only reciprocity in the system, the Group would still be able to overcome difficulties, but it could also create chain reactions that make the Group collapse even faster.

Therefore, in identifying and controlling the financial risks of a Group, there is a need for the consolidation of mutual effects on the basis of financial relationships among entities within.

2. RESEARCH METHODOLOGY

To conduct the study, the author performed the synthesis and comparative analysis methods.

The author collects and synthesizes researches in the world and in Vietnam, which have been published up to the present time, that are related to risk control. The author summarizes, analyzes, compares the research subjects, scopes and results to extract the satisfactory and unsatisfactory points, thereby defining this study's research objectives."

3. THE FINANCIAL RISKS MANAGEMENT EXPERIENCE OF CORPORATE GROUPS IN THE WORLD

a. The internal financial risks management experience of corporate groups in France

The corporate groups in France have a long history of existence and development under the impact of institutions, business environments and fluctuations of economy, culture and society. The

French government advocates the establishment of corporate groups on the basis of restructuring one or several large-scale SOEs. In fact, there is a transformation of ownership of state-owned Corporate group and private ownership through the nationalization of the parent company in private Corporate group or the privatization of the parent company in state-owned corporate groups.

Corporate group have various scales, most of which only have 3-5 subsidiaries and employ a workforce of about 500 people. In France, the number of corporations of this size accounts for about 90% of the total number of Corporate group and those are called Microgroupes. In addition, a number of corporations have a very large scale and a very wide scope of activities, for example, the Airbus Airline operates in the aerospace industry in France, Germany, Spain ... Airbus is a global leader in aerospace, space and related services.

Some Corporate group in France not only play an important role in the economies of these countries but also hold an important position in the world economy. With the achieved scale and economic efficiency, in addition to the good control of the Government, the control of financial risks from the parent company to its subsidiaries is also organized effectively, specifically as follows:

Regarding the organization and operational management mechanism

To control the financial risks of Corporate group, because Corporate group have no legal status, the management of the whole system is done through the operating parent company. In business, the parent company will act as the focal point and usually undertake the following basic missions:

Representing the corporation to carry out production and business activities with a third party as agreed and must ensure that it is not contrary to the provisions of law.

Using the rights and obligations of controlling shareholders to make decisions on important issues in the direction of subsidiaries' operation and connect them to achieve the common goals of the whole group.

To control of financial risks of subsidiaries, the parent company establishes assisting committees to support the control activities such as the Finance Board, the Human Resources Board ... in which the Audit Committee, the Supervisory Board have the mission to examine and controlling capital mobilization, capital use and distribution of resources within Corporate group to control the implementation of accounting procedures and of the Board's decisions on accounting, auditing and finance.

The law in France stipulates that the parent company and its subsidiaries are independent legal entities, so the parent company has no right to directly require the subsidiaries to follow their "orders". Requests of the parent company must be made through an authorized representative and approved by the General Meeting of Shareholders.

Regarding public disclosure and transparency of financial information

To control financial risk in subsidiaries, one of the tools that provide information is financial reporting. The financial statements are submitted by subsidiaries to their parent company. Thereafter, the parent company will develop a consolidated report. For each set of financial statements, the information will be exploited by many different stakeholders such as shareholders, managers, employees, customers, banks ... Therefore, the French Corporate group are regulated to apply the

consolidation regime of accounting and finance since the 1960s. The European Community in general decided to apply consolidation of accounting and finance within the Community in 1983.

According to the regulation, the consolidated report prepared by the parent company shall contain all information on capital, assets, finance, investment, and business results of the entire corporation (including the parent company, subsidiaries and overseas companies) after deducting internal transactions, and those must be in the same unit and unified in accounting principles. At the same time, the authenticity of this information is strictly regulated and is audited by auditors.

Regarding the inspection and auditing mechanism

The parent company usually inspects, audits periodically or irregularly with its subsidiaries to control risks, detect and correct fraudulent activities of subsidiaries. In case violations are detected and proofs are present, these subsidiaries will be subject to sanctions in accordance with the law.

In addition to controlling financial risks within the group, the French Government also developed and issued mechanisms and policies, created a comprehensive legal framework that is consistent with the development of Corporate group. This support is to initially help corporations have a good development mechanism and then to orient the parent company to control its subsidiaries according to market principles, and to limit operating corruption.

b. The internal financial risks management experience of Corporate group in Japan

The organizational structure in corporations, parent companies and subsidiaries in Japan has a close connection by exchanging information, business strategies and plans through the Board of Directors. Banks play a central role in financial transactions, capital investments, and intervention in the organizational structure and operations of subsidiaries through the proportion of capital contributions. Control within Groups primarily focuses on risk control, information technology, markets, and business planning. The Group's Board of Directors still has to approve, review and orient the entire group with the goal of developing the whole group. All decisions and control activities, which orient and guide each subsidiary, are made at the parent company of the group, depending on the level of control of the parent company in the subsidiary. Japanese Corporate group are often departmentalized by functions of production, sales, and services into subsidiaries. It then creates flexible companies around their parent company to achieve high efficiency to respond to environmental changes. Capital mobilization of the corporation is not mainly based on the stock market but from banks, so the role of banks is very important in providing financial information to the corporation, and they are seen as the core. Human resources policy at Corporate group, which applies the "working-for-life mode" management method, has created a force for everyone in the group to strive hard for the survival and development of the corporation.

c. The internal financial risks management experience of Corporate group in Korea

Korea is a country with the fastest-growing economy in the world, with its being positioned as the center of Asia in the 21st century. The year 1990 marked a big turning point when Korea officially opened and liberalized its market. Throughout the path of development, Korea has always been aware of creating conditions for businesses to develop, especially for businesses that use state capital, through enhancing transparency, applying international standards, applying business incentive policies and building effective capital use control systems within corporations.

To control financial risk at Corporate group, the group's organizational structure includes the Board of Directors and the General Assembly. The Board of Directors often include people outside of the corporation, especially for large corporations with large-scale operations. The Chairman of the group is equally responsible as a member of the Board of Directors. A corporation has no legal status but is a group of businesses with legal status.

The subsidiaries in the group have legal status, operate under business law and are equal under the law. A company must have at least three board members with a mission to work hard and faithfully for the benefit of its shareholders and employees, tasked with maintaining an appropriate system of controls and operating the control system methodically. Full-time members of the Supervisory Board at the subsidiaries are responsible for controlling the company's investment activities and capital use.

The parent company controls its subsidiaries by issuing a detailed guidance document, in which, following the process, a request to report the indicators and reporting methods is sent from the previous year's December to the controlled units, which are the subsidiaries. Controlled units will prepare the required documents and submit the report to the parent company in March of the following year. After receiving the report, the parent company will conduct an independent assessment from March to June. Financial risk control will be based on financial management performance, frequency of capital use and financial indicators obtained. This new way of control is highly appreciated because it guides well the reporting method for the controlled units. The results assessed by the parent company will be gathered and submitted to higher levels of management.

The basis for the parent company to draw conclusions about financial risk control in the subsidiary is based on the defined criteria. Since 2006, these criteria have been changed to adapt to the actual situation and to create a driving force that encourages the development of corporations. According to these criteria, the rating levels are rated from good to bad corresponding to grades S, A, B, C, D, E and the criteria are always associated with clear rewards and penalties. In addition, the results of control are tied to the responsibilities and interests of the managers at the subsidiaries. For example, in Korea, if the business is well ranked overall, the managers can be rewarded with up to 500% of the salary and vice versa, if they fail to fulfill the assigned responsibilities, their bonuses will be deducted or they are even dismissed from their positions. This change has immediately increased labor productivity and capital efficiency, improving Corporate group's operational efficiency.

Controlling financial risks from parent company to subsidiaries in Corporate group in Korea has the following highlights:

- There is close coordination between the controlling and controlled entities in the group.
- The financial risk control mechanism is built to include qualitative and quantitative criteria on the basis of comparing the achieved results with the set targets. All criteria are clearly stated pertaining to the rights and responsibilities of the Supervisory Board and the direct capital manager at the subsidiaries.
- The evaluation of the effectiveness of financial risk control is based on the impact of management activities on business performance instead of focusing only on financial results achieved.

– All information on the financial risks control process and the achieved results are transparent to help minimize risks and overcome the consequences that have occurred.

d. The internal financial risks management experience of Corporate group in China

Chinese corporations are a type of association of many independent legal entities, with the organizational structure consisting of a central company and various subsidiaries. The relationship between these companies is based on capital contribution, contracts, technical technology ...

The purpose of the formation of Corporate group in China is to take advantage of the economy of scale and consolidate the advantages of specialization with diversified business activities. Corporations are characterized by having large scale; most organizations follow the model of including a parent company, subsidiaries, and Corporate group are not the only legal entities registered under the law.

The Chinese government is also very interested in the formation and development of Corporate group. The government has issued a series of policies to encourage EG formation, which are preferential policies in capital mobilization, import and export licensing, investment permission, new product development, tax incentives, and the establishment of financial companies. China's Corporate group are under the oversight of the State Asset Management and Supervision Commission (SA SAC), a powerful body of the State Council.

The Corporate group in China play an important role in economic development, ensuring national security and defense. Chinese Corporate group are the pillars of the economy in China. However, the sizes of Chinese Corporate group are small compared to the world and over a period of time of operation, the Corporate group formed by administrative orders have not brought desired results. These corporations have revealed weaknesses in the process of asset distribution, investment implementation ...

e. The internal financial risks management experience of Corporate group in the U.S

To be able to forecast and control financial risks, the US' Corporate group often apply various methods. There are many methods to forecast the risk of default of Corporate group that have been developed and published. However, if only separate financial analysis indicators are used for grading, it is impossible to accurately predict the trend of the likely occurrence of financial difficulties of the business, because it depends on each management subject's own perception. Several variables have been used in risk control models to enhance default forecasting. One method that has been thoroughly tested and widely accepted in the US today is Altman's Z-score statistical function. This index helps Corporate group predict the risk of bankruptcy in the near future so that they know their level of risk. The bankruptcy risk coefficient, or Z score, is set by the US economist Edward I. Altman, a lecturer at New York University. This coefficient applies only to Corporate group but not to financial institutions such as banks or financial investment companies. In the US, the Z score has relatively accurately predicted the bankruptcy situation as well as the risk level of businesses in the near future. About 95% of bankruptcies are forecasted by Z score one year before the shutdown date, but this drops to only 74% for two-year projections.

The formula bankruptcy risk coefficient Zscore is calculated as follows:

** For public companies in the manufacturing industry:*

$$Z = 1.2.X1 + 1.4.X2 + 3.3.X3 + 0.64.X4 + 0.999.X5$$

In which:

X1 = Net working capital (= Current assets - Current liabilities) / Total assets

X2 = Retained earnings / Total assets

X3 = EBIT / Total assets

X4 = Market capitalization / Total debts

X5 = Asset turnover = Revenue / Total assets

After calculating the coefficient Z score, the enterprise will compare the Z coefficient with the standard levels to know whether the business is risky or not, specifically as follows:

- If $Z > 2.99$, the business is located in a safe area, not in danger of bankruptcy;
- If $1.8 < Z < 2.99$ the business is in a warning area, might be in danger of bankruptcy;
- If $Z < 1.8$, the business is located in a dangerous area with a high risk of bankruptcy.

From an initial Z index, Professor Edward I. Altman has developed the Z ‘and Z’’, which can be applied to each type and industry of the business, as follows:

** For unlisted companies in the manufacturing industry:*

$$Z' = 0.717.X1 + 0.847.X2 + 3.107.X3 + 0.42.X4 + 0.998.X5$$

In which:

X4 = Book value of Shareholders’ equity / Book value of total debts

Since the company is not listed, the variable X4 must use book value of Shareholders’ equity.

- If $Z' > 2.9$, the enterprise is located in a safe area, not in danger of bankruptcy;
- If $1.23 < Z' < 2.9$, the business is in a warning area, might be in danger of bankruptcy;
- If $Z' < 1.23$, the business is located in a dangerous area with a high risk of bankruptcy.

** For other businesses*

The Z’’ index is built for other types of businesses, and is applicable to most industries. Due to the large variation of the X5 indicator between industries, the X5 indicator was excluded. The formula for calculating the Z’’ index is adjusted as follows:

$$Z'' = 6.56.X1 + 3.26.X2 + 6.72.X3 + 1.05.X4$$

- If $Z'' > 2.6$, the business is located in a safe area, not in danger of bankruptcy;
- If $1.2 < Z'' < 2.6$, the business is in a warning area, might be in danger of bankruptcy;
- If $Z'' < 1.1$, the business is located in a dangerous area with a high risk of bankruptcy.

In which: X4 = Book value of Shareholders’ equity / Book value of total debts

In addition to helping businesses control risks, Professor Esward I. Altman, the author of this index, has discovered the adjusted Z" coefficient. This index is equal to the index Z" + 3.25 (bankruptcy warning areas are then increased by 3.25). He has researched over 700 companies and found the similarity between this adjusted Z" index and the S&P credit rating. The adjusted formula Z" is determined as follows:

$$Z'' = 3,25 + 6,56X1 + 3,26X2 + 6,72X3 + 1,05X4$$

The similarity between the adjusted Z" index and the S&P ranking of companies, is clearly written by Professor Altman in the article *"The use of Credit scoring Models and The Importance of a Credit Culture"* and is presented in the following table. In column 3, Moody's credit rating is added according to the similarity with S&P's credit rating.

The safety of the business	Adjusted Z"	S&P Credit Rating	Moody's Credit Rating
The business is located in a safe area, not in danger of bankruptcy	> 8,15	AAA	Aaa
	7,60 – 8,15	AA+	Aa1
	7,30 – 7,60	AA	Aa2
	7,00 – 7,30	AA-	Aa3
	6,85 – 7,00	A+	A1
	6,65 – 6,85	A	A2
	6,40 – 6,65	A-	A3
	6,25 – 6,40	BBB+	Baa1
	5,85 – 6,25	BBB	Baa2
	5,65 – 5,85	BBB-	Baa3
The business is in a warning area, might be in danger of bankruptcy	5,25 – 5,65	BB+	Ba1
	4,95 – 5,25	BB	Ba2
	4,75 – 4,95	BB-	Ba3
	4,50 – 4,75	B+	B1
	4,15 – 4,50	B	B2
	3,75 – 4,15	B-	B3
The business is located in a dangerous area with a high risk of bankruptcy	3,20 – 3,75	CCC+	Caa1
	2,50 – 3,20	CCC	Caa2
	1,75 – 2,50	CCC-	Caa3
	0 – 1,75	D	

The similarity between the adjusted Z" index and the S&P's credit rating is quite high, but by no means absolute. In his article, Professor Altman also presented a standard deviation within the allowable range of the two indicators.

Moody's and S&P's experience in building risk-warning intervals

Moody's Company - the world's first credit rating organization was founded in 1914 by Mr. John Moody. In 1941, the Standard and Poors organization was formed on the merger of Poor's Publishing and Standard Statistics. Nowadays, there are a number of internationally-recognized rating agencies in the world, as well as a few accredited bodies in their own country. However, Moody's, Standard and Poor's and Pitch Ratings are the 3 most recognized and prestigious organizations in the world.

Moody's and S&P evaluate the credit ratings of businesses based on many criteria. Depending on each organization, the method of rating the credit rating is slightly different, but they are basically quite similar. Moody's and S&P will evaluate qualitative indicators including the country's risk level, the business environment, the industry in which the business is operating; quality and skills of management, marketing strategy, management policy of the business, and qualitative indicators include key indicators that reflect the financial position of the business.

Table 1 shows the relationship between business risk and financial risk of rated companies. Table 2 shows the ratios that reflect the financial risks of companies operating in the industrial sector.

Table 1: Financial risks and business risks

Financial risks	Low	Modest	Average	High	Very high
Operational risks					
Low	AAA	AA	A	BBB	BB
Modest	AA	AA	A-	BBB-	BB-
Average	A	BBB+	BBB	BB+	B+
High	BBB	BBB-	BB+	BB-	B
Too high	BBB	B+	B+	B	B-

Table 2: Indices reflecting financial risks

	Operating cash flows / Total debts (%)	Total debts / Capital (%)
Low	>60	<25
Modest	45-60	25-35
Average	30-45	35-45
High	15-30	45-55
Very high	<15	>55

Combining the above factors, the credit rating agency will rank the corporate credit according to predetermined various levels and denoted by the first letters; according to the following table:

Credit Rating according to S&P	Credit Rating according to Moody's	Explanation
AAA	Aaa	Highest quality, stable, lowest risk
AA	Aa	High quality, low risk. Risk is only one level higher than AAA grade.
A	A	Decent quality, but can be affected by the economic situation.
BBB	Baa	Average quality and safe for the time being, but there are some hidden risk factors.
BB	Ba	Low average quality, may have difficulty in repayment, could be impacted by changing economic conditions.
B	B	Low quality, high risk, and risk of failure to pay on time.
CCC	Caa	High risk, only able to repay debts if the economic situation is positive.
CC	Ca	Very high risk, very close to bankruptcy.
C	C	Very high risk, and is hardly able to pay debt obligations
D		Lowest rating, has gone bankrupt or almost bankrupt
NR	NR	No rating

For the Moody's index, in addition to the above basic ratings, the 1, 2, and 3 coefficients can also be used to subdivide a base rating into 3 categories, of which 1 is the highest in that rating, 2 is the average, and 3 is the lowest, for example: Aa1, Aa2, Aa3.

For the S&P index, + or - is used to break down the rating, where + is the highest in the rank, unsigned is the mean, - is the lowest; For example: AA +, AA, AA-.

4. LESSONS LEARNED FOR THE CONSTRUCTION OF FINANCIAL RISK CONTROL INDICATORS WITH CORPORATE GROUP IN VIETNAM

Through research on the process of controlling financial risks of leading Corporate group in the world as well as preliminary assessment on risk management of enterprises in general, financial risk management of Corporate group in Vietnam in particular, some lessons are drawn for risk management of Corporate group in Vietnam:

Firstly, awareness about financial risks should be raised for the entire group

With the nature of randomness and surprise, the perception of risk in the enterprise is the decisive factor for the success or failure of risk management. Therefore, the risk management department in the enterprise should have measures to convey the content of risk management such as processes, objectives, and decentralize responsibilities to all members of the enterprise. Only when every department actively identifies the factors affecting the operation of the division, influences the interaction between other parts of the business and assesses the consequences of those effects on a regular basis and follows a unified process, then the risk management system of the business is going well.

Secondly, it is necessary to establish a department in charge of risk management.

The experience of successful corporations in the US shows that in the context of sudden and rapid fluctuations of events in the economy, especially those that cause financial risks to the business, it is necessary to establish a specialized unit for quick responses. The risk management department is set up with the goal of conveying the risk management message to all other functional departments of the business, closely coordinating with other functional departments to identify, measure and handle risks effectively.

The interaction of the risk management department with functional ones, on the one hand, helps to identify risks, and on the other hand, helps departments better grasp the operating processes of the business, thereby creates the basis for improving operational efficiency and effectiveness of that unit. Therefore, according to the author, it is necessary for businesses to create a specialized division in charge of risk management.

Thirdly, in controlling capital from the parent company to subsidiaries, a set of criteria is to be set up to evaluate control performance to ensure comprehensiveness and systematization.

It is possible to learn from Korean experiences in building a set of criteria and how to classify companies. This set of evaluation criteria must be associated with a clear reward and punishment mechanism for those that directly manage and control members. The inclusion of personnel assessment criteria in the Supervisory Board will increase accountability and improve the efficiency of the control process.

Fourthly, it is necessary to apply advanced models to help identify, measure and evaluate financial risks within the Corporate group

One of the fundamental differences among large corporations in the world and Corporate group in Vietnam is the powerful application of scientific and technological advances in governance. The

use of LEAN - BIM - Prefabrication / Modularization system software helps these businesses to minimize costs, optimize resource allocation and the emphasis is to quantify the impact on business performance when changing the assumptions (changes in costs, construction time, the capacity of constructional machines, ...).

It is necessary for research models that quantify the impact of financial risks on business performance to use advanced models such as VAR, Z - score model, ... as the foundation for effective resource allocation.

Fifthly, a set of performance evaluation criteria should be set up

In controlling financial risks from the parent company to subsidiaries, setting up a set of criteria to evaluate control performance ensures comprehensiveness and systematization. It is possible to learn from Korean experiences in building a set of criteria and the way to classify companies. This set of evaluation criteria must be associated with a clear reward and punishment mechanism for those directly managing and controlling members. The inclusion of personnel assessment criteria in the Supervisory Board will increase accountability and improve the efficiency of the control process.

Sixthly, the hiring of consultants to complete the risk management process should be promoted

In fact, many enterprises in Vietnam in general and Corporate group in particular, risk management still has many limitations and methodical and lack of professionalism. Many businesses have not yet built up a risk management process and have not correctly understood and evaluated the operation of the risk management process and its implications for their business performance and solutions. Therefore, getting advice from experts, professional consulting firms is necessary.

Seventhly, it is necessary to select a financial risk management model suitable for the size and development of the corporation.

At different scales, the complexity of financial operations and the abundance of financial risks encountered differ. In addition, at each development stage, the business objectives are different, leading to the choice of different financial risk management methods.

In summary, the study of the financial risk control process, the financial risk management of leading enterprises in the world gives many suggestions in risk management for enterprises in Vietnam. However, the application of these methods to corporate governance processes in Vietnam requires a closer study, especially in EG models, the variables used need to be adjusted to suit the conditions of businesses in Vietnam.

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CONSTRUCTING AND COMPLETING THE LEGAL SYSTEM FOR THE DEVELOPMENT OF E-COMMERCE IN VIETNAM IN THE GLOBALIZATION CONTEXT

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Abstract: *Doing research to find solutions to construct and complete the legal system for e-commerce development in the context of globalization in Vietnam is an objective and necessary requirement. The reason is that e-commerce in the digital economy platform has many new business models and different types of participant with increasingly complicated and variety operation way. Besides, the nature of e-commerce is borderless. Therefore, in order to contribute to sustainable economic and business development in the context of globalization, it is required to have an appropriate legal framework for e-commerce in Vietnam. However, there are still many shortcomings of the recent legal system regulating e-commerce. This study has shown these problems and suggested some solutions to improve the legal system for e-commerce in new context.*

Key words: *e-commerce, globalization, law on e-commerce*

1. INTRODUCTION

Commercial activities are activities for profit purposes, including goods sale and purchase, services provision, investment, trade promotion and other profitable activities (Commercial law, 2015). Electronic commerce is the purchase and sale of products or services on electronic systems such as the internet and computer networks. E-commerce is based on technologies such as electronic money transfer, supply chain management, internet marketing, online transaction, electronic data, inventory management systems and automated data collection systems. E-commerce activities conduct a part or full process of commercial activities by using electronic means connected to the internet, mobile telecommunications network or other open networks.

In the context of globalization, e-commerce is increasingly necessary, especially for Vietnam, a country is integrating more deeply, broadly and comprehensively. Although Vietnam does not have much experience in e-commerce, there are many legal provisions on this issue that are complied with bilateral and multilateral international treaties on e-commerce market. For example, as a member of WTO, Vietnam has strictly complied with WTO commitments related to e-commerce. Besides, Vietnam has actively participated in ASEAN's commitment to e-commerce (e-ASEAN) on the basis of the Framework Agreement on e-commerce. Vietnam is also a member of the Protocol on integration in the e-commerce sector (on November 29, 2004) in Vientiane (Laos). Moreover, Vietnam has participated in the action program for e-commerce development of APEC, and Vietnam is already a member of other bilateral and multilateral FTAs (such as CPTPP, EVFTA...) including e-commerce related content.

E-commerce contributes significantly to the promotion of international trade liberalization and sustainable economic and business development under the conditions of globalization. From the special features of e-commerce, it is required that the law governing e-commerce must be different from the law governing traditional commerce. Unlike traditional commerce, e-commerce is characterized by technology and internet platform. It has many new business models with different types of participants and complicated ways of operating. Therefore, an appropriate regulatory framework is required. The specific characteristics of e-commerce have shown that the current legal system on trade in Vietnam has not met the development requirements. On the other hand, pressure from international trade commitments has forced Vietnam to construct and improve the legal system governing e-commerce activities.

2. The current situation of law system on e-commerce in Vietnam

The current legal documents have many provisions, creating a legal basis for e-commerce. These provisions manage some problems related to e-commerce such as entering into and performing e-commerce contracts, data message, electronic signature, electronic signature authentication; regulations on security and safety of e-commerce transactions; settlement of disputes and handling of violations in e-commerce transactions, custom procedures in e-commerce; tax declaration and tax administration for e-commerce; protecting intellectual property rights in e-commerce... These regulations are not only tools to regulate the behaviour of subjects participating in e-commerce activities but also a legal basis to protect legitimate rights and interests of subjects, promoting a sustainable economic development.

The legal basis, along with the rapid development of the internet, 3G, 4G and mobile devices... has made e-commerce develop significantly in Vietnam, especially in recent years and during the Covid 19 epidemic. However, in fact, e-commerce activities in Vietnam currently contain many risks such as lack of consumer protection mechanism, unresolved disputes and regulation violations, tax evasion and contraband in e-commerce... These limitations are caused by many reasons, including the inadequacy of legal system that governs e-commerce. In details:

Firstly, the legal system governing e-commerce is stipulated in many different legal documents that are issued by different state authorities, including Civil Code, Commercial Law, Enterprise Law, Investment Law, Electronic transaction Law, Information technology Law, Customs Law, Accounting Law, Tax administration Law, Law on foreign trade management, Law on consumer protection...; Decree 52/2013/NĐ-CP on e-commerce, Decree 08/2018/NĐ-CP amending some Decrees related to initial conditions business investment under the state management scope of the Ministry of Industry and Trade (Chapter V amending Decree 52/2013/NĐ-CP), Decree 119/2018/NĐ-CP prescribing electronic invoices for sale of goods and provision of services, Decree 130/2018/NĐ-CP on guidelines for the law on electronic transactions of digital signatures and digital signature authentication service; Circular 59/2015/TT-BCT prescribing the management of e-commerce activities via applications on mobile equipment, Circular 21/2018/TT-BCT amending a number of articles of circular 47/2014/TT-BCT on management of e-commerce websites and Circular 59/2015/TT-BCT on management of e-commerce activities via applications on mobile equipment. The legal documents directly governing e-commerce are only decrees and circulars, the by-law documents, so the legality is not high. In addition, the regulations on e-commerce

are stipulated in different legal documents that lack consistency, causing difficulties in the implementation process.

Secondly, there are many e-commerce relations that have not been regulated by law, or have not been adjusted specifically or inadequately. In details:

- Lack of regulations to make information transparent on e-commerce websites, and regulations on responsibilities of owners of e-commerce trading floors, sellers, services providers... For example, there is regulation that for goods and services introduced on the sales e-commerce website, traders, organizations and individuals must provide information to customer to identify the characteristics of goods and services accurately in order to avoid misunderstanding when making a contract. However, the law does not specify clearly. So it is difficult to implement and protect interests of buyers.

- There is a lack of specific regulations on e-commerce activities on social networks besides the e-commerce exchanges and the legal responsibility of this network administrator.

- Regulations on the presence of traders and foreigners conducting commercial activities in the Vietnam territory still have irrationalities. Many individuals and organizations are advertising and selling goods and services on e-commerce websites or applications or social networks with features like e-commerce trading floors but the manager is not present in Vietnam. It leads to difficulties in management, solving problems when there are disputes, violations and causing tax loss.

In fact, it is common that suppliers give incorrect information about goods or services such as fake trademarks, unknown origin and quality goods. It affects the interest of consumers. In addition, personal information of clients could be disclosed, bought or sold when they participated in e-commerce activities, making it risk to make online or electronic payments.

- Current legal system is still general and difficult to apply. For example, according to the Commercial Law, in commercial activities, data messages that meet the prescribed technical conditions and standards have the same legal value as documents. Moreover, the display or introduction of goods and services on the internet is also considered as a form of display or introduction goods or services. However, what the data message that meets the technical conditions and standards could be difficult to identify... Furthermore, there is not specific regulation on signing online contracts to buy goods or services on e-commerce websites that established by traders, organizations or individuals. It results in the difficulties in protecting consumers.

- There is lack of sanctions or strictly sanctions applied when violating the law on e-commerce. Due to the lack of regulations governing e-commerce, the participant and the state agencies lack a legal basis to perform the inspection and supervision (Vietnam E-commerce and digital economy agency, recorded by Duong Cong Chien, 2020).

Thirdly, the current legal system governing e-commerce activities in Vietnam is shortage and inadequacy. For example:

- The law on electronic contracts (legal value, effective date, authentication...) is incomplete, making it difficult for e-commerce activities.

- The law on digital signatures, electronic documents and electronic evidences...still has shortcomings, causing disputes...

- The legal framework for digital banking has not yet satisfied the requirements of e-commerce.

- Laws on tax, tax administration, accounting, auditing, dispute settlement, violation handling,... related to e-commerce activities in the digital economy are still inadequate. The state budget loses tax revenue and authorities could not manage tax. As a result, it arbitrarily sets out the prohibition that is contrary to the principle of law on general commerce and e-commerce activities.

- The mechanism for the management of e-commerce (including the state management) is not clear. There is a lack of regulations for checking, monitoring and lack of regulations on competences and sanctions for violations in e-commerce activities.

According to the current regulations, traders, organizations and individuals that set up websites to sell/ provide e-commerce services must notify and register with the Ministry of Industry and Trade (Article 5, Circular 47/2014/TT-BCT). Then, the tax authorities coordinate to collect information for tax administration. However, there is lack of regulations on the responsibility of state agencies to inspect and supervise, and lack of sanctions for violations while in fact, it is popular that traders, organizations and individuals do not declare and register, resulting to tax loss of the state budget.

Fourthly, the legal system of e-commerce has not met high requirements of international trade integration. It has not really been consistent with the Model Law of the UN Commission on International Trade Law on e-commerce.

From the nature and role of e-commerce, in 1996, UN Commission on International Trade Law – UNCITRAL introduced a model law on e-commerce, being used by countries when building e-commerce legislation. It includes model provisions on the recognition of the legal validity of data message and assurances with the basic principles of e-commerce and ensures consumer protection, property rights protection and the equality between e-commerce business entities. Based on regulations in Vietnam, commitments that Vietnam is a member, on the basis of the UNCITRAL Model Law on e-commerce, there are some shortcomings that need to be considered for amendments and supplements.

- Regulations to protect consumers interests in e-commerce involving foreign elements
- The protection of intellectual property rights in e-commerce involving foreign elements
- The issue of ensuring equality between e-commerce business entities.

The current legal system of e-commerce in Vietnam has regulations to create more advantages for foreign businesses, creating inequality between domestic and foreign business entities. Foreign enterprises such as Grab, Google, Facebook, Agoda, Traveloka... could run cross-border business in Vietnam with many advantages over domestic e-commerce business firms.

3. Recommendations to construct and complete the law on e-commerce in Vietnam

It is necessary to build and complete the legal system on e-commerce in Vietnam. The reasons are as the following:

- In the 4.0 revolution, the infrastructure for e-commerce including the widespread and developed internet network, has promoted e-commerce's development significantly. E-commerce

relationship involves many subjects, objects, fields, so it is governed by different legal regulations, while the legal system governing these relationships still has many problems.

- E-commerce activities develop rapidly and have many changes. Many new e-commerce models, many modes of operation, foreign elements, new participants joining for different purposes... have not been governed by law. So it is required to set the respective legal rules to control.

The final aims of constructing and perfecting the current legislation on e-commerce in Vietnam are:

- Creating a law model on e-commerce to satisfy the reality requirements in the context of globalization

- Constructing and completing laws governing e-commerce. It is required to create an appropriate legal environment, including feasible e-commerce practices that are consistent with international commitments.

- Amending inadequacies of the current legal system of e-commerce in Vietnam.

It is suggested some solutions as the following:

Firstly, Amending and supplementing the Law on Commerce 2005, including the adjustment of e-commerce.

Although there is the Law on Foreign Trade Management 2017 that amending and supplementing a number of provisions in the 2005 Commercial Law, only regulations on international trade had been changed. The Commercial Law 2005 has many shortcomings and lack of regulations governing commercial activities, especially for e-commerce. As a specialized law governing commercial activities, it is necessary to review all the provisions in the Commercial Law 2005 governing e-commercial relations to amend and supplements. It is recommended that on the basis of e-commerce's features, practices in Vietnam, the requirements of international trade integration, and the Model Law of the UN Commission on International Trade Law – UNCITRAL, regulations that are no longer appropriate need to be amended. Besides, principal legal norms governing e-commerce relations should be supplemented. The Commercial Law has not regulated any e-commerce relationship that has been governed by the Civil Code and other relevant Laws. Moreover, it is required to compare with the international treaties on trade, including e-commerce to adjust and supplement such as 1980 United Nations on contracts for the international sale of goods (CISG), CPTPP, EVFTA, and other FTAs related to international trade. There are some recommendations.

- The scope of regulation and subjects of application in the Law on Commerce should be broaden. The Commercial Law should stipulated that the subjects of application are organizations and individuals engaged in commercial activities instead of traders doing commercial activities as the current regulation. Specifically, in current law, traders include legally established economic organizations, individuals conducting commercial activities independently, regularly and finishing business registration (Article 2- The Law on commerce 2005).

In fact, entities of e-commerce activities are very wide, including organizations and individuals engaged in commercial activities without business registration. The Commercial Law 2005 does not regulate commercial relations between individuals conducting independent commercial activities without business registration or between individuals engaged in commercial activities and traders,

or between traders and individuals doing e-commerce and consumers. On the other hand, many countries around the world do not require traders to have business registration. Amending this regulation covers all entities participating in e-commerce activities, including foreign traders and organizations that are not presented in Vietnam but doing e-commerce in the Vietnamese territory.

- It is necessary to supplement principals for e-commerce activities in accordance with its characteristics. On that basis, the Law on commerce will specify.

Secondly, it is suggested to issue the Law on e-commerce

In the context of the 4.0 revolution, in order to develop the e-commerce, contributing to sustainable economic development in Vietnam, the Law on e-commerce should be promulgated. It should be a law document that is promulgated by the National Assembly. Currently, in many countries around the world, there are law documents on e-commerce based on basic concepts and principles of the UNCITRAL Model Law on e-commerce. For example, in the United States, Canada, Singapore, Korea, Australia, New Zealand, Japan, Thailand and China.... there are legal documents on electronic transactions. It could be experiences for Vietnam to apply.

Promulgating the Law on e-commerce requires studying and applying the UNCITRAL Model Law on e-commerce. It could be based on the model provisions on the recognition of the legal validity of data messages and electronic transactions to ensure the legitimate rights and interests of the parties. It is suggested that the Law on E-commerce need to clearly stipulate the form of data message display, electronic signature, conditions to ensure the safety of electronic signatures, obligations of electronics signers, parties accepting electronic signatures, and foreign electronic certificates... It also acknowledges the legal validity of data messages in e-commerce as the original text documents, being valid as evidences. Besides, regulations on handling violations of the law on e-commerce and dispute resolution in e-commerce should be set.

It is recommended that the Law on e-commerce should have a separate chapter on e-commerce contracts. In particular, on the basis of the Civil Code, Commercial Law, UNCITRAL Model Law on e-commerce and international treaties to which Vietnam is a member, the E-commerce Law specifies e-commerce contracts. It is not only consistent with the nature of e-commerce and the international practices, but also the legal basis for state management of e-commerce, ensuring the legitimate rights and interests of the parties.

In addition to the codification regulations on e-commerce in current legal documents, the Law on E-commerce is recommended to include specific provisions on the following issues:

- Content and authority of state agencies in the state management of e-commerce activities, including appropriate provisions in the management of e-commerce with foreign elements.

- Regulations on electronic signature and authentication of electronic signature, electronic invoices...that could replace the current Decrees, by-law documents on these issues. Therefore, the current shortcomings in the legal system on electronic transactions are solved.

- Obligations to provide information and the content of published information about goods or services. Related information has to be posted on e-commerce websites and on electronic trading floors. The new law stipulates clearly the required information that must be published

when sellers sell goods on e-commerce trading floors. It is suggested to increase the responsibility and obligations in controlling and filtering information of e-commerce trading floors owners, especially foreigners. The e-commerce activities on social networks and the responsibilities of social network managers are suggested to be assigned.

- Amending some sanctions handling violations the law on e-commerce. In fact, e-commerce carried out on social network is very common, while regulations on the social network management are lacking. For example, the social network of foreigners providing cross-border services like Facebook has not been regulated by Decree 52/2013/ND-CP, so the Law on E-commerce has to cover.

Thirdly, completing the law on electronic payment for e-commerce.

On the basis of current regulations on payment in commercial relations, it is necessary to review regulations and carefully study international judicial sources on electronic payments in e-commerce in order to complete regulations in Vietnam, ensuring convenient and transparent payment. It also contributes to complete the national e-commerce payment system. It is required to make payments via banks or intermediaries with specific regulations. Regulations for utilities integrating electronic payments in e-commerce transactions are also suggested. Furthermore, it is necessary to build and complete legal basis for digital banking to meet the requirements of electronic payment in e-commerce.

Besides, regulations on electronic documents, electronic documents authentication in electronic payment need to be completed.

Fourthly, completing the tax and tax administration legal system for e-commerce activities.

E-commerce activities are very difficult to manage because it is difficult to verify identity information, easy to access but easy to delete or change. E-commerce activities are implemented through information technology means such as mobile phones, computers anytime, anywhere with anyone while information of buyers and sellers is not specific. So it creates challenges to find out if they do not implement the tax obligations. Meanwhile, in Vietnam, the legal regulations on tax administration for e-commerce are not specific, difficult to implement, requiring further improvement to ensure equality between subjects participating in e-commerce and the revenue sources for the state budget.

It is required to completing the tax law and tax administration law with e-commerce in order to create a clear legal basis to correctly identify legal facts that create tax obligations in Vietnam. In particular, attention should be paid to cross-border transactions of intangible assets and services arising in a digital economy that are not contrary to international treaties to which Vietnam is a party. Besides, it is necessary to determine the correct basis for tax calculation (such as revenue, expenses, profits...), sources of income...

Moreover, completing the tax law and tax administration law for e-commerce has to go along with the improvement of the law on accounting and auditing related to e-commerce.

Fifthly, it is suggested to complete regulations on intellectual property rights, consumers' protection, and regulations on handling violations and disputes in e-commerce.

The issue of intellectual property rights and protections of intellectual property rights in e-commerce must be regulated appropriately by law. In Vietnam, the related regulations need

to be further improved, creating legal environment to promote the creativity of individuals and organizations in e-commerce. For example, how the creative ideas in creative start-ups is protected affects motivation of individuals and organizations to startup in e-commerce.

It is recommended to clearly define and delineate the responsibility of participants in e-commerce. In order to protect consumers and limit risks in e-commerce, the law system should have regulations to ensure utility encryption and privacy security. It is required to specify the responsibility of the sellers in e-commerce transactions.

Moreover, it is also suggested that completing the law on e-commerce has to guarantee the legal basis for creating online brands for Vietnamese goods and services.

In e-commerce, there are many complicated violations that are difficult to define, so it is easy to dispute. The evidences for solving dispute also differ from traditional commerce. In order to limit violations and disputes in e-commerce and handle them, it is required to improve legal regulations on this issue, including the provisions of evidences, providing evidences, ways to solve and punishment...

Sixthly, completing the law on e-commerce to meet the requirements of international integration

International integration in e-commerce has been a trend. Especially, in the current Covid 19 epidemic, it will be a major trend in the world. Therefore, it is necessary to create and complete the law on e-commerce to make a legal basis for enhancing international integration of Vietnam in the field of e-commerce. In addition to actively participating in activities to create an international legal framework on e-commerce (through activities of WTO, ASEAN, APEC, UNCITRAL...), Vietnam also cooperates bilaterally on e-commerce with the US, China, Korea, Japan... It is suggested that Vietnam studies the laws on e-commerce of other countries, learns from their experiences in the process of building and completing the law on e-commerce in Vietnam.

Vietnam has been a member of the 1980 Convention on contracts for international sales. So, it is required that Vietnamese laws have been adjusted accordingly, including provisions on procedures for contracting (electronic contract), legal protection measures for international trade contracts...

Conclusion

To contribute to sustainable economic and business development in the context of globalization, it is objective and necessary to construct, complete and implement the legislation on e-commerce in Vietnam. The suggested solutions are not only specific, but also feasible. On the other hand, in order to develop e-commerce in the digital economy, besides the legal system completion, the environment and infrastructure for e-commerce should be improved. For instance, it is necessary to build a system of infrastructure such as information technology and information infrastructure, mobile communication networks to make sure that the internet could connect things. In addition, it is clear that human resources should be developed to increase quality, satisfy the e-commerce activities' requirements. Furthermore, online public services need to be encouraged and the efficiency of state management on e-commerce is expected to increase.

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RACE TO THE BOTTOM ON CORPORATE TAX AND RECOMMENDATIONS TO VIETNAM

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Abstract: *In order to attract foreign investment capital to serve economic development, countries are constantly implementing competition measures, including tax competition. Tax competition between countries can be achieved by reductions in corporate income tax rates and personal income tax rates, as well as the application of tax incentives. The fact that many countries consecutively lower corporate income tax rates to attract foreign investors to conduct investment, production and business activities in those countries may create a «race to reduce tax rates». between countries, also known as a «race to the bottom». By the usage of synthesizing documents combined with analysis and description methods, this paper has systematized different opinions on the «race to the bottom» in tax competition among countries in the world in the past period, and studied the impact of the «race to the bottom» on taxes on countries, including Vietnam. The results show that although corporate income tax rates in many countries, including Vietnam, have been continuously adjusted for a long time, there is a «race to the bottom» in the coming time is unlikely to happen. Besides, the paper has also proposed a number of policy recommendations to ensure sustainable economic development as well as ensure tax competitiveness of Vietnam.*

Keyword: *tax competitiveness, tax incentives, tax policies, tax rate, the race to the bottom*

Introduction

The concept of tax competition can be understood in many different ways. Nguyen Van Hieu (2008) said that global tax competition is the introduction of a tax policy with a comparative advantage to attract resources, labor and other economic factors from outside into the country, or (at the same time) to limit the movement of resources from within the country to abroad. Le Xuan Truong, Phan Le Nga (2020) believe that tax competition is the combination of elements of a tax system that creates comparative advantages in taxation, including tax policy, tax law, tax administrative procedures to attract resources, labor and other economic factors from outside the country and / or to limit the movement of resources from within the country to abroad.

Tax competition among the countries around the world has been taking place since the late twentieth century and has attracted many studies in the past time. In Vietnam, research on tax competition has not been done much. This article mainly focuses on understanding and codifying “race to the bottom” - the result of countries reducing corporate and personal income tax rates, as well as introducing providing tax incentives to improve the competitiveness of the tax system; point out the impacts of the «race to the bottom» on countries in general and Vietnam in particular. and suggests some policy recommendations to ensure sustainable economic development as well as Vietnam’s tax competitiveness.

The race to the bottom on global tax competition: A literature review

The trend of tax competition in the world has begun in the last years of the twentieth century and also attracted the attention of many researchers. In order to attract foreign investment capital for economic growth, countries have used the reduction of corporate income tax rate as an attractive condition, and other tax incentives as well. Researchers have called this action of countries that consecutively lower their tax rates in tax competition as a «race to the bottom» on taxes, which could result in the zero tax rate in all countries. (Frey (1990), Scharpf (1997), and Tanzi (1995)). Whether or not there is a «race to the bottom» on taxation has been attracting debate and research by scholars in recent years..

Some researchers and international organizations believe that «race to the bottom» exists in international tax competition. Oxfarm (2016) argues that tax competition has led to “a race to the bottom” on taxes in countries, thereby increasing inequality as well as poverty. Also according to this report, the ultimate beneficiaries in the «race to the bottom» on taxes are foreign businesses that enjoy low corporate income tax rates, while the losers are governments (as budget reductions) and the poor (as the tax burden has shifted from businesses enjoying corporate income tax exemptions to citizens who have to pay higher consumption-related taxes, for example VAT). Indirect taxes such as VAT, which fall disproportionately for the poor (compared with a reduction in corporate income taxes), account for an average of 67 percent of tax revenue in sub-Saharan Africa and affecting women most (IMF, 2014). Therefore, countries, especially developing countries, need to end the «race to the bottom» by cutting corporate income tax to secure revenue. In poor countries, corporate income tax revenue out of total tax revenue is usually twice that of developed countries. Philip Bazel, Jack Mintz and Austin Thomson (2018) said that in 2018 when the United States, the largest economy in the world, sharply cuts corporate income tax from 35% to 21%, that put pressure other countries, in which, the Canadian economy will be impacted most. It is likely that there will be a new «race to the bottom» on taxation.

Besides, there are also many scholars who believe that tax competition between countries does not necessarily lead to a «race to the bottom». Quinn (1997), Basinger and Hallerberg (2004); Hays (2003) agreed that the «race to the bottom» hypothesis is inconsistent with the fact when the empirical evidences show that the capital tax rate cannot be equal to 0% as predicted by the model «race to the bottom». Thomas Plümpner and Vera E. Troeger (2009), which studied data from 23 Organization for Economic Co-operation and Development (OECD) countries between 1975 and 2004, concluded that there was no “race to the bottom» on taxation, as states are unwilling to reduce the rates on capital moving between countries even without political constraints.» Vera Troeger (2013) argued that tax competition affects countries differently and did not lead to a «race to the bottom» because investment capital was not easily mobile. A country’s competitiveness depends on the size of its economy, capital mobility, initial fiscal conditions, and lack of fair norms. Therefore, the capital tax cuts will not necessarily have the desired effect of attracting more investment flows. Robert S., Chirinko, Daniel J. Wilson. (2017) examined tax competition using data from 48 US states between 1965 and 2006 and concluded that tax competition among US states did not necessarily lead to “a race to the bottom”, in another word, if one state cuts its tax rate, other states will not do the same. By studying the tax competition model through the capital tax response

function, the authors argued that the pressure to reduce the capital taxes of states comes not from tax competition (i.e. how states react to each other) but from aggregate shocks affect states in similar ways. Instead of the states participating in a «bottom race» (all acting the same), the states could compete with each other like a «seesaw» (i.e., acting in the opposite direction).

The reason for the «race to the bottom» on corporate income tax

Foreign investment, including direct investment (FDI) and indirect investment (FII), plays an increasingly important role in the economic development of countries. In order to create a competitive advantage, countries can take a variety of measures to attract investment, one of which is the application of low tax rates and tax incentives (tax exemption, tax reduction, tax holiday and tax credit ...) for foreign businesses. When a country lowers its tax rate, for example the corporate income tax rate, to attract foreign businesses to invest in that country, other countries will do the same, i.e. will also reduce the corporate income tax rate to equal or lower (to a competitive tax rate). It is the consecutive reduction of tax rates of countries in tax competition will lead to a «race to the bottom».

Another cause of the «race to the bottom» is the existence of tax havens (which are countries or territories that apply legal and fiscal regulations that allow non-residents (individuals or legal entities) to minimize the amount of tax they have to pay when doing economic activities here). In tax havens, the corporate income tax rate is usually very low or even 0%, with tax incentives and commitments to keep information confidential ... Oxfarm (2016) identifies 15 tax havens based on a set of three criteria such as corporate income tax rates, tax incentives and lack of international coordination in combating tax evasion, including Bermuda, Cayman Islands, Netherlands, Switzerland, Singapore, Ireland, Luxembourg ... To prevent businesses from shifting profits to facilities in tax havens, countries would have to participate in a «race to the bottom» by reducing corporate income tax rates, or bringing more additional tax incentives (tax exemption, tax deduction ...) to ensure the effective tax rate lower than the nominal tax rate.

The reason for the possibility of a “race to the bottom” after a period of calm, Philip Bazel, Jack Mintz and Austin Thomson (2018) explained that there are two main reasons: (1) The low corporate income tax rate stimulate investment and help limit unemployment; (2) Low tax rates coupled with a wide tax base will limit profit transfer activities of multinational companies through price transfer, thereby helping to secure revenue for the state budget.

The impact of the «race to the bottom» on taxes on participating countries

Countries participate in a «race to the bottom» on corporate income tax with the aim of attracting more foreign investment capital sources. However, for foreign businesses, low tax rates and tax incentives are not necessarily the primary concern when they choose where to invest and conduct economic activities. According to the World Economic Forum’s global competition report in 2016, there are 12 reasons for businesses to choose to invest in a country. The most important factors are the quality of the country’s infrastructure, the availability of a qualified workforce, and social stability.

Developing countries are three times more likely to be negatively impacted by other countries’ tax regulations and practices than developed countries (IMF, 2014). A recent United Nations University study found that the poorer a country is, the more businesses tend to move profits out of

that country for incentives (such as lower tax rates) in countries. others (Johannesen, N., Tørsløv, T. and Wier, L. 2016).

Countries participating in a «race to the bottom» on taxes will face a decrease in budget revenues, as tax rates are reduced and tax bases are also narrowed. In addition, to increase tax competitiveness, countries often apply additional tax incentives to foreign businesses. This is the basis for tax evasion and tax avoidance of enterprises in the economy. Transfer pricing, including both domestic and international price transfers, as well as profit transfers that have development opportunities, have resulted in a significant decrease in state budget revenues. Action Aid (2013) estimates that developing countries lose more than \$ 138 billion from providing tax incentives to large enterprises. If countries continue to participate in the «race to the bottom», it could lead to too much decrease in tax rates and too wide tax incentives, which will seriously reduce the revenue of the state budget. In turn, when the state budget is reduced too much, there will not be enough financial resources to spend on development investment and social security programs, which in turn reduces the competitiveness of the economy and social unrest. Studies by UNESCO (2015, 2016) and Steinberg, K. et al. (2014) showed that developing countries lost about 100 billion USD each year due to corporate income tax evasion. This is more than enough to pay for education for 124 million children who are absent from school and to pay for medical interventions that could save the lives of 6 million children.

Oxfarm (2016) suggests that the “race to the bottom” in tax competition between countries increases inequality and poverty, as well as increases tax evasion and tax avoidance of foreign firms through the transfer of profits to countries with lower tax rates or to their representative bases in tax havens.

The trend of tax rate reduction in the «race to the bottom» in the world

The reduction of corporate income tax rates has appeared since the late decade of the twentieth century. Over the past 30 years, the trend of competition through lower corporate income tax has seen a strong boom, then sagged and then reappeared.

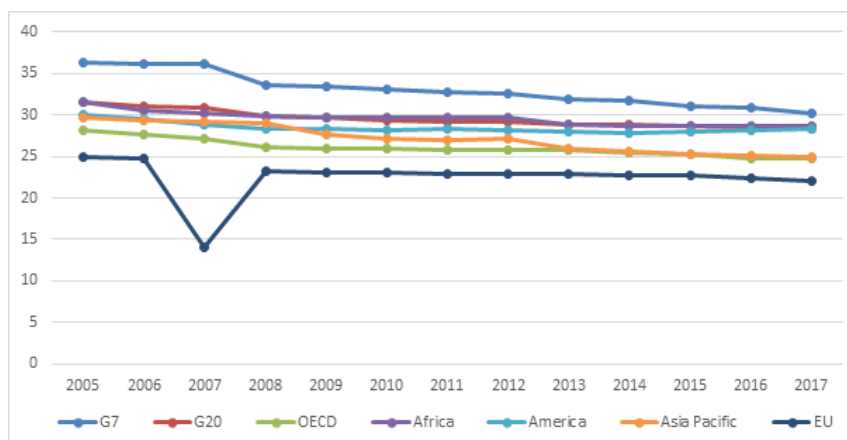
Chris Edwards and Veronique de Rugy (2002), point out that, on average, the personal income tax rates of OECD countries fell 23% between 1985 and 2000 (i.e., from an average of 63% has decreased to 40%)

The study of Vera Troeger (2013) shows that, from 1986 to 2004, the marginal tax rate of corporate income tax of 23 OECD countries has decreased by about 14% but remains at an average rate of approximately 30%.

Nguyen Van Hieu (2008) statistics the changes in personal income tax rates of 26 OECD countries from 1985 to 2005 and shows that the personal income tax rates of these countries have decreased by 28% from the average rate of 63% in 1985 to the average rate of 35% in 2005, in which the average tax rates for the years 1990, 1995, 2000 and 2005 are 53%, 50%, 40% and 35% respectively.

Philip Bazel, Jack Mintz and Austin Thomson (2018) reported the changes in corporate income tax rates of 92 countries between 2005 and 2017, then averaged by country group with two ways of calculation: averages simple tax rate and weighted average on GDP tax rate.

The simple average corporate income tax rate for some groups of countries in the world in the period 2005 - 2017

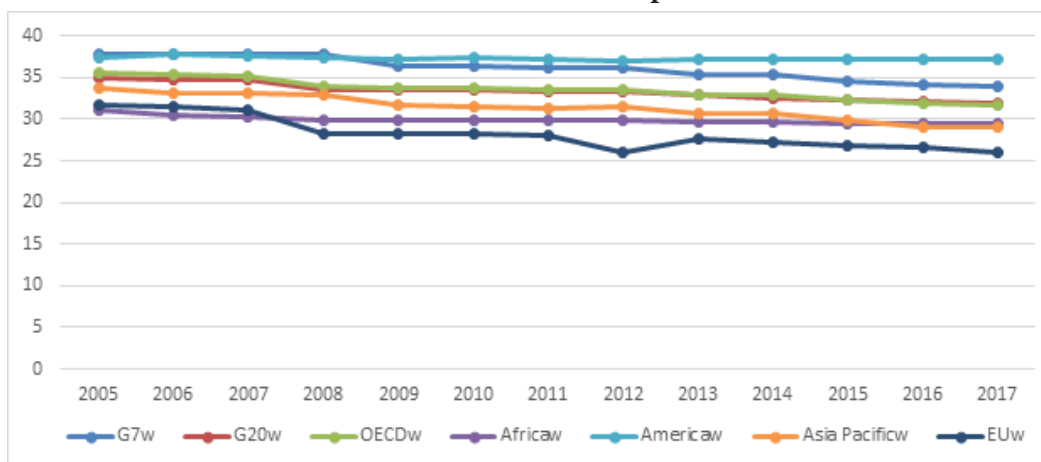


(Source: Philip Bazel, Jack Mintz and Austin Thomson, 2018)

Looking at the chart above, it can be seen that the simple average corporate income tax rate in all groups of countries tended to decrease significantly in the period 2005 - 2008, then leveled off in the period 2008 - 2012 and continued to decrease in the period of 2012 - 2017. Considering the whole period 2005 - 2017, the simple average corporate income tax rates of G7 countries in 2017 decreased by 6.1% compared to 2005, similar to the G20 countries. down 3.2%, OECD countries 3.5% decrease, African countries 2.8% decrease, American countries 1.7% decrease, Asia-Pacific countries 4.8% decrease and other EU countries decreased by 2.9%.

The weighted average tax rate by GDP (in %) of groups of countries in the world also tends to decrease in the period 2005 - 2017. Specifically: the weighted average tax rate by GDP of G7 countries in 2017 4% lower than 2005, similar to G20 countries down 3.1%, OECD countries 3.9% down, African countries 1.5% decrease, American countries 0.2%, African countries. Asia-Pacific decreased 4.7% and EU countries decreased 5.7%.

The weighted average corporate income tax rate by GDP for some groups of countries in the world in the period 2005 - 2017



[Note: w is stand for weighted average by GDP]

(Source: Philip Bazel, Jack Mintz and Austin Thomson, 2018)

Whether it is the simple average corporate income tax rate or the weighted average corporate income tax rate by GDP, the tax rates of the groups studied in the period 2005 - 2017 are lower than those of the period before 2005. However, it can be seen that these tax rates have not dropped sharply “to the bottom” but are still above 20% (with simple average tax rate) and 25% (for the weighted average tax rate by GDP).

According to the statistics of KPMG’s corporate income tax rate in 2020, compared to 2017, the average corporate income tax rate in 2019 of most groups of countries has decreased very little. Specifically as follows: On a simple average, the average tax rates of countries in the European Union in 2019 decrease by 0.21% compared to 2017; American countries in 2019 decreased by 1.08% compared to 2017; America - Latin countries in 2019 decreased by 0.74% compared to 2017; OECD countries in 2019 decreased by 0.6% compared to 2017. In which, most countries kept the tax rates in 2018 and 2019 compared to 2017. Some countries reduced their tax rates and a few increased tax rates.

On the basis of the practical data in the above studies, it can be seen that there is little chance of a “race to the bottom” on corporate income tax rates in the coming time, although countries still make measures to reduce corporate income tax rates and apply tax incentives to foreign businesses to increase tax competitiveness, serving their economic growth and development goals.

Vietnam with a “race to the bottom” on taxes and policy implications for Vietnam

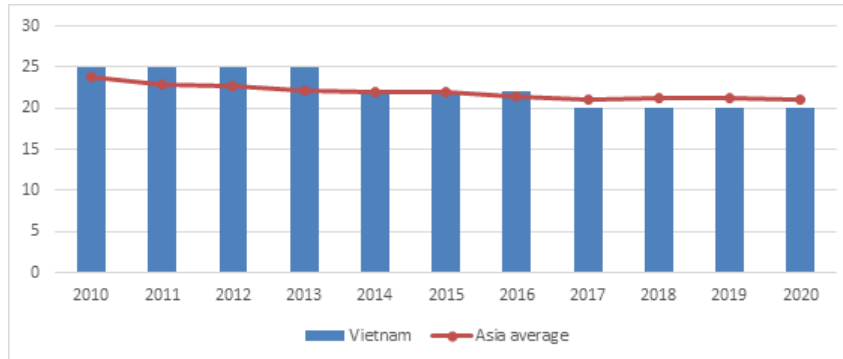
Vietnam’s tax policy has been much reformed to serve socio-economic development in recent years. Vietnam’s corporate income tax rate decreased from 32% to 28% (2004), to 25% (in 2009), to 22% (2014) and 20% (2016). Thus, in 2003, Vietnam’s tax rate was higher than the Asian average (30.19%); in 2004 was lower than the Asian average (30.55%); 2009 was lower than the Asian average (25.37%); 2014 was equal to the Asian average (22%) and in 2019 lower than the Asia average (21.09%). Comparing current tax rates with other countries in the region, Vietnam’s corporate income tax rate is higher than Singapore (17%), Hong Kong (16.5%); equal to Thailand; lower than the Philippines (30%), Indonesia (25%), Burma (25%), China (25%), Malaysia (24%). In general, Vietnam’s corporate income tax rate has been significantly reduced, from 32% to 20% by 2020, equivalent to a reduction of 12%.

Vietnam’s personal income tax rate will also be reduced. Before the promulgation of the 2007 Personal Income Tax Law, which took effect from January 1, 2009, the personal income tax rate applicable to Vietnamese wages ranged from 10% to 50%. Since January 1, 2009, the personal income tax rate on wages in Vietnam has been 7 levels from 5% to 35%. This tax rate has remained stably from 2009 up to now.

Vietnam applies many forms of tax incentives for foreign invested enterprises. The preferential tax rates are 10%, 15% and 17% (while the common tax rates are 20%). In addition, foreign-invested enterprises are also eligible for tax exemption and reduction for a period of up to 13 years.

Considering Vietnam’s tax system, it can be seen that Vietnam’s corporate income tax rate is quite competitively compared to other countries in ASEAN and Asia. In 2020, Vietnam’s corporate income tax rate is 20% while that of Asia’s average is 21.13%.

The corporate income tax rates in Vietnam from 2010 to 2020

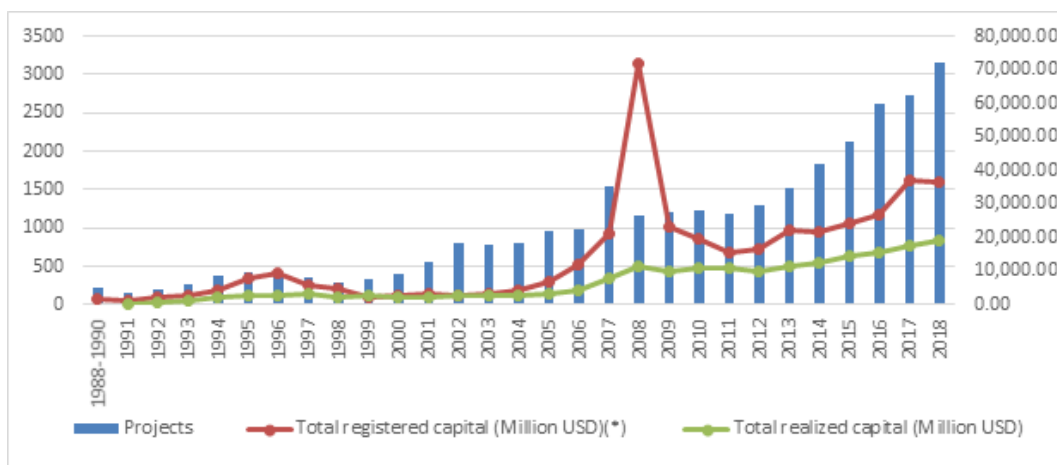


(Source: KPMG 2020)

It can be seen that the reduction in corporate income tax rate in the period from 2010 to 2020 may have contributed to increasing FDI attraction to Vietnam. As of December 31, 2018, there were 27,454 valid foreign direct investment projects licensed from 71 countries and territories entering Vietnam with a total registered capital of 340,849.9 million USD. In particular, the six countries with the largest number of FDI projects in Vietnam are Korea, Japan, Singapore, Taiwan, Hong Kong, and China.

Foreign direct investment to Vietnam from 1989 to 2018

Unit: mil USD



(Source: GSO)

However, in the FDI inflows to Vietnam, there is still a large amount of capital from countries with lower tax rates than Vietnam, even tax havens (such as Hong Kong, Singapore, Panama, British Virgin Islands, Bahamas Islands, Cayman Islands, Belize, Bermuda, Maritius, Chanel Islands, Cook Islands). Among the major FDI partners considered to be this tax haven, Vietnam has signed Double Taxation Avoidance Agreements with Hong Kong, Singapore and Panama, which ensure that FDI enterprises of these countries are not taxed twice with income earned. Thus, with FDI enterprises coming from these countries, the corporate income tax rate is not a disadvantage, but they will enjoy more benefits when investing in Vietnam.

In the “race to the bottom” on taxation, in addition to reducing tax rates, many countries also apply tax incentives, Vietnam is not out of that trend. VEPR (2020) pointed out that Laos, Myanmar and Indonesia apply tax exemptions for reinvestment activities; Vietnam and Cambodia enact the same policy to economic activities in the agricultural sectors. Malaysia does so for its approved service projects. Singapore and Brunei provide tax exemptions for enterprises by scale. Vietnam and Malaysia which have 15 forms of corporate income tax exemptions for businesses are the most in ASEAN. With so many forms of tax exemption and tax holidays... can lead to an excess of tax incentives, leading to the deficit of budget revenue. According to Mr. Dau Anh Tuan, Head of Legal Department of Vietnam Chamber of Commerce and Industry (VCCI): In the early 2000s, Vietnam also had a very strong “race to the bottom” when dozens of provinces issued documents which applied more incentives on tax and land to attract foreign direct investment (FDI). These incentives make investing in Vietnam cheaper than many other countries. In addition, the cheap labor and relatively loose environmental standards make FDI enterprises still consider Vietnam as a destination despite relatively weak infrastructure, widespread corruption, poor public services, and short-term policies ...

Implication recommendations to Vietnam

Firstly, on the basis of the analysis of the FDI in Vietnam and the process of reducing corporate income tax rates, in the coming time, Vietnam should not continue to compete with taxes by reducing corporate income tax rates to attract FDI. In other words, Vietnam should not participate in any tax «race to the bottom». Because if the corporate income tax rate continues to decrease, it will put great pressure on the state budget (which is in a prolonged deficit) of Vietnam (because the total tax revenue accounts for nearly 80% of the total state budget revenue (VEPR, 2020), forcing Vietnam to increase tax rates of other taxes (which is difficult to implement).

Secondly, in the coming time, Vietnam needs to narrow tax incentives, review the overall tax incentives to remove incentives that are not really effective, even harming the state budget and the economy of Vietnam.

Thirdly, as compared to the CIT rates of countries in Asia and ASEAN, Vietnam’s CIT standard rate is at the middle of the range, higher than some countries, equal to most of the countries and lower than some countries.

Conclusion

Through the systematization of contents related to international tax competition represented by “race to the bottom» between countries around the world and Vietnam, the paper has analyzed the effects of «race to the bottom» on taxes for participating countries, as well as predicted that there is no «race to the bottom» in the coming time and propose two policy implications for Vietnam to ensure the competitiveness of the tax system as well as sustainable economic development. However, the article has not applied econometric model to evaluate the effect of tax rate reduction on attracting FDI capital into Vietnam, these are issues that need to be clarified in the next research.

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INTEGRATION COMPETENCE OF VIETNAMESE ACCOUNTING, AUDITING HUMAN RESOURCES IN THE AEC: CURRENT SITUATIONS AND RECOMMENDATIONS

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Abstract: *These professions that ASEAN member countries recognize each other and skilled workers are allowed to move freely including: engineering, architecture, nursing, survey, medical practice, dentistry, accounting tourism which account for only 1.5% of all jobs in the region. In order to work in the ASEAN Economic Community (AEC), labour need to have accredited qualification, followed by language requirement together with other soft skills such as teamwork, the ability to adapt to high work intensity and cultural differences. These are also barriers that make Vietnamese labourers weak in the fierce competition when integrating into AEC. This paper is conducted to investigate and compare the integration competence of Vietnamese human resources in accounting, auditing with other countries in the AEC as well as the labour market requirements in new context of regional integration. Data are collected from Report of the Association of Accountants and Auditors, Association of Chartered Certified Accountants (ACCA), World Bank, Certified Practising Accountant (CPA) Australia Vietnam Association of Certified Public Accountants (VACPA). The results show some limitations that Vietnamese human resources need to overcome in terms of four criteria including labor quality and labor structure, productivity, ability to access labor market information and ability to use foreign language. Based on the findings, some recommendations are given for improving the quality as well as the integration capacity of accounting human resources in Vietnam in new context of ASEAN cooperation.*

Keywords: *AEC, accounting, auditing, integration capacity*

1. Introduction

The goal of services liberalization, investment and skilled labor has been achieved to build a single ASEAN market, thereby helping to build and enhance foreign investor confidence in the region. In the ASEAN region, while contributing to promoting intra-regional investment and trade in services. Particularly in the field of accounting and auditing, besides the ASEAN Framework Agreement on Services (AFAS), the Mutual Recognition Agreement (MRA) which took effect after December 31, 2015 marked a step. deeper integration of the industry into the region's market of auditing and accounting services. Therefore, it is very necessary to improve the quality of human resource in accounting and auditing in Vietnam to meet the current context.

However, the current training of accounting and auditing subjects at schools only stops at intensive training on the theoretical content of standards, basic principles of accounting, auditing. There are no programs on practice as well as there is no cooperation between the school and the auditing companies, enterprises for all specialized students to practice auditing.

To develop human resources in accounting and auditing in sufficient quantity and quality assurance on the basis of renewal and enhancement of training and fostering; At the same time, the combination of specialized training and refresher training and higher education to create high quality human resources. At the same time, the enhancement of international integration, the establishment of close ties and mutual recognition between Vietnam and other countries in the region, the world and international organizations.

The objective of the article is to identify the advantages and disadvantages of the accounting and auditing human resources in Vietnam as Vietnam integrates into the AEC and makes recommendations for businesses and State agency to improve the integration of Vietnamese accountants. This is to help students after graduation have the qualities and qualifications to meet the social needs in the current context.

2. Literature Review and Methodology

2.1. Literature Review

The process of international integration in accounting is taking place on a large scale in all over the world. The process of integrating national accounting standards with international accounting standards will not happen easily and quickly in any country, including developed countries. Therefore, if there is no well preparation from the beginning, firms will surely encounter big mistakes and obstacles when integrating with international accounting standards (IAS). Stemming from the above problems, all countries need to have a clear strategy with solid steps to fully prepare the force for the integration process (Ho, 2010).

The research results show the current status of international integration strategy in accounting in some countries in the world such as the European Union and continental European countries, the US and Canada and China. Since then, the author concludes the lessons for Vietnam on international integration in accounting such as setting objectives, developing and announcing strategic roadmap and solutions.

Although Vietnam's accounting innovations took place in the 1980s, it was not until 1994, when preparing for the 1996 accounting system, Vietnamese accounting was directed towards international integration. In 1998, with the help of the European Union, Vietnam began to build a system of Vietnamese accounting standards and announced its implementation plan. The result of this process is from 2001 to 2007, the Ministry of Finance issued 26 Vietnamese accounting standards (VAS) and guiding circulars.

Also, in this year, the enterprise accounting system was revised along with the promulgation of a small and medium enterprise accounting system (Vu & Trinh, 2008). In addition, the authors also presented the international accounting integration strategy of the European Union, Canada, China, and Southeast Asian countries. It is stated that it is necessary to have a new strategy in which there must be a distinction between the type of enterprises in international integration of accounting.

One of the most important strategic solutions for international integration is to develop a team of accountants and auditors through developed and upgraded training programs towards the approach

international accounting standards. Phan (2016) believed that the market of unified accounting and auditing services requires preparation in all member countries on the legal framework, on the harmonization of standards, auditing standards, closing the gap of differences, on the coordination and consistency of the training program and training content; examination and assessment of training quality, service quality, mutual recognition of each country's practice certificates.

2.2. Qualitative Methodology

i. Data collection methods

The paper conducted data collection method on the basis of inheritance reports, documents related to the human resources in accounting, auditing such as Report of the Association of Accountants and Auditors, Association of Chartered Certified Accountants (ACCA), World Bank, Certified Practising Accountant (CPA) Australia Vietnam Association of Certified Public Accountants (VACPA) in the recent years.

ii. Data analysis method

- Method of synthesizing and analyzing secondary data about the overview of Vietnam's integration into accounting and auditing in the AEC framework;

- Method of comparing data related to human resources in accounting and auditing between Vietnam and other countries in the AEC to find out the strengths and the weaknesses of Vietnamese accounting, auditing human resources in the AEC in past years. Since then, this article has proposed solutions for businesses and related groups to improve the integration competence efficiency of Vietnamese accounting, auditing human resources in new context of globalization.

3. Results and Discussion

3.1. Overview of Vietnam's integration into accounting and auditing in the AEC framework

In Vietnam, after more than 20 years of integration in the field of accounting and auditing, we have had major changes such as reform of the legal framework for professional development and accounting and auditing services. That is the promulgation of the Accounting Law in 2003, 2015 the Law on Independent Audit stipulates the principles, conditions, scope, and forms of audit ... More than 20 years of development, the independent audit industry Vietnam has grown from only 2 companies with 13 employees (in 1991) to more than 140 independent audit firms operating in the form of limited liability companies, private companies, and companies joint ventures and partnerships.

According to the Vietnamese Association of Certified Public Accountants (VACPA), there are currently 10,866 people working in this field, an increase of 4.11% compared to 2013. Out of 10,866 people, 9,543 people are employees Professional, 1,528 people have certificates of auditors Vietnam. Out of 1,528 auditors, only 240 people obtained the certificate of international auditor. In 2014, auditing companies provide different types of services to 36,262 customers with a total turnover of 4,583,134 million dong... As of August 2015, 3,496 people were granted auditor's certificates . However, the number k Score is auditor practice is still a lack of demand due to nearly 1,500 certified k Score is the auditor not registered audit practice.

The number of people with university degrees majoring in accounting and auditing is increasing. However, the quality of training is low. The reason is that schools are slow to renovate their training programs and especially limited language skills.

By the end of 2014, the number of Vietnamese with ACCA certificate of international audit was 793 people and CPA Australia was 385 people. The number of people with international certificates tends to increase each year, the average growth rate in the past 2 years is 25%. However, the number of people with international certificates working in the audit firm is only 240 people (Table 1 and Table 2).

Table 1: Number of ACCA members over 3 years 2012-2014

	2012	2013	2014
Number of ACCA members in Vietnam	550	650	800
Number of members are Vietnamese	543	643	793

Source: ACCA

Table 2: Number of CPA Australia members over the years 2012 - 2014

	2012	2013	2014
Number of CPA Australian members in Vietnam	300	420	550
Number of members are Vietnamese	210	294	385

Source: CPA Australia

Vietnam has signed a Framework Agreement on mutual recognition among ASEAN countries in the provision of accounting and auditing services. The Framework Agreement states that ASEAN countries can mutually recognize each other about the practicing certificate of accounting and auditing issued by other ASEAN countries. The roadmap for the implementation of this Framework Agreement is carried out step by step because the level of the countries in the region still has many differences, starting from the mutual recognition of each group of countries and then gradually expanding to the whole region. .

Currently, the Ministry of Finance of Vietnam has also admitted allowing the transition exam to the Vietnam Auditing Practicing Certificate for professional organizations such as ACCA, CPA Australia, and foreign professional organizations that are members of the International Federation of Accountants (IFAC) ...

On the contrary, ACCA has also recognized each part of the Vietnam Auditor Exam Program (CPA Vietnam) such as: when taking the ACCA exam, the CPA Vietnam certificate holder is exempt from 6 / 14 exam subjects at the Basic level. CPA Australia also acknowledges each exam program for CPA Vietnam. Some people with CPA Vietnam are highly educated, have experience of more than 10 years in the industry and hold leadership positions, key in reputable companies for at least 5 years are also reviewed and invited by CPA Australia join the selection program with rigorous selection process for CPA Australia certification.

3.2. Integration competence of Vietnamese accounting, auditing human resources in AEC

Agreements within the framework of the AEC allow the free movement of highly skilled workers and professionals. However, these occupations only account for 1% of the total workforce

in Vietnam. But like it or not, Vietnamese workers are directly or indirectly affected by the deep, broad and rapid international economic integration with different levels depending on the field of activity and ability to adapt deputy of each business, every worker in the integration environment.

3.2.1. In terms of labor quality and labor structure

The quality, structure and efficiency of labor use remain low. By the end of 2017, only 21.5% of nationally trained workers had degrees and certificates, of which, in the rural area, it was very low, just about 13%. Labor structure by training level is still unreasonable, the shortage of manpower is practical engineers, high-level technical workers. The connection between supply and demand in the labor market still has many shortcomings.

According to the World Bank (WB), Vietnam is very short of a contingent of skilled workers and high-level technical workers. Regarding the quality of human resources, Vietnam only reached 3.79 / 10 points, ranked 11th in 12 Asian countries participating in the World Bank's ranking, while Thailand and Malaysia reached 4.94 and 5.59 points respectively. Besides, the human resource structure of Vietnam also has many shortcomings. As a rule, the number of direct workers with intermediate / primary education must be many times greater than the number of indirect workers with a university or higher degree.

A team of accountants and certified auditors with international standards still has many limitation in both quantity and quality. The training program for accountants and auditors has not been standardized. The organization of examinations and certification was very sparse (once a year); and for the past 20 years, they have been undertaken by the Ministry of Finance instead of professional organizations as usual in other countries. Occupational titles and vocational certificates have not been established and recognized by international standards. Therefore, Vietnam has more than 90 million people, accounting for 1/6 of the population of ASEAN countries, but the number of certified accountants and auditors only accounts for about 2% of the total number of accountants and auditors. existing ASEAN countries (4,000/196,000). Obviously this is the weakness of human resources for accounting and auditing.

Currently, a number of training institutions have been paying more attention to the issue of training human resources for accounting and auditing with international quality. However, such high quality training institutions are not really many in Vietnam. In general, the human resources of the accounting and auditing industry in Vietnam have poor competitiveness, although the number of labors are plentiful and cheap, but they cannot meet the needs of employers. Currently, there are only nearly 5,000 people with international accounting and auditing certificates - much lower than other countries in the region. The audit service market has the participation of about 150 enterprises, serving about 40,000 domestic and foreign enterprises and more than 100 accounting service organizations with over 10,000 employees.

When joining the AEC, Vietnamese workers have the opportunity to find jobs in developed countries such as Singapore, Thailand,... However, the biggest challenge is knowledge and skills that must be recognized among ASEAN countries. While up to half of Vietnamese enterprises said that unskilled workers and even those who graduated from universities and colleges have not met the basic requirements of enterprises.

3.2.2. In terms of productivity

One of the criteria for assessing human resources is the energy yield, understood to mean the ability to generate revenue on a professional staff. The table below presents a summary of the auditing firms' performance.

Table 3: Auditing firms' performance summary in 2013 and 2014

Company	2013			2014		
	Number of professional staff	Revenue (million VND)	Productivity in 2013 (million VND / professional employee)	Number of professional staff	Revenue (million dong)	Productivity (million VND / professional employee)
Deloitte Vietnam Company Limited	620	582,057	939	675	660,083	978
Company Limited KPMG	709	617,334	871	787	659,250	838
Ernst & Young Vietnam Company Limited	816	622,427	763	760	637,798	839
Pricewaterhouse Coopers VN Company Limited	541	570,991	1,055	568	601,176	1,058
AASC Auditing Firm Company Limited	338	130,372	386	353	136,287	386
A&C Auditing and Consulting Company Limited	357	105,445	295	346	114,772	332
Grant Thornton (Vietnam) Company Limited	91	52,434	576	177	94,569	534
DTL Auditing Company Limited	177	57,060	322	178	65,638	369
Marzars Vietnam Company Limited	93	48,785	525	114	61,906	543
UHY ACA Auditing and Consulting Company Limited	95	25,540	269	195	59,912	307
Other auditing firms	5,311	1,344,180	253	5,390	1,491,743	277
Total	9,148	4,156,625	454	9,543	4,583,134	480

Source: VACPA, 2013 and 2014

According to Table 3, feature average yield is 480 million turnover / each professional staff in 2014, up 6% compared to 2013. However, the performance of four companies leading audit Gender (Big 4) in Vietnam outperformed the rest of auditing firms with VND 917 million revenue / professional employee in 2014, an increase of 3% compared to 2013. Nearly 60% of revenue is concentrated in Big 4 audit firms. The remaining companies are mainly domestic auditing firms with a very low level of competition, due to their small, even microscopic size and lack of quantity and quality. technicians, except for 2 competitive companies, namely A&C and AASC. The productivity of the other group of auditing firms (small and very small) is only about 250 million VND / employee on average; only 1/4 (25%) of the Big 4 companies.

3.2.3. In terms of the ability to access labor market information

Enterprises and employees very need specific and practical information related to the integration process because it affects the operation of enterprises as well as jobs for employees. For businesses, economic integration will affect production and business activities of enterprises from input to output, not only in the domestic market but also in the regional and global markets, through the process of eliminating tariff and non-tariff barriers.

At the same time, businesses also need information about direct and potential competitors. Workers need information about job opportunities related to their current competency level and their potential to improve them in the future. Unfortunately, such information for every enterprise and every employee is too rare and difficult to access.

3.2.4. In terms of the ability to use foreign language

Agreements within the AEC on eight free-to-move career areas are accompanied by training requirements that if the labourers are proficient in foreign languages, especially English, they can move more freely. However, the English level of Vietnamese workers is too low and very few workers can use the languages of ASEAN countries such as Thailand, Laos, Cambodia,...

These limitations are becoming major challenges for education. Survey results of graduates from major and reputable institutions and universities in the accounting and auditing profession in Vietnam show that: knowledge and thinking about global issues still limited, difficult to deeply integrate with the international accounting and auditing industry. Up to 2/3 of the survey respondents could not grasp the accounting or auditing work immediately after being assigned, but had to be trained and re-instructed.

With knowledge of mainly academic theory, the human resources of accounting and auditing who graduated from university have not immediately met the practical requirements of domestic economic units; and nearly 100% of the survey felt that they could not immediately provide accounting and auditing services for foreign economic units operating in the territory of Vietnam. The reason is that they are very weak in foreign languages, can only read documents, and their listening and speaking skills are very weak. As such, this workforce has not yet met the needs of the domestic job market, not to mention going abroad.

4. Conclusions and Policy Implications

4.1. Conclusion

The integration capacity of Vietnamese accounting and auditing human resources in the AEC will be ensured and promoted only if there are mechanisms and policies for Vietnamese accountants and other AEC countries to harmonize with international accounting and auditing standards. Accordingly, content-based accounting training institutions are in line with the requirements of AEC integration and mutual recognition (MRA). In addition to professional training, increase practical training, practical training, equip soft skills and the ability to use foreign languages so that accounting human resources can work after graduation. Now that businesses do not have to retrain.

4.2. Some Implications

To enhance the integration of human resources in the accounting and auditing industry in the AEC community, seize opportunities and cope with the challenges we need to act on:

4.2.1. For State agencies

Further step up the implementation of strategic solutions set by the Government. It is necessary to clearly define the role of the State and the role of professional organizations to accelerate this process.

Besides, government need to perfect the system of legal documents on accounting and auditing in accordance with international standards and practices. To accomplish this, State agencies need to mobilize the cooperation of experts from relevant ministries, departments, universities, accounting - auditing companies, professional associations ... In addition, it is necessary to take advantage of the cooperation of foreign experts to learn from experience and exchange in order to improve the quality of the system of Vietnamese Accounting and Auditing standards.

Enhancing the role of professional associations such as the Vietnam Association of Certified Public Accountants (VACPA), Vietnam Association of Professional Accountants (VICA) ... to help strengthen inspection and supervision of the quality of accounting and auditing practice to ensure that those who are eligible can practice. This will improve the quality and competitiveness of Vietnamese auditing firms in the market. At the same time, when new standards are issued, professional associations should invite experts to exchange and update new knowledge through training classes to improve the qualifications of the contingent of accountants and practicing auditors.

Cooperate more closely with professional associations around the world to train a contingent of accountants and auditors to reach the same level as that of the region. Promote the agreement and cooperation between ASEAN countries to move towards the recognition of mutual qualifications and practice certificates. Establish linkage between state agencies, training institutions, professional associations and enterprises . In which, State agencies and professional associations play the role of issuing and guiding enterprises to implement. During the implementation process, enterprises will contribute their opinions to the State agencies to adjust the system of legal documents to be more suitable with the actual situation.

4.2.2. For training institutions

Renovate the training program in the direction of approaching international accounting standards, ISA and IFRS. Boldly coordinate and strengthen cooperation with ACCA, CPA Australia, CIMA ... to renovate the training curriculum. Strengthen teaching foreign languages and specialized languages so that students can transition to international degrees (ACCA, CPA Australia, CIMA ...) more easily. Students majoring in auditing need to have an even more advanced language output standard than today.

Closely coordinating with agencies and departments such as the Ministry of Finance and the Professional Association in drafting new accounting and auditing standards, thereby helping the school accelerate curriculum renewal in a comprehensive and appropriate way. with practical requirements.

4.2.3. For professional associations

Two-way membership management software has been developed to monitor the whole membership activity in accordance with international requirements. Professional associations are also upgrading the program of updating knowledge, enhancing the quality of members' quality control, professional ethics management ... In the coming time, professional associations need to innovate more strongly, more than the team. function, mode of operation and content of operation to fulfill the function is the place to gather and control the profession.

Renovating the training program: on the one hand, both training the current regulations of the State, on the other hand, it is necessary to coordinate with professional organizations ACCA, CPA Australia, CIMA to train in the direction of international accounting and auditing standards. so that auditors can improve their qualifications further. Strengthen cooperation with professional associations in the ASEAN region to increase the understanding and qualification linkage among accountants in the region.

4.2.4. For accounting and auditing firms

The business should facilitate the training of professional staff understanding of accounting standards, the accounting regime, the new regulations on current tax and contribution of opinions about the impact of the application legal documents on accounting in practice in enterprises through professional organizations, professional training courses ... Encourage staff to study international audit certificates. Coordinate with universities through positive feedback on the quality of new graduates so that schools promote curriculum innovation and participate in curriculum development and review and training at universities. learn new accounting and auditing policies on the basis of ISA, IFRS ... /.

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THE IDENTIFICATION AND CLASSIFICATION OF ENVIRONMENTAL COSTS IN ACCOUNTING

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Abstract: *Environmental cost accounting plays an important role in business decision making process, which helps to improve business economic and environmental efficiency. Environmental cost accounting is promoted by identifying, classifying, estimating, analyzing and providing information related to environmental costs to executives in order to support optimal decision making. This paper will present an overview on environmental cost accounting, then discuss the identification and classification of environmental costs in environmental cost accounting.*

Key words: *Identify and classify environmental costs; Environmental cost accounting.*

1. Introduction

In the context of current global integration and the increase in public awareness of environmental issues, businesses' strategies must be changed accordingly for the purpose of sustainable development. Therefore, along with huge profit goals, businesses must also balance the public interests, environmental benefits and social benefit. As an economic management tool, accounting needs to change to meet this requirement. In fact, environmental cost accounting in Vietnam in general is quite a new ideal, thus practical accounting does not include many environmental expenditure in the costs. Therefore, the identification and classification of environmental costs in environmental accounting need to be considered and studied to help Vietnamese businesses capture information on environmental cost accounting in their accounting practices.

2. Environmental cost accounting

Environmental cost accounting is initially supported by the identification and allocation of business expenditures incurred in each business activities. The allocated costs reflect their contribution to environmental protection. Environmental costs associated to environmental damage expenditure and environmental protection expenditure. Tran Anh Quang (2019) concluded that environmental cost accounting is concerned with internal costs, including direct costs (waste disposal solutions), indirect costs (training), intangible costs (investment decisions of parties).

However, external costs, such as those related to environmental impacts, are increasing. Business environment costs are not tracked or hidden in costs in traditional accounting systems. Managing these costs is an important task of a company's overall cost structure. Proactively managing these costs is an important aspect of maintaining a sustainable business.

Environmental cost accounting is critical in setting an effective environmental management accounting system. The purpose of environmental cost accounting is to identify environmental costs, cost drivers, analyze the hidden costs of a business aiming to allocate these environmental costs separately instead of including them as other general expenses. Then, information on the financial impacts such as related environmental issues will be provided in a more complete and accurate manner to decision-makers. To identify the environmental costs for the purpose of separating these costs from other types of expenses and categorizing them explicitly, the environmental cost accounting tools will help identify and classify the environmental costs incurred in the business.

3. The identification and classification of environmental costs

3.1. The identification of environmental costs

Environmental costs incurred in business activities. According to IFAC (2005), there is no uniformity in the concept of environmental costs.

The term “Environmental costs” is historically defined in many different perspectives.

According to Atkinson et al (2004), environmental costs are identified in the form of expression of two types of costs which are tangible costs and hidden costs. Tangible costs include costs directly related to improving replacement of technology and production processes, costs of cleaning and costs for disposal, discharge, costs of operating permits, expenses environmental fines, environmental fees and charges as required by law, etc. Hidden costs include those that are closely related to the facility requirements to monitor environmental issues. These costs are usually recorded as administrative costs, the cost of legal advice, staff training along with the loss of image and reputation if an enterprise caused environmental damage.

The United States Environmental Protection Agency (1995) defined the environmental costs as internal and social costs. Internal environmental costs are related environmental costs that directly affect firm results. While social costs are personal, social and environmental costs for which an enterprise is not required for accounting records.

The United Nations Division of Sustainable Development (2001) understood environmental costs are cost associated with environmental damages and environmental protection of a business. These costs include costs to prevent, destroy, plan, control, change action, and recover damages that could happen to the company and affect the government and everyone.

The United Nations Conference on Trade and Development (2002) considered environmental costs as voluntary or mandatory costs of a business to manage its environmental impacts caused by the operation of the business, as well as other costs incurred to implement the objectives and requirements of the environmental protection of the business.

According to the German Ministry of the Environment (2003), environmental cost is the term used to refer to different types of costs related to environmental management, environmental protection measures and environmental impacts.

Nguyen Duc Hieu and Tran Thi Hong Mai (2012) concluded that environmental costs directly impact on the financial performance and environmental performance of an accounting unit.

It is clear that USEPA (1995); Schaltegger, S. Burritt, RL (2002); UNDSO (2001) and Deegan (2003) identified environmental costs by scope include internal costs and external costs (or social costs). Internal costs are those directly impact on a business's performance and the business is responsible to clear these costs. Meanwhile, external costs are expenses for which the business is not directly responsible and therefore does not have to record them into accounting system. Social costs are usually cleared by the Government, such as loss of labor due to pollution, damage from destruction of ecosystems, destruction of natural resources, etc. Therefore, the government often uses legal tools such as fines, waste and emissions control regulations to enforce the principle of "polluters pay" and thus integrate external costs into business results (UNDSO, 2001).

According to Burritt (2004), when identifying different types of environmental costs, it should be based on:

- The function of cost management (decision making or internal control).
- Specific decisions (Short-term business decisions or long-term investment decisions, decisions on product design or production processes, etc).
- The manager's role in the value chain (Design or production).
- The degree of manager responsibility (Senior Manager, Intermediate Manager or Facility Level Manager).
- Measurement and evaluation system (Evaluate the performance of each individual).

To ensure the integration of environmental cost information in the current accounting system of the business to meet the need to provide environmental cost information for cost control and business decision-making objectives, the identification of environmental costs should be based on the movement of the material flow in a business. Accordingly, environmental costs include: (1) Waste treatment cost; (2) the cost of preventing and managing environmental pollution; (3) non-product output costs include material costs, processing costs of waste.

3.2. The classification of environmental costs

On the basis of identifying environmental costs, an appropriate cost classification could support a business cost control system. In addition to the traditional cost classification such as: Classification of environmental costs by functions, by purposes, by the uses of costs, by the ability to control costs to meet the increasing environmental management requirements, there are also several newly created methods to classify the environmental costs as classifying by cost identity, by flow of materials and energy, by environmental protection activities, by the relationship between environmental cost and business size. These newly created methods will be presented as follows:

By cost identity, USEPA divided environmental costs into the following categories:

- Conventional costs: raw materials and energy costs having environmental relevance
- Potentially hidden costs: costs captured by accounting systems but then losing their identity in 'general overheads'. Hidden costs including compliance costs are the costs incurred when implementing activities to comply with environmental activities of the law; Voluntary costs are costs incurred related to environmental protection activities that enterprises perform voluntarily, without

coercion, even exceeding the level required by the Law on Environmental Protection; Upstream costs are costs incurred when preparing for production activities that affect the environment such as leveling, research and development costs.

- Contingent costs: costs to be incurred at a future date, e.g. clean-up costs.

- Image and relationship costs: costs that, by their nature, are intangible, for example the costs of preparing environmental reports.

By flow of materials and energy, the environmental costs are not just the costs associated with waste disposal, but also the costs of materials and waste processing. UNDSO (2001) and IFAC (2005) both classify environmental costs in this way, but the difference between them is that UNDSO only considers the material cost of the waste as part of the environmental cost. IFAC considers the cost of materials for the finished product to be the same as the environmental cost. In our opinion, UNDSO's approach is more suitable and should be classified according to the line of materials including:

- Costs of waste: This is first cost related to the environment, including the cost of waste disposal, as the output is not the product of the business such as waste water, waste gas, dust, solid waste, etc. related expenses include:

- + Depreciation of related equipment: Including treatment equipment such as garbage presses, garbage collection containers, pollutant filtration equipment, waste water treatment equipment, etc.

- + Maintenance, operating fuel, services: annual costs for operating materials, maintenance, inspection, etc. for equipment and investment related to the environment to ensure it is operated continuously and stably.

- + Staff cost: Labor cost for waste treatment time, waste water, exhaust gas, ... and labor cost for environmental management activities in general everywhere in the production process. For example, workers in the waste collection room, workers in pollution control procedures in production, etc.

- + Taxes and charges: including waste burial, waste collection, classification, destruction, fees related to polluted wastewater, use of immersion water, air pollution, use of destructive substances ozone, natural resource exploitation, etc. Taxes such as royalties, environmental protection taxes, etc.

- + Penalty and compensation for damage: When an enterprise does not comply with the provisions of the law, it must pay fines. For obligations breaches from termination of contract, breach of contract, etc., it is necessary to pay damages caused to the objects affected by the enterprise's pollution.

- + Environmental liability insurance: Enterprises can participate in insurance premiums to avoid liability risks, overcome normal damage to people, facilities, and biodiversity caused by potentially dangerous activities.

- + Cleaning and repair cost contingency: The purpose of the contingency is to calculate and anticipate costs incurred in the enterprise's activities related to the environment, for example, chemical leakage.

- Cost of prevention and environmental management includes: costs for pollution prevention and environmental management (planning, system, device, media, and activities other managers)

as fees, purchasing outside for environmental management (consulting, training, auditing, communication), labor costs for environmental management activities in general, research and development costs of environmental projects additional expenses due to cleaner production technology, and other expenses.

- The cost of non-product output: cost of purchasing materials for the production of output that are not products of the business, such as raw materials, packaging, auxiliary materials, energy, water and manufacturing costs.

Waste includes solid waste, exhaust gas, wastewater, or collectively referred to as non-product output, is the result of ineffective production. Raw materials are one of the inputs in the production of the product, but not all raw material costs are converted into the value of the finished product, but it will be wasted partly. The cost of raw materials in the waste accounts for a large proportion in the total environmental cost of the business, often accounting for 40-90%. There are also labor costs and other general production costs such as the cost of depreciation of machinery, costs of materials shared for the needs of the workshop, the cost of electricity and water and the cost of services purchased from outside of non-product output.

This classification method has a fundamental difference compared to traditional accounting in the view of the material cost of waste as also the environmental cost (from the traditional point of view, the environmental cost is only considered as the cost related to waste disposal treatments). The environmental cost classification by material stream shows that the enterprise has to pay 3 times for waste: (1) the cost of purchasing materials of the waste; (2) waste processing costs; (3) waste disposal treatments costs. This classification shows that the actual environmental cost is much higher than it is commonly perceived by traditional accountants, thereby altering the administrator's perception of environmental costs. The cost associated with waste is usually not as small as one might think, but it is indeed very large. From there, it helps administrators to be aware of the benefits of cleaner production and make reasonable investment decisions to save natural resources and reduce waste into the environment.

By environmental protection activities, environmental costs are those associated with creating, detecting and preventing environmental degradation. Accordingly, the environmental costs include the following 4 groups:

- Cost of prevention: includes the evaluation and selection of suppliers, selection of equipment for pollution control infections; process design; product design; conducting environmental studies; environmental risk audit, development of management system environment, product recycling, etc.

- Expenses for detecting environmental pollution: including costs for carrying out environmental audits, investigating products and processes, developing environmental performance measures, testing pollution, contamination, verifying the supplier's environmental performance; measure the pollution level.

- Internal waste treatment costs: including the costs of operating pollution control equipment, treating hazardous wastes, maintaining pollution control equipment, applying for permits to production, recycling of scrap, etc.

- External waste treatment costs: including costs for cleaning contaminated lakes, cleaning oil spills, cleaning contaminated soil, settling compensation for individuals, restoring land to a

natural state, loss of revenue due to negative environmental impact, inefficient use of materials and energy, medical care due to air pollution, loss of jobs due to environmental pollution, loss of lakes for entertainment damage to the ecosystem due to solid waste, etc.

Classification of environmental costs according to environmental protection activities helps administrators to be aware of the environmental costs associated with waste prevention, detection and treatment so that they can make appropriate decisions to minimize environmental costs, limiting harm to the environment in view of prevention rather than overcoming consequences.

By the relationship between environmental costs and business size, environmental costs include:

- Environmental fixed costs: the environmental costs that its total unchanged when business size change properly.

- Environmental variable costs: the environmental costs that its total change when business size change.

4. CONCLUSION

The identification and classification of environmental costs in environmental cost accounting has a great effect on business managers, helping businesses control costs better. In particular, the identification and classification of environmental costs help administrators detect phases, production processes, products that consume materials and energy, etc. to offer solutions to use materials and energy more effectively, reduce negative impacts on the environment. Moreover, it helps businesses more accurately determine product costs, monitor more in detail the costs related to environmental costs. Thereby helping businesses in the efficient use of physical resources, supporting product design and sourcing, new environmentally friendly production processes contribute to creating a green environment, especially, creating conditions for businesses to develop sustainable business.

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THE NECESSITY TO APPLY ENVIRONMENTAL ACCOUNTING IN VIETNAMESE ACCOUNTING SYSTEM

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ABSTRACT: *Environmental accounting is a division of corporate accounting, related to information on environmental activities within the enterprise in order to collect, process, analyze and provide environmental information to the insiders and outsiders of the business to use to make decisions. Moreover, environmental accounting aims to achieve sustainable growth, maintain good relations to the community and improve the effectiveness of environmental protection activities. Environmental accounting is therefore an essential introduction in Vietnam accounting.*

Keywords: *Environmental; Environmental Accounting.*

1. INTRODUCTION

In the world in general, Vietnam in particular there has been a significant increase in the number of businesses and other organizations involved in environmental management as part of a governance strategy aimed at providing incentives. The solution is to solve environmental problems and implement environmental protection activities within enterprises. Management of environmental protection activities is as an effective way towards developing management and operation of a business. When implementing the exact costs associated with environmental activities and being fully aware of the potential benefits of these investments and costs, businesses not only improve their performance but also make better and more effective decisions. Information on environmental accounting is not only used within the enterprise but also is provided and publicized through the environmental report to fulfill corporate social responsibility.

The implementation of environmental accounting which will facilitate and favor enterprises, can create competition in the market, enhance the image and position of enterprises in the market; provide more complete documentation and data on the costs that must be included in the product and business processes that are environmentally friendly. If the enterprise has a good attitude and behavior towards the environment, this will be a great advantage in the development of the enterprise, raising its position in the domestic and global markets, helping the enterprises integrate into the international market more easily. The application of good environmental accounting to the enterprise will satisfy and strengthen the trust with the stakeholders.

2. CONCEPTS OF ENVIRONMENTAL ACCOUNTING

In recent years, the environment is becoming a global topical issue. The change of corporate social responsibility for the environmental issues has raised a concerning challenges for the way to perform accounting in the business. Accounting in this situation functions not only to

record and report financial information but also as an effective tool to help managers in managing environmental issues within the enterprise. The advent of environmental accounting therefore is objectively vital to meet the demand for environmental information in the operation of the unit both in theory and practice.

Environmental accounting has appeared in many countries around the world. In the United States, Environmental Accounting appeared in 1972, after the Stockholm Summit in Sweden in 1972, but focused on accounting at the national level, environmental accounting at the enterprise level began in 1990.

In Germany, Environmental Accounting was introduced by the statistic institution of the Federal Republic of Germany in 1980, but focused on accounting for environmental costs and energy flows at the national level.

In Japan, Environmental Accounting was first conducted by the Ministry of the Environment in 1997. In 1998, the Japan Institute for Certified Public Accountants studied the use of environmental cost information to manage problems about environment. 1999 was the first year of environmental accounting in Japan. In 2000, the Japanese Ministry of Environment issued an environmental accounting manual to encourage companies to voluntarily provide information on the environment externally through environmental reports of enterprises. In 2002, this manual was supplemented and republished.

In Korea, environmental accounting was taken into account by the Government and other companies in the middle 1990s. In January 2000, Korea's Ministry of Environment began research on the Environmental Accounting System and environmental Performance Indicators funded by the World Bank. In 2001, the Korea Institute of Accountants published a report on accounting standards on costs and environmental liabilities, to introduce environmental financial accounting. In 2002, the Ministry of Environment of China studied the project on environmental accounting and in 2004 completed and published the environmental accounting manual.

So, new environmental accounting began in the early 20th century and is now popular in developed countries like USA, Japan, Germany, Korea, Australia and Singapore,.....but it is quite new to Vietnam.

There are many concepts about the environment and approaches at different angles:

According to Gauthier et al. (1997, p.1) Environmental accounting in an enterprise is a part of accounting that deals with environmental issues and is inseparable from financial accounting and management accounting; It is an information system that allows data collection and analysis, monitoring, performance evaluation, decision-making, and accountability for managers on environmental costs and risks.

According to Schaltegger and Buritt (2000, p. 30), environmental accounting is a part of accounting that involves the activities of a business or business unit; record, analyze and report information about the impact of the business on the environment and the eco-economic efficiency of the accounting unit.

According to Bennett and James (2000, p.30), Environmental Accounting within the enterprise, involves two types of financial and non-financial information, calculating and using monetary and counterintuitive items to reflect the environmental costs in the business.

According to Deegan (2003, p.10) Environmental accounting is a relatively broad concept related to the provision of information on the performance of the environment to both internal and external audiences. Environmental accounting can be applied at the enterprise, national or regional level.

According to Howes (2004, p.100), environmental accounting is the bridge between environmental efficiency and financial performance. Environmental accounting is linked to the process of providing environmental information to managers in order to save costs, reduce business risk, and increase value.

According to the Ministry of Environment of Japan (2005, p.3), environmental accounting aims at achieving sustainable development, maintaining good relations with the community and improving the effectiveness of environmental protection activities. Environmental accounting methods allow businesses to identify environmental costs, incomes, provide the most reasonable means for measuring indicators (monetary and artifact), and support for environmental result reports. Therefore, environmental accounting can be used as an environmental information system to serve both internal and external audiences.

The views on environmental accounting above may not be exactly the same, most views emphasize the main function of the environment, namely the link between financial efficiency and environmental performance; simultaneous use of two measures under value and artifact indicators, environmental cost accounting takes into account social requirements and the need for an environment accounting information system.

It can be seen that: Environmental accounting is a part of accounting in the enterprise, involving information about environmental activities within the enterprise to collect, process, analyze and provide environmental information for the audiences inside and outside the enterprise to use to make decisions.

Environmental accounting is a part of accounting in the enterprise and cannot be separated. Unlike traditional accounting, environmental accounting is clearly concerned with the environmental impact of business activity. Environmental accounting has two basic functions: internal management and external reporting functions. To perform this function, environmental accounting has a significant influence on the decisions of users of accounting information outside the enterprise, such as customers, investors, authorities, local people.

Environmental accounting has many benefits not only for the enterprise itself, but also contributing to environmental protection for society and people, helping the economy to develop sustainably.

3. ADVANTAGES OF ENVIRONMENTAL ACCOUNTING

Environmental accounting works for specific businesses:

It overcomes the disadvantage of traditional accounting: In today's circumstances, traditional accounting has limitations, especially environmental issues. Traditional accounting does not clearly distinguish environmental factors and provides information about environmental damage to an enterprise, and information about environmental costs is often hidden within a shared cost account. Therefore, managers can hardly capture information about environmental costs when

needed. In addition, the use of general expense accounts for environmental costs often leads to confusion as these costs are reallocated back into production costs at production stages based on product volume or working hours ... this allocation can be misleading without properly allocating some types of environmental costs. When performing environmental accounting, businesses will be able to overcome these shortcomings.

It improves Business Competitiveness: Applying environmental accounting will help to provide more accurate, complete and comprehensive information to measure the progress of the process, thereby improve the image of the business. On the other hand, good environmental accounting will limit inputs such as raw materials, energy, labor, and other costs consumed in the process of creating pollution, increase the efficiency of resource use, increase competitive advantage by reducing production costs. From good environmental accounting, management can make important decisions such as reducing production costs, increasing productivity, investing in machinery and equipment to produce better, cleaner, quality products, resulting in lower costs. This will help businesses gain competitive advantage over higher sales and profits, improve corporate image and relationships with the community, reduce legal issues, improve the position of the business in the market.

Environmental accounting works for stakeholders:

The parties involved in the enterprise are not only employees in the enterprise who are highly influenced and directly affected by the working environment but also outsider such as government agencies, investors, shareholders, customers, suppliers, surrounding communities polluted and others interested in environment.

If the enterprise has a good attitude and behavior towards the environment, this will be a great advantage in the development of the enterprise, raising its position in the domestic and global markets, helping the enterprises integrate into the international market more easily. The application of good environmental accounting to the enterprise will satisfy and strengthen trust with the stakeholders.

4. TRENDS OF ENVIRONMENTAL ISSUES AND ENVIRONMENTAL ACCOUNTING IN VIETNAM

In recent years, environmental issues in Vietnam are experiencing instability and difficulty to control, with many causes, but mainly due to economic development pressure and population growth with resource scarcity. On the other hand, our country is in the process of industrialization and modernization, which has made great economic changes but at the same time it has consequences on the environment, affecting our existence now and future generations. On the daily mass media, we can easily see images, information about the polluted environment. Each country's economic development and environmental preservation often have a negative relationship. If the high economic development objective is to be achieved, the possibility of using more natural resources, the possibility of pollution from the industrial waste is very large, directly affecting the sustainable development of the environment. Therefore, countries need to harmonize the relationship between economic development and environmental protection. With the notion that all things which can affect human health and damage to the environment are considered to be environmental pollution, then environmental pollution can be divided into the following categories: pollution ; Air pollution of water source; Soil pollution; Pollution of noise, vision, light, heat pollution.

The current situation of environmental pollution is exacerbated mainly by the waste from production activities, industrial parks, export processing zones and the lack of awareness of people in daily life discharge. Pollution indicators exceed several times the permissible standards, especially in large cities such as Hanoi and Ho Chi Minh City. This pollution is the main cause of climate change, which reduces energy production. The rate of agricultural land, water shortages, severe weather (droughts, frequent floods), ecological imbalances and increased disease ..., directly affects the production process as well as product quality of the business. Therefore, the development and application of measures to effectively manage the environment are very important issues. How to bring both economic benefits and how to improve the state of the environment looks towards cleaner production strategies.

In 1993, Vietnam first enacted the Environment Law. The Law on Environmental Protection was revised in 2005, but it can be seen that the regulations and sanctions imposed on individuals, organizations and individuals that cause environmental damage still do not really contribute to the protection of the environment, especially at the enterprise level. Actually, not only small businesses but many companies, many big economic groups also do not attach importance to environmental protection, loosen the management and treatment of toxic waste ... This negatively impacts the assessment of international and regional environmental organizations, reduces the reputation of foreign investors as well as the brand and social image of enterprises causing environmental damage. .

In the trend of building a green economy launched by the United Nations in 2010, Vietnam needs a new way of looking and thinking in the roadmap for economic development, ensuring fast, stable and environmentally friendly economic growth. The State should pay attention and issue more and more legal regulations to limit overexploitation of natural resources for economic and social development while minimizing the acts of violation, environmental damage or environmental pollution.

As one of the tools for managing environmental performance in enterprises, environmental accounting can contribute to the control of polluting activities as well as the improvement of the ecological environment. Up to now, Vietnam has not promulgated and guided in a synchronous and complete main contents of environmental accounting for enterprises. Vietnam's accounting regulations on the accounting environment are very blurred and focus only on some of the financial accounting related to liabilities such as environmental protection taxes, environmental reimbursement, cleaning, restoration and return costs. Even if there is a regulation on the content of liabilities, the recognition and measurement are also significant at the material level by merely systematizing the accounts and accounting books of the subsidiaries of another account like Account 33381 - environmental protection tax; Account 3524- other contingency expenses for reimbursement, restoration and ground return; or only information through aggregate indicators on the financial statements such as the target "Taxes and liabilities to the state"; "Long-term provisions"; Environmental accounting management guidelines are not available.

The current situation in Vietnam, in the manufacturing enterprises, especially mining companies, chemicals, construction materials such as steel, cement ... the implementation of environmental accounting in these enterprises is really modest, and the level of independence and independence of environmental accounting information with information on financial status and

operation of enterprises is still not high. Actually, the environmental costs are quite common and are more and more interested by businesses such as the cost of depreciation of waste treatment equipment, salary of cleaning workers, the cost of waste water treatment, the cost of industrial waste, the cost of compensation, the cost of overcoming incidents and the costs of cleaning up and dealing with accidents, etc., but reflecting the environmental costs and environmental benefits do not have separate accounts for monitoring and accounting. Many environmental costs are being reflected in accounts related to management costs (Account 627, 642). Because of such general reflection, managers find it difficult to discern the size and nature of environmental costs in general and of environmental costs in particular.

We can see that environmental accounting is still quite new to Vietnamese businesses, and the application of environmental accounting to Vietnamese accounting is very necessary. Because business activities of enterprises are now related to environmental factors such as natural environment and social environment. It plays an important role in the sustainable development of enterprises in particular and the economy in general. Applying environmental accounting helps managers to capture environmental information, environmental costs, and help managers understand and provide future directions.

5. SEVERAL SUGGESTIONS TO EFFECTIVELY APPLY ENVIRONMENTAL ACCOUNTING IN VIETNAM

In the context of the acceleration of growth models towards a green economy, the application of environmental accounting is proven to be necessary for the purpose of economic sustainable development.

In fact, Vietnam does not have effective tools using in environmental management system. The system of environmental legislation, regulations and standards applied for business activities is incomplete and inconsistent. In addition, Vietnam has not built a national environmental database (about natural resources such as water, minerals, forests; waste treatment technologies; environmental standards for each industry, etc.) as a basis for the accounting process. Therefore, in the coming time, functional management agencies should have solutions to gradually apply environmental accounting into the Vietnamese accounting system in an explicit way such as:

- Firstly, introducing strict regulations and standards related to environmental management as a foundation for the development of environmental accounting treatments. Many experts suggested that an environmental reporting which complies with international standards as well as considers specific conditions of domestic enterprises would be an effective support for environmental management, creating a favorable condition for businesses to well perform environmental protection activities.

- Secondly, it is necessary to coordinate with professional associations to promulgate environmental accounting standards and set environmental information system presented in environmental reports. The setting of these standards should be based on the examination of actual practices of developed countries which already apply environmental accounting effectively such as the United States and the United Kingdom to approach international standards.

- Thirdly, raising business managers' awareness of business social responsibility, especially for environment dimension. Business managers need to regularly update and implement the new

environmental accounting policies in enterprises, especially for manufacturing enterprises which release lots of toxics and polluted emission during their manufacture activities.

- Fourthly, raising financial supports and human resources for the environmental accounting. In fact, environmental accounting is often applied in large-scale enterprises with great financial resources and strict operating policies. Therefore, for Vietnamese enterprises, in the initial stage, it is recommended to initial practice environmental accounting in one line or one department before applying it to the entire enterprise in order to gain the best results.

- Fifthly, developing a long-term business strategy that takes into account the implications of product environmental standards and regulations.

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INFLUENCE OF EXECUTIVE SUPERVISION, ASSES RISKS AND CONTROL ACTIVITIES ON INTERNAL CONTROL OF THE VIETNAMESE COMMERCIAL BANKS

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Abstract: *The internal control system of commercial banks has become increasingly meaningful in the stable and sustainable development of the national financial system over the past time. In order to evaluate of internal control systems in the practical application of Vietnamese commercial banks, the authors conducted empirical research with 382 experts of most commercial banks in Vietnam. The results show that the internal control system of commercial banks has certain effects but still some shortcomings in each component. Thereby, the authors proposed a number of policy suggestions to develop internal control system of Vietnamese commercial banks to ensure efficiency to meet regional and international integration trends.*

Keywords: commercial banks, internal control, Vietnam.

1. Introduction

In the context of global economic integration, Vietnam participates in regional and international economic organizations such as the World Trade Organization (WTO), the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP), ASEAN Economic Community (AEC). This has created many opportunities to promote economic development but also poses challenges of competition and complexity in business activities. This always raises many issues that need to be resolved for commercial banks in order to develop, stabilize and sustainably in the national financial system.

Over the past time, Vietnam has been gradually establishing legal corridors to improve the efficiency of economic development, in which commercial banks are one of the top requirements to create health and foundation for a breakthrough in the whole economy (Vo & Le, 2014; Ngo, 2015). Therefore, internal control system of commercial banks is considered as one of the important tools in managing and controlling economic activities of banks (Ayagre, Gyamerah & Nartey, 2014; Sekyi & Gené, 2016). Regulations of the State Bank of Vietnam on internal control system of commercial banks have been amended and supplemented to the creation of a fundamental legal framework in requirements, principles and evaluation of internal control activities (Tran, 2019).

Due to the essential nature in completing internal control system, the survey and evaluation of the efficiency of the internal control system at Vietnam's commercial banks are important. This is even more meaningful in the context that Vietnam has become increasingly integrated with the

region and the world. With the aim of proposing policy suggestions to improve the internal control efficiency of commercial banks in Vietnam, the authors choose empirical research methods related to each component according to Basel framework on internal control. This method is used to make sense of each element related to internal control system and no previous studies in Vietnam have used this method.

2. Literature review

2.1. Concept of internal control

Previously, the concept of internal control is not clear, but mainly the comments related to the measures and ways that are accepted and implemented to protect money and other assets, as well as checking the integrity in the accounting records of the unit. The official concept of internal control was announced by COSO in 1992, and a recent version in 2013 suggested that it was a process carried out by the Board of directors, the Executive board and all employees, designed to provide a relative assurance to achieve three operational, reporting and compliance goals (COSO, 2013). The Basel Committee (1998) considered internal control to be a process carried out by the Board of directors, the Executive board, and all employees. These are the procedures and policies that are implemented during the operation process in the banking system. The Board of directors and the Executive board are responsible for establishing a cultural environment, creating favorable conditions for the effective operation process and assessing the effectiveness of the process (Bank for International Settlements, 1998). The amended Law on Commercial banks (2017) stipulates that internal control is a set of mechanisms, policies, processes, internal regulations, organizational structure of commercial banks and branches of foreign banks. This is built in accordance with the guidance of the State Bank and are organized to ensure the prevention, detection, timely handling of risks and meeting the requirements.

2.2. Regulations on internal control of the commercial banks

Basel Committee issued an internal control framework document for banking institutions in September 1998. These are important regulations on internal control and this framework consists of 5 elements with 13 principles, namely executive supervision and control culture embodied by the principles from 1 to 3; Identify and assess risks specified in principle 4; Control activities and the assignment and assignment include principles 5 and 6; Information and communication with 3 principles from 7 to 9; Monitor and correct errors including principles 10 to 12; For assessment of the internal control system by the Banking Supervisory Authority expressed in principle 13 (Bank for International Settlements, 1998).

The State Bank of Vietnam has issued an official regulation on internal control on organization and inspection activities in commercial banks operating in Vietnam. With the trend of integrating financial and monetary markets in the region and the world, State Bank of Vietnam has amended and supplemented to complete the regulations related to the internal control system such as the Circular 44/2011/TT-NHNN on internal control system and the internal audit of credit institution. Thus, unlike the Basel Committee, the State Bank of Vietnam did not issue the Internal Control Framework but the internal control regulations of commercial banks are reflected in Circular 44/2011/TT-NHNN with 4 focus content, specifically Requirements and operational principles of the internal control system; Building and maintaining operation of the internal control system; Self-

inspection and evaluation of the internal control system; and Independent evaluation of internal control system (State Bank of Vietnam, 2011).

Recently, the State Bank of Vietnam has issued regulations on the internal control systems of commercial banks and foreign bank branches by Circular 13/2018/TT-NHNN (State Bank of Vietnam, 2018a) and Circular 40/2018/TT-NHNN to amend and supplement a number of articles of Circular 13/2018/TT-NHNN (State Bank of Vietnam, 2018b). These changes are updated to the content in accordance with international principles, specifically Supervision of senior management; Internal control system; Risk management system (regulations on risk management; credit risk management, market risk management, operational risk management, liquidity risk management, centralized risk management, interest rate risk management on bank books, internal assessment of sufficient capital); and Internal audit system.

2.3. Previous studies

In the world, the studies have considered in many different perspectives in assessing the effectiveness of internal control system. Amudo & Inanga (2009) reviewed the process of internal control systems in the Uganda banks. Research results show that the effectiveness of internal control has not been clearly shown in banks. According to the authors, this activity needs to be further improved in the near future. Empirical research by Ayagre, Gyamerah & Nartey (2014) assessed the control environment and the supervisory operational components of internal control system in Ghana banks. The study results find that the control and monitoring environment are two important components in the operation of internal control systems in Ghana banks. The two components with medium mean were respectively. From there, the authors recommend that the governing boards in Ghana banks should take care to ensure continuous and separate internal control oversight so that they can be effective. Sekyi & Gené (2016) investigated the effectiveness of internal control systems from 2004-2013. Authors used the generalized least squares (random effect) method to test. The results show that internal control system has been applied but its effectiveness has not been guaranteed. Accordingly, the authors argue that regulatory agencies need to pay attention to the control environment, risk management, control and monitoring activities to support the effective of internal control systems. Shaman & Senan (2019) studied the effectiveness of the internal control system in Saudi banks. Based on the survey of 90 subjects are experts in banks to consider the impact of each element in the internal control system. The research results show that controlling activity is one of the most important and positive components in banks. The authors also recommend that these banks still need to continue to improve in the environment of risk control, risk assessment and communication systems. In Vietnam, although there are no empirical studies to evaluate the effectiveness of the components of internal control system in Vietnamese commercial banks but there have been a number of studies related to this issue under different perspectives such as Dao and Le (2012); Vo and Le (2014); Ngo (2015); Tran (2019).

3. Methodology

The content of the survey is designed as a questionnaire with 3 main contents about the elements (Executive supervision, Asses risks and Control activities) to review internal control system according to Basel Committee. The study uses Likert scale with 7 levels of evaluation, specifically Poor: 1; Weak: 2; Medium: 3; Medium - fair: 4; Fair: 5; Good: 6; Very good: 7. The

sample of 382 surveyed subjects are working in almost Vietnamese commercial banks. All experts have many years of experience in the field of banking and finance. The survey period will be conducted in the first quarter of 2020.

4. Research results

Survey results show that the internal control system of Vietnamese commercial banks is certain although there are still limitations. This result is quite similar to previous studies in Vietnam. The research results are specifically summarized:

4.1. Executive supervision

Table 1. Cronbach’s Alpha

Source: analysis results from SPSS

Cronbach’s Alpha	N of Items
.702	3

Table 2. Descriptive Statistics

Source: analysis results from SPSS

Items	N	Minimum	Maximum	Mean	Std. Error	Std. Deviation
The extent to which management reviews the activities of measuring and assessing risk.	382	3	7	4.12	.031	.602
Attitudes of managers towards internal control systems.	382	4	7	4.91	.028	.589
The organizational structure is in accordance with the size, business activities and business geographic location of the unit.	382	4	7	4.35	.042	.614
Valid N (listwise)	382					

The condition for Cronbach’s Alpha scale to make sense, the statistical value must be greater than 0.6 (Hair et al., 2006). Cronbach’s Alpha in the scale of executive supervision and control culture is 0.702, so this has met the requirements (Table 1). According to the survey respondents, all contents related to the assessment of management supervision and control culture are above average, while the errors and standard deviations are not significant (Table 2). Regarding the attitude of the manager to the internal control system which is assessed as near as fair (4.91/7). This shows that the managers of the commercial banks are interested in the internal control system and aware of the importance of the system in the operation process. For the level of operational inspection of the Board of Directors for measuring and assessing risk is not high (4.12/7). This is something worth noting because fraud and risk are a concern for managers and they are always looking for ways to control them. Organizational structure suitable to the scope of activities was

also assessed modestly (4.35/7). This can be explained by the fact that the arrangement of full-time personnel in each functional area, specifically related to the independent control departments, which is still an issue to consider. This comes from the training, recruiting, rotating arrangement, personnel coordination in the system of headquarters and branches of commercial banks.

4.2. *Asses risks*

Table 3. Cronbach's Alpha

Source: analysis results from SPSS

Cronbach's Alpha	N of Items
.892	2

Table 6. Descriptive Statistics

Source: analysis results from SPSS

Items	N	Minimum	Maximum	Mean	Std. Error	Std. Deviation
The extent to which managers determine the risks associated with financial statements.	382	3	7	4.62	.056	.645
Assess the likelihood of risks.	382	4	7	4.81	.048	.611
Valid N (listwise)	382					

Cronbach's Alpha is 0.892, the scale ensures reliability (Table 3). The criteria have negligible errors and standard deviations. According to the survey results, the level of evaluation of managers identifying risks and assessing the likelihood of risk is acceptable with a rating above 4, respectively 4.62 and 4.81 (Table 4). This can be explained that the managers in the commercial banks with fairly stable qualifications and professional competence. However, along with that development, the diversity and abundance as well as the complexity in the international business environment in the field of commercial banks are really a matter of concern. The concern is forecasting and identifying potential risks.

4.3. *Control activities*

Table 5. Cronbach's Alpha

Source: analysis results from SPSS

Cronbach's Alpha	N of Items
.702	6

Table 6. Descriptive Statistics

Source: analysis results from SPSS

Items	N	Minimum	Maximum	Mean	Std. Error	Std. Deviation
Commercial banks have policies and procedures for the authorization and approval of operations at each appropriate level.	382	4	7	4.91	.041	.603
Level of compliance with risk limits.	382	2	7	3.28	.057	.687
Handling issues for non-compliance cases.	382	3	7	4.82	.052	.671
The degree of understanding of the employee's duties.	382	2	7	3.78	.051	.647
People who perform surveillance work have enough time to do the work.	382	2	7	2.85	.056	.701
The non-part time in commercial banks.	382	1	7	2.21	.058	.705
Valid N (listwise)	382					

Cronbach's Alpha is calculated as 0.702 and it met the reliability in the measurement (Table 5). Control and assignment and responsibility have not been highly appreciated. This is the most underrated element. Similar to the above, the errors and standard deviations of the items are not significant (Table 6). The commercial banks have fully complied with these regulations and expressed in place for policies and procedures for the authorization and approval of highly rated operations 4.91/7 (near level 5). This is also consistent with the content of the incompetence in the commercial banks rated as low as 2.21/7 (below level 3), also consistent with the problem of handling cases of non-compliance which are appreciated by 4.82/7. Regarding the understanding of the staff's duties related to the control issue, it is assessed not as high as 3.78/7 (below level 4). This problem shows that internal control is a difficult, complex and requires high professional knowledge and broad knowledge of employees. Regarding personnel issues as analyzed above, for the content of supervisors who have enough time to carry out the work, the results show that the low level is 2.85/7 (below level 3). This is because the current status of the allocation of resources to the control department is limited, while these employees must handle all control issues in all activities of the commercial banks. Particularly, the compliance with risk limits is only acceptable (3.28/7). This content is perceived in accordance with the statement of identify and assess risks.

4.4. Assessment of the internal control of a Vietnamese commercial banks

Through the survey results, it can be seen that the internal control system in Vietnamese commercial banks is assessed to be effective. First of all, managers have been aware of the importance and interest in the internal control system, as well as monitoring the activities continuously. In addition, the management team has qualifications, professional capacity and skills to undertake the work in internal control system. Besides, commercial banks have fully complied with regulations on policies and procedures for authorization and approval, ensuring the concurrently imposition and thoroughly handling cases of non-compliance. Then, the role of internal audit has been effective in examining internal control activities. This role has been taken care of and maintained to ensure control. However, in each constituent element, there are issues to be noted such as the inadequate human resources to undertake internal control activities. In addition, the allocation of resources to the control department is not timely and complete. Next, the level of risk identification and risk assessment of managers is not satisfactory. This will have difficulty and hinder control.

5. Conclusion and policy recommendations

5.1. Conclusion

The internal control system in commercial banks plays an important role, an effective tool in controlling economic resources. This is even more significant for commercial banks that have a great impact on the national financial system and affect Vietnam's economic growth. In general, the elements in the internal control system have been actively promoted in Vietnamese commercial banks. However, the State Bank of Vietnam needs to pay more attention to building a complete legal corridor for the internal control system. Besides, Vietnamese commercial banks need to raise awareness to the implementation and application of elements of the internal control system. This contributes to the stability and sustainable development of Vietnamese commercial banks to meet the trend of regional and international integration.

5.2. Policy recommendations

Based on the results of empirical surveys, combined with the characteristics of Vietnam in the trend of integration and in accordance with international regulations, the authors suggest some related for the State Bank of Vietnam and Vietnamese commercial banks to contribute to perfecting the internal control system.

In the current period, the State Bank of Vietnam needs to amend and supplement regulations related to internal control system of commercial banks according to the new contents of the Basel Committee and needs regular updates to timely guidance. After that, the State Bank needs to develop an Internal Control Framework for commercial banks formed with 5 elements and 13 principles on the basis of the Basel Committee's regulations to establish the legal framework standard in accordance with international practice. The State Bank needs to develop a common set of templates on internal control procedures of commercial banks to facilitate and ease the application by internal control is a complex issue, especially in the field of finance and monetary. Next, the State Bank should conduct periodic inspection and supervision of some internal control activities of commercial banks to ensure compliance. At the same time, the State Bank should clearly stipulate the specificity and independence of internal controllers in the internal control system.

Vietnamese commercial banks need appropriate orientations and strategies to strongly develop internal control system. At the same time, commercial banks create a healthy control environment to ensure independence, objectivity and effectiveness in the timely process of risk assessment and response. Commercial banks should invest more funds and pay more attention in recruiting, training and fostering a contingent of internal controllers. Besides, commercial banks should be proactive in assigning resources, organizing personnel in accordance with the characteristics and scale of operations to ensure that the personnel in internal control activities are good at professional skills and sensitive to the time.

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KEY ELEMENTS OF TAX COMPETITIVENESS OF VIET NAM'S TAX SYSTEM IN COMPARISON WITH OTHER COUNTRIES IN THE WORLD

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Abstract: *National competitiveness including tax competitiveness has become one of the central preoccupations of government in every nation. A change in tax policy of each government may cause changes in tax regulations of other governments. Although not being a new issue for over 30 years of emergence, tax competitiveness has been always a controversial topic in recent years all over the world. This paper studies the theoretical issues of tax competition, especially clarifies the key elements and constituent factors of tax competition, assesses Vietnam's tax competitiveness in comparison with other countries in the world and proposes some recommendations to ensure Vietnam's tax competitiveness in the most beneficial way to the economy. Key contributions of this paper are: (1) Pointing out the panorama of tax competitiveness of Vietnam in comparison with other countries all over the world; (2) Suggesting that Vietnam should not continue increasing competitiveness by reducing corporate income tax rates in the coming time; (3) Pointing out that it is necessary to narrow tax incentives and review the overall tax incentives to remove excessive and redundant incentives because in terms of tax competition; (4) Proving that it is necessary to adjust Vietnam's personal income tax rate in the direction of reducing the number of tax rates in the progressive table and reducing the highest tax rate from 45% to 35%; (5) Suggesting that in the coming time, in order to improve tax competitiveness, Vietnam must continue to promote further tax administrative procedure reform.*

Key words: *tax competitiveness, tax policy, tax rate, effective tax rate, tax incentives.*

1. INTRODUCTION

Tax competition in fact has taken place and has researched by many scholars around the world since the late twentieth century. A growing number of studies on tax competition has been published. The researches mainly focus on tax competition trends in countries and analyze the impact of tax competition on the movement of international capital inflows and the attraction to foreign direct investment (FDI), and foreign indirect investment (FII) and the movement of international labor flows. Among which, some studies analyze the impact of tax competition on a fairly large scale, other studies analyze the tax competition effects of only one region or group of countries. Debating whether there is a “race to the bottom” in international tax competition has been a matter of research in recent years.

Branimir Kalas, Vera Mirovic and Milos Pjanic (2017) affirmed that, a highly competitive economy will attract more investors and investment capital for development. Tax competitiveness means efficient and effective management and predictive tax systems, not merely an attractive

business environment. A predictive tax system means that tax rates must be stable and should not be suddenly changed.

The downward trend in tax rates, including corporate income tax rates and personal income tax rates from the late 1980s to the early 2000s, took place internationally as a way of improving the competitiveness of tax system. Chris Edwards and Veronique de Rugy (2002) pointed out that, on average, the personal income tax rates of OECD countries fell 23% over the period of 1985 and 2000 (from an average of 63% to 40%).

Nguyen Van Hieu (2008) stated that, in the mid-90s of the twentieth century there were more than 100 countries provided tax incentives to attract FDI and this trend was still going on.

Studying on the impact of tax competition on the economies of OECD and Central European Union of four countries Visegrad 4 (including Czech Republic, Hungary, Poland and Slovakia) from 1995 to 2015, László Nagy (2017), stated that the harmonization of the European Union's indirect taxation system has removed barriers between member countries, and income tax has become one of the main tools of tax competition. This research also showed that, although tax competition was determined primarily by tax rates (kept at low rates) and highly neutral, the long-term stability of the tax system was also a significant factors which affected tax competition in the studied countries. However, in the European Union countries, there was no evidence showing the competitiveness of the tax system to the movement of investment capital. In other words, the tax burden was not a big problem for investors in relation to other factors of the investment environment such as infrastructure, quality of human resources and the complexity of the legal system of business and investment.

The government's competitiveness in attracting investment capital is limited by the actual capacity of the economy. The narrower the national budget is and the more social equity issues must be considered, the lower the international investment attracted by reducing taxes (Thomas Plumper and Vera Troeger, 2009).

One of the ways that countries can use to increase their tax system competitiveness is to lower corporate income tax rates and personal income taxes. Whether this can lead to "a race to the bottom" is a controversial question. While reality shows that, over the past 40 years, corporate income tax rates and personal income tax rates of many countries have been in a tendency of decrease, even in some "tax havens" such as Malta, Panama, Monaco..., the corporate income tax rate is only 0%. Eventhough, tax competition affects countries very differently and does not necessarily result in a "race to the bottom" because investment capital cannot be easily moved. The adjustment of firms' capital use strategies is influenced by many other factors. Hence, tax cuts will unlikely attract more investment capital (Vera Troeger, 2013). However, some recent research shows that the trend of "race to the bottom" seems to be real. Esmé Berkhout (2016) said that in the past few decades, corporate income tax revenues have decreased significantly, because governments have cut corporate income taxes to compete on taxes, leading to the risk of "a race to the bottom". Ending the "race to the bottom" by cutting corporate income taxes to secure revenue is crucial for developing countries because, in poor countries, the share of corporate income taxes in the total of tax revenue is usually twice that of developed countries. Philip Bazel, Jack Mintz

and Austin Thomson (2018) said that in 2018 when the United States, the largest economy in the world, sharply cuts corporate income tax from 35% to 21%, the pressure will be pushed strongly to other countries, in which, the biggest pressure is on the Canadian economy. This could be the start of a new “race to the bottom”. Philip Bazel, Jack Mintz and Austin Thomson (2018) explained that there are two main reasons for the possibility of a race to the bottom after a calm period: (1) The Low corporate income tax rate helps to stimulate investment and limit unemployment; (2) The low tax rates and a wide tax base will limit profit transfer activities of multinational companies through price transfer, thereby helping to secure revenue for the state budget. Analyzing the impacts on state budget revenue and the interests of investors, Vera Troeger (2013) argues that, if a small economy is at a certain level, tax revenue is levied on investment capital of businesses can increase when the government significantly reduces the effective tax rate, which in turn leads to more capital inflows from abroad; in an economy where domestic capital is relatively large, it also attracts more foreign investment capital when significantly reducing the effective tax rate on investment capital, but the tax revenue increases from the new investment capital inflows cannot offset the reduction in revenue due to the reduction of the tax rate on investment capital.

There is a need to examine the elements of the tax competitiveness of Vietnam in order to find solutions to improve the Vietnam's tax competitiveness. Therefore, this research is aiming at finding the answers to the following questions: (1) What is tax competitiveness? (2) What are elements of tax competitiveness? (3) What is the Vietnam's tax competitiveness like? (4) Should Vietnam continue to reduce corporate income tax to increase the tax competitiveness? (5) What should Vietnam do to raise tax competitiveness in the coming time?

2. METHODOLOGY

In this research, the **factors analysis** is used to make clear the impact of key elements of tax competitiveness of Vietnam. Each factor is considered based on the grades scored by World Economic Forum (WEF) and by World Bank (WB) to analyze the tax elements that impact the tax competitiveness. This method helps to explain the state of each element of tax competitiveness.

Comparison is used to see the rank of the Vietnam's tax system's competitiveness in comparison with other countries and to make clear the conditions that impact the Vietnam's tax system's competitiveness.

Statistical analysis is used to make clear the tendency of elements that impact the tax competitiveness in general and the Vietnam's tax system's competitiveness in particular.

3. THEORETICAL BASIS

3.1. The definition of tax competitiveness

Competition which is defined simply is the attempt to win more, win for oneself among people and organizations that operate to the same interests.

National competitiveness is an economy's capacity to achieve sustainable growth, attract investment, ensure social and economic stability, and improve people's lives.

There are many different interpretations of tax competition. Nguyen Van Hieu (2008) confirmed

that global tax competition is the introduction of a tax policy with comparative advantage to attract resources, labor and other economic factors from outside into its country, or (at the same time) to limit the movement of resources from within the country to abroad.

We believe that tax competition is the combination of elements of a tax system creating the comparative advantages of taxation, including tax policies, tax laws, and tax administrative procedures to attract resources, labor and other external economic factors into their home countries and/or to restrict the movement of resources from within the country to abroad.

With the above understanding, the concept of tax competition is reflected in the following three main aspects:

Firstly, the purpose of tax competition is to create a tax comparative advantage in order to attract resources, labor and other economic factors from outside the country and/or to limit the movement of resources from domestic to abroad.

Secondly, tax competitive advantage is created by tax policy systems, tax laws and tax administrative procedures, not merely tax policy factors. Accordingly, low tax rates and tax incentives in tax policies and laws have had the impact of reducing taxpayers' tax obligations. Favorable tax administrative procedures and effective tax administration help to reduce compliance costs for taxpayers.

Thirdly, the comparative advantage of the tax system is that it reduces tax obligations and improves investment efficiency of investors when investing in that economy, increasing income for workers. when working in that country.

3.2. The position of tax competition in national competitiveness

From the business perspective, tax is one of the cost factors of production and business. Supposed that other factors remain unchanged, the lower the business-related tax liability, the higher the firm's profit, and vice versa. For business people, the low tax compliance costs contribute to increase business efficiency; the simpler and more convenient the tax procedures are, the more convenient the business will be. For investors, the lower the tax liability is, the greater the benefits gained from investment activities. For employees, the lower the tax obligation is, the higher incomes they earn and vice versa. This means that taxes affect the investor's decision on where to invest and do business, and affect the employees' decision to choose the country of work (if they have the conditions to choose).

WEF has assessed the competitiveness of world economies for more than 30 years and identified factors that affect an economy's competitiveness and explains why an economy is more successful and higher ranking than others. Since 2005, WEF has ranked global competitiveness based on the key macro and micro competitive factors of an economy. According to the WEF, there are 12 pillars with 103 indicators determining the competitiveness of an economy, including: (1) Institution; (2) Infrastructure; (3) Macroeconomic environment; (4) General education and health; (5) Higher education and vocational training; (6) The efficiency of the market for goods and services; (7) The efficiency of the labor market; (8) The development of the financial market; (9) Availability of technology; (10) The scale of the market; (11) The quality of the business

network of the economy; (12) Research and development capacity. Among these factors, tax is considered to be a constituent part of factors 6 and 7 and is considered in terms of total corporate tax liability and its impact on labor motivation. Thus, according to WEF, the competitiveness of the tax system is only one part of the overall factors that contribute to national competitiveness.

In another perspective, WB, evaluates the investment and business environment through the following 11 indicators: (1) Business start-up; (2) Labor market management; (3) Construction licensing; (4) Access to electricity; (5) Register property; (6) Access to credit; (7) Investor protection; (8) Tax payment and social insurance; (9) Cross-border commercial transactions; (10) Settlement of contract disputes; (11) Settlement of corporate bankruptcy. Thus, according to the World Bank, paying taxes and social insurance is one of the 11 factors to rank the investment and business environment. The tax payment indicator is measured by the following specific elements: taxes and number of payments, duration, total tax rate and contributions made by a business, and the after-tax metric.

The above analysis shows that tax is a constituent element of national competitiveness and a constituent element of a country's business and investment environment because tax has a direct effect on the benefits of investors and employees. However, it is necessary to clearly define what the position of tax competition in national competitiveness is. Is tax the most important factor? According to the WEF scoring method, each of the 12 pillars has a weight of 8.3 points in which, tax only accounts for 15% of each pillar. In terms of WEF calculation, taxes only account for about 2.5 percentage points of the total national competitiveness points. According to the World Bank, tax is one of 11 indicators that determine a country's business and investment environment. Accordingly, the World Bank uses the simplest method: the indicators have the same weight and in each indicator, the weights for the component indicators are also equal. This means that the tax payment indicator accounts for about 9.09 percentage points out of the World Bank's total score for investment and business environment.

According to Oxfam (2016), corporate income tax is not the most important factor when a company decides to invest in a country. The most important factor when a company decides to invest in a country is the infrastructure, the education system, the workforce, and the stability of society.

Published empirical studies have shown that the position of tax competition in contributing to national competitiveness depends on specific conditions of the economy and in relation to other economies. Thomas Vera Troeger (2013) used econometric model in his research and showed that the impact of tax competition is intensified in an economy with good infrastructure, high quality human resources, stable politics etc. However, for these countries, the choice of whether to reduce corporate income tax or to apply tax incentives to improve competitiveness depends on the consideration for the fairness of the tax system, budget constraints and economic characteristics of a country. Nguyen Van Hieu (2008) held that when administrative procedures are not loosened and the investment environment is different belong to special regional characteristics, the tax rate is not the main determinant factor to international investment flows. In the context of increasingly open investment environment and practices, tax rates are an important factor affecting investment decisions.

3.3. Key elements of tax competitiveness

Because tax obligations have a direct impact on corporate profits, investors 'profits and workers' income, the main elements that determine tax competitiveness include:

- **Tax rate:** Tax rate is the most important factor determining tax payable of taxpayers. Supposed other factors remain unchanged, the lower the tax rate is, the higher the profit the business and the taxpayer earn, and vice versa. In tax competition, the tax that is often considered first to reduce the tax rate is corporate income tax because this tax has a direct impact on the income of investors then also affects to the decision of domestic and foreign investors. In addition, the personal income tax rate on salaries, wages and capital and securities transfers also has certain impacts on the competitiveness of the tax system.

- **Tax incentives:** Tax incentives are obviously beneficial for businesses that enjoy incentives, and thus have an impact on the interests of investors. The tax incentives selected for tax competition mainly focus on corporate income tax, including many forms of incentives such as: Preferential tax rates; tax holiday; tax exemption; double deduction for corporate income tax purpose; tax refund for reinvestment etc.

- **Tax procedures:** Tax procedures that are directly related to the taxpayer's tax compliance costs should be a factor in determining the competitiveness of the tax system. Tax procedures include documents that must be kept for tax purposes, tax returns, tax declaration and payment methods and procedures etc. To measure compliance costs related to tax procedures, WB measures time to comply 3 major taxes (value added tax, corporate income tax and personal income tax) including: time required to collect information, to compute tax payable, to prepare separate tax accounting books, if required, to complete tax returns, to file with agencies, to arrange payment or withholding. Thus, the simpler and more modern the tax procedures are, the less tax declaration frequency is, the less time to pay tax is, the lower the tax compliance cost is, the higher the tax competitiveness is, and vice versa.

3.4. The impact of tax competition

3.4.1. The positive effects of tax competition

Firstly, tax competition has the effect of attracting both domestic and foreign investment. That is, under the same conditions of other factors, tax becomes a good competitive factor that attracts many foreign enterprises to invest and also encourages domestic investors to invest, restricts capital outflow (Nguyen Van Hieu, 2008). The reason that tax competition can attract domestic and foreign investment is that the attractiveness of low tax rates and tax incentives that increase the investment value and investors' income in terms of other unchanged factors.

Secondly, tax competition makes governments lose their monopoly position and pay more attention to international policies and practices (Nguyen Van Hieu, 2008). Tax competition means that the tax systems of countries in comparison with other countries are more competitive. When a country is in danger of flowing capital to another country, the government is forced not only to consider tax reduction measures or tax incentives, but also to pay more attention to the transparency of tax laws and simplify and modernize tax procedures. In addition, tax competition

has the effect of reducing budget revenues in the short term, so governments are forced to improve budget spending efficiency, manage budget effectively, avoid loss and waste of resources to both meet the demand of government expenditure and stimulate economic growth.

Thirdly, tax competition with a low tax rate reduces the additional tax burden. Nguyen Van Hieu (2008) said that the lightly reduced tax rate will encourage businesses and individuals to voluntarily comply with the provisions of the tax law without having to find all measures to evade or avoid tax. Collection costs can therefore be reduced, and at the same time, corruption will also be limited. A study by Vera Troeger (2013)'s econometric model demonstrates that, for an economy of moderate size, tax revenues can increase when the government significantly reduces the effective tax rate.

3.4.2. The challenges of tax competition

Firstly, there is a risk of excessive budget revenue reduction. Increasing tax competitiveness by reducing tax rates and widespread application of tax incentives results in a decrease in revenue both due to lower tax rates and narrow the tax base. At the same time, due to the existence of tax incentives, some enterprises can take advantage of tax incentives to tax avoidance and tax evasion. Transfer pricing, including both domestic and international, has an opportunity to develop. This reduces state budget revenue and, if tax rates are reduced too much and tax incentives are applied too wide can lead to a serious reduction in state budget revenues. In turn, an excessive reductions in the budget may result in the state's inadequate financial resources to support development investment and implementation of social security policies and the inevitable consequences are a reduction in the competitiveness of the economy and social instability.

Secondly, there is a risk of increases in inequality in society. Nguyen Van Hieu (2008) pointed out that, due to the pressure of global tax competition, countries are forced to cut the highest marginal tax rates (especially personal income tax) and reduce tax progression. Therefore, the income redistribution capacity of the tax system is narrowed. Moreover, the tax burden will be gradually shifted to other factors of production that are not or less mobile like the low-educated working class, land, and real estate. The tax burden on capital gains will decrease, taxes on capital mobility and income will be narrowed and gradually eliminated. Normally, people with high income earn mainly from capital interest, low income people earn mainly from labor. Therefore, shifting the tax burden from capital to labor, from highly skilled workers to low-skilled workers also means shifting the tax burden from high-income earners to low-income earners.

Thirdly, there is the risk of a decrease in the overall efficiency of the world economy. Excessive tax incentives and too low tax rates can lead to capital inflows to countries where have low productivity, low capital efficiency and low quality of human resources. It means that the risk of a "race to the bottom" can distort investment decisions and reduce the overall efficiency of the world economy.

4. THE TENDENCY OF TAX COMPETITION IN RECENT YEARS AND FUTURE FORECAST

Tax competition began to appear in the late 80s of the twentieth century. Over the past 30 years, tax competition has a period of quite strong flare-up with the trend of reducing corporate income tax in a long period in many countries around the world, a period of slowing down for a while, and then reappearance.

The study of Vera Troeger (2013) showed that, from 1986 to 2004, the marginal tax rate of corporate income tax of 23 OECD countries decreased by about 14% but remains at an average rate of approximately 30%.

Nguyen Van Hieu (2008) statisticed the changes in personal income tax rates of 26 OECD countries from 1985 to 2005 and showed that the personal income tax rates of these countries decreased by 28% from the average rate of 63% in 1985 to the average rate of 35% in 2005, in which the average tax rates for the years 1990, 1995, 2000 and 2005 were 53%, 50%, 40% and 35% respectively.

Philip Bazel, Jack Mintz and Austin Thomson (2018) reported the change in corporate income tax rates of 92 countries from 2005 to 2017, then averaged by country group with two averages: a simple average and a GDP - weighted average basis. Calculated results are shown in the table below:

Corporate income tax rates on average in some groups of countries in the world from 2005 to 2017

	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006	2005
G7	30.2	30.8	31.1	31.7	31.9	32.6	32.8	33.1	33.4	33.5	36.2	36.2	36.3
G7 _w	33.9	34.2	34.5	35.3	35.4	36.1	36.2	36.3	36.4	37.8	37.8	37.8	37.9
G20	28.3	28.5	28.6	28.8	28.9	29.2	29.1	29.3	29.6	29.9	30.9	31.0	31.5
G20 _w	31.9	32.1	32.3	32.6	32.9	33.4	33.4	33.5	33.5	33.6	34.8	34.8	35.0
OECD	24.7	24.8	25.3	25.5	25.7	25.7	25.8	25.9	25.9	26.1	27.2	27.7	28.2
OECD _w	31.7	31.9	32.3	32.9	33.0	33.6	33.6	33.7	33.7	33.9	35.1	35.3	35.6
Africas	28.7	28.7	28.7	28.6	28.9	29.7	29.6	29.7	29.7	29.8	30.2	30.5	31.5
Africas _w	29.5	29.5	29.5	29.6	29.7	29.8	29.8	29.8	29.8	29.8	30.2	30.5	31.0
Americas	28.3	28.2	27.9	27.8	28.0	28.1	28.3	28.2	28.3	28.4	28.8	29.5	30.0
Americas _w	37.2	37.1	37.1	37.1	37.1	37.0	37.2	37.3	37.2	37.4	37.6	37.7	37.4
Asia-Pacific	24.9	25.1	25.3	25.6	25.9	27.2	27.0	27.2	27.6	29.0	29.2	29.4	29.7
Asia-Pacific _w	29.1	29.1	29.8	30.7	30.7	31.6	31.2	31.5	31.8	32.9	33.1	33.1	33.8
EU	22.1	22.3	22.7	22.7	22.9	22.9	22.9	23.0	23.0	23.2	14.1	24.7	25.0
EU _w	26.1	26.6	26.9	27.2	27.6	26.1	28.0	28.2	28.2	28.3	31.1	31.6	31.8
Middle East and North Africa	19.8	19.9	20.1	20.1	20.0	22.4	19.4	19.5	22.8	22.9	26.1	26.3	30.7
Middle East and North Africa _w	20.8	20.9	21.1	21.4	21.3	22.1	20.6	20.9	22.3	22.4	22.5	24.8	29.1
Average of 92 countries	24.7	24.8	25.0	25.2	25.8	25.5	25.6	26.6	26.0	26.4	27.4	27.9	28.6
Average of 92 countries _w	30.4	30.6	30.9	31.4	31.5	32.0	31.9	32.0	32.1	32.3	33.4	33.6	33.7

[*Note:* The symbol “_w” represents the GDP - weighted average basis tax rate (in %). If there is only the country group name without the symbol “_w”, it is simple average tax rate (in %).].

The table above shows that, in the period from 2005 to 2017, the corporate income tax rate has decreased slightly although the reduction of different groups of countries is not the same. Compared to 2005, for G7 countries, the simple average tax rate in 2017 decreased by 6.1%, while the GDP - weighted average basis tax rate decreased by 4%. For the G20 countries, the respective reductions are 3.2% and 3.1%; for OECD countries, the reductions are 3.5% and 3.9%, respectively; for the Americas, the reduction was 0.5% and 0.2%, respectively.

Although the trend of the average rate is decrease in corporate income tax rate and most of countries in the world reduced its tax rate from 2005 to 2017, the number of reductions and the degree of reduction are different. Besides, there are still countries alternately increase and decrease, or keep or even increase, as follows:

- Some countries adjusted to reduce their tax rate once and then remained unchanged until 2017, for example, Hong Kong reduced from 17.5% to 16.5% in 2006; Georgia decreased from 20% to 15% in 2008. Some countries adjusted down twice during this period such as: Germany decreased from 38.9% to 30.2% in 2008 and to 29.7% in 2015; Singapore decreased from 20% to 18% in 2006 and further down to 17% in 2010; Indonesia decreased from 30% to 28% in 2009 and decreased further to 25% in 2010; Thailand decreased from 30% to 27.6% in 2012 and continued to decrease to 20% in 2013.

- Some countries had a 4-time reduction in this period such as: Malaysia decreased from 28% to 27% in 2007, 26% in 2008, 25% in 2009 and 24% in 2016.

- Some countries adjusted to increase or decrease alternately during this period such as: the US decreased from 39.3% to 39.1% in 2009, increased to 39.2% in 2010 and kept this level in 2011 and then decreased to 39.1% in 2012 and keep the same until 2017; France decreased from 35% to 34.4% in 2006, increased to 36.1% in 2011, decreased to 34.7% in 2012, increased again to 36.1% in 2013, increased to 36.9% in 2014, increase further to 38% in 2015 and keep the same until 2017; Jordan decreased from 21.8% to 14.9% in 2010, increased to 21.6% in 2012, decreased to 14.9% in 2013, then increased to 19.1% in 2015 and remained the same until 2017 etc.

- Some countries kept the corporate income tax rate unchanged such as: Australia (30%), Austria (25%), Canada (34%), Ireland (12.5%), Poland (19%), Latvia (15%) etc.

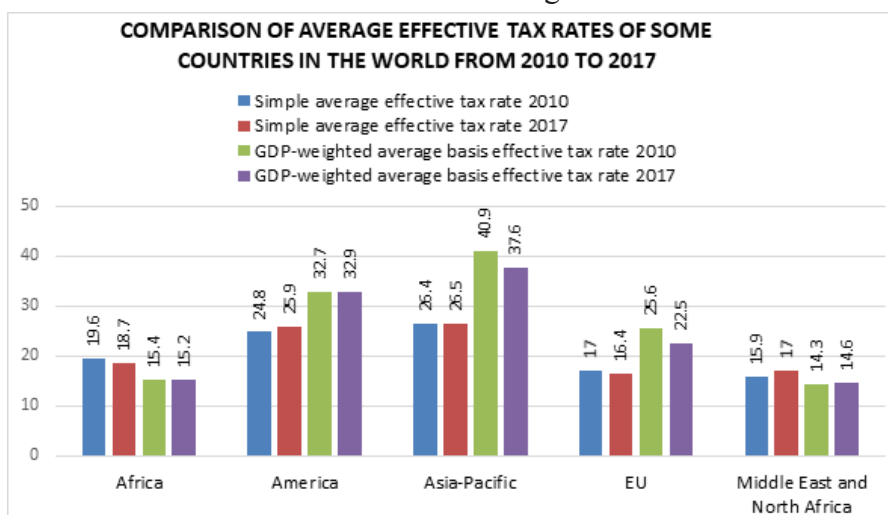
- In particular, Botswana increased tax rate from 21.4% to 22% in 2016.

Thus, although the decrease in corporate income tax rates varies between groups of countries, the reduction in corporate income tax rates of countries in the world in the period from 2005 to 2017 is generally lower than the period before 2005.

In addition to competing by reducing corporate income tax rates, some countries also apply tax incentives popularly such as: applying preferential tax rates lower than the common tax rate for some investment sectors or for small and medium enterprises; tax exemptions for certain incomes; tax holiday for new investment projects. Moreover, the tax administration capacity of countries is also different, so the nominal tax rate does not accurately reflect the actual tax obligations of the business. Therefore, some studies have used effective tax rates to assess the tax burden on businesses. The effective tax rate is the tax rate calculated on the corporate income tax liability that

an enterprise actually has to pay. In terms of tax competition, the effective tax rate will show more clearly the degree of tax competitiveness of a country because it takes into account the amount of taxes reduced by tax incentives and the efficiency of tax administration.

Philip Bazel, Jack Mintz and Austin Thomson (2018) compared the effective tax rates of many groups of countries around the world by two indicators, the simple average effective tax rate and the GDP - weighted average basis effective tax rate in the period from 2010 to 2017, then, they showed that the trend of tax rate reduction did not happen equally among countries, some groups of countries have reduced strongly, some groups of countries have decreased slightly and some groups of countries remains unchanged in the world. For Asia-Pacific countries, the simple average effective tax rate in 2017 increased slightly compared to 2010 (26.5% compared to 26.4%), the GDP - weighted average basis effective tax rate decreased from 40.9% in 2010 to 37.6% in 2017. For European countries, the simple average effective tax rate decreased from 17% in 2010 to 16.4% in 2017, meanwhile, the GDP - weighted average basis effective tax rate decreased from 25.6% in 2010 to 22.5% in 2017. For some other countries and groups of countries, the change of effective tax rate is shown in the following chart:



(Source: Philip Bazel, Jack Mintz and Austin Thomson, 2018)

Also according to the research of Philip Bazel, Jack Mintz and Austin Thomson (2018), in the longer term, the simple average effective tax rate and the GDP-weighted average basis effective tax rate for the period from 2005 to 2017 shown in the table below:

The average effective corporate tax rate of some group of countries in the world from 2005 to 2017

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
G7	35.6	34.9	34.4	31.7	31.6	30.5	30.2	30.1	28,7	27.3	26.4	26.2	26.2
G7 _w	36.3	36.0	35.8	34.4	34.3	33.9	33.7	33.8	33,0	32.4	31.7	31.5	31.5
G20	31.4	30.3	30.2	29.1	27.9	26.8	26.7	26.7	26,2	25.4	25.1	25.5	25.5
G20 _w	36.3	35.9	35.8	34.8	31.8	31.4	31.3	31.4	30,8	30.3	29.8	29.8	29.8
OECD	20.9	20.2	19.6	18.6	18.4	18.2	18.2	18.1	18,0	17.8	17.3	17.3	17.3
OECD _w	32.4	32.0	31.6	30.4	30.2	30.0	29.9	29.9	29,3	28.3	28.2	28.0	28.0
Africas	19.1	18.1	17.9	17.6	17.5	17.5	17.5	17.6	17,0	16.7	16.4	16.4	16.4
Africas _w	15.5	15.2	15.0	14.7	14.7	14.7	14.7	14.7	14,7	14.4	14.3	14.3	14.3
Americas	26.0	24.9	24.6	24.1	23.9	2.5	22.9	23.5	23,6	22.6	22.6	23.6	23.6

Americas _w	34.3	34.0	33.5	33.2	33.2	32.6	32.6	32.4	32.6	32.5	32.3	32.5	32.5
Asia-Pacific	26.3	26.3	26.4	26.2	23.4	23.1	23.3	23.2	22.5	22.2	23.6	23.5	23.5
Asia-Pacific _w	40.6	40.5	40.7	40.7	32.1	32.0	32.0	32.1	31.4	31.2	30.6	30.4	30.4
EU	17.5	16.9	16.5	15.6	15.3	15.3	15.2	15.2	15.1	14.6	14.9	14.9	14.9
EU _w	27.6	27.0	26.8	24.1	23.8	23.7	23.6	23.7	22.6	21.3	20.6	20.6	20.6
Middle East and North Africa	21.8	20.9	20.8	16.4	16.3	13.7	13.7	16.0	13.7	13.8	14.4	14.3	14.3
Middle East and North Africa _w	17.1	15.1	14.9	13.2	13.1	12.1	12.0	12.9	11.9	12.0	12.0	11.9	11.9
Average of 92 countries	21.6	20.9	20.7	19.7	19.0	18.6	18.7	18.9	18.3	17.9	18.3	18.5	18.5
Average of 92 countries _w	33.2	32.8	32.6	31.6	29.1	28.8	28.7	28.7	28.2	27.8	27.3	27.3	27.3

[**Note:** The symbol “_w” represents the GDP - weighted average basis tax rate (in%). If there is only the country group name without the symbol “_w”, it is simple average tax rate (in%).]

The two tables of data on average tax rate and average effective tax rate show that, in the period from 2005 to 2017, the simple average effective tax rate of the G7 group decreased by 9.4% (while the nominal tax rate decrease of 6.1%), the GDP weighted average effective tax rate of the G7 is reduced by 4.8% (while the nominal tax rate is reduced by 4%). For the G20 group, the simple average effective rate is reduced by 5.9% (while the nominal tax rate is reduced by 3.2%); the GDP-weighted average effective tax rate decreased by 6.5% (while the nominal tax rate decreased by 3.1%). For OECD countries, the simple average effective tax rate is reduced by 3.6% (while the nominal tax rate is reduced by 3.5%); The GDP-weighted average effective tax rate decreased by 4.4% (while the nominal tax rate decreased by 3.9%). For the Americas, the simple average effective rate is reduced by 2.4% (while the nominal tax rate is reduced by 0.5%); The GDP-weighted average effective tax rate decreased by 1.8% (while the nominal tax rate decreased by 0.2%). This means that, for all groups of countries studied, the average effective tax rate always falls more than the reduction of the average nominal tax rate. As discussed above, this is explained by the fact that countries have adopted tax incentives to increase the competitiveness of their tax systems. The above analysis shows that the trend of reducing tax rates to compete is still going on but gradually decreasing; at the same time, the use of tax incentives to compete is still popular in many countries around the world.

Statistics of corporate income tax rate of KPMG (2020) show that, compared to 2017, the average corporate income tax rate in 2019 of most groups of countries has decreased very little. Specifically as follows: On a simple average, the average tax rates of countries in the European Union in 2019 decrease by 0.21% compared to 2017; American countries in 2019 decreased by 1.08% compared to 2017; America - Latin countries in 2019 decreased by 0.74% compared

to 2017; OECD countries in 2019 decreased by 0.6% compared to 2017. Among which, most countries kept the tax rates in 2018 and 2019 compared to 2017. Some countries reduced their tax rates and a few increased tax rates.

The above practical data shows that, in the coming time, it is difficult for countries to continue a “race to the bottom” of tax rates for tax competition, although some countries still reduce corporate income tax and apply tax incentives to increase their tax competitiveness. This is also appropriate with tax competition theory, because when reducing tax rates in tax competition, countries always have to take into account its consequences such as reducing budget revenues, ensuring the fairness of the tax system etc. Besides, tax competition is only one of the constituent elements of national competitiveness. To attract investment and high-quality labor, to improve national competitiveness, countries must take into account the synchronization of other equally important constituent factors of national competitiveness.

5. THE VIETNAMESE TAX SYSTEM IN TERMS OF TAX COMPETITION

5.1. Evaluating key elements of tax competition

Corporate income tax rate: Vietnam’s corporate income tax rate decreased from 32% to 28% (2004), to 25% (in 2009), to 22% (2014) and 20% (2016). Thus, in 2003, Vietnam’s tax rate was higher than the Asian average (30.19%); in 2004 was lower than the Asian average (30.55%); 2009 was lower than the Asian average (25.37%); 2014 was equal to the Asian average (22%) and in 2019 lower than the Asia average (21.09%). Comparing current tax rates with other countries in the region, Vietnam’s corporate income tax rate is higher than Singapore (17%), Hong Kong (16.5%); equal to Thailand; lower than the Philippines (30%), Indonesia (25%), Burma (25%), China (25%), Malaysia (24%). Further comparison of current corporate income tax rates with countries investing heavily in Vietnam shows that: Vietnam’s tax rates are lower than those of Japan (30.62%), South Korea (25%), China (25%); higher than Hong Kong (16.5%), Singapore (17%). Thus, in terms of competition in corporate income tax rates, the Vietnamese tax system is relatively competitive.

Personal income tax rate: Before the promulgation of the 2007 Personal Income Tax Law, which took effect from 1 January 2009, the Vietnamese personal income tax rate on wages ranged from 10% to 50%. Since 1 January 2009, the personal income tax rate on employment income in Vietnam has 7 brackets from 5% to 35%. This tax rate has remained stable from 2009 up to now. Compared to other countries in the region, the tax rates of Vietnam are slightly higher than those of Indonesia (5% to 30%), Singapore (3.5% to 20%); slightly lower than Thailand (5% to 37%), China (3% to 45%). Thus, Vietnam’s personal income tax rate is moderately competitive.

Tax incentives: Vietnam’s tax incentives have changed quite a bit over the past 20 years. From 2004 to 2008, there was a big change in corporate income tax incentives, shifting from specific incentives for foreign-invested enterprises to general incentives for all types of businesses with a wide range of forms: preferential tax rates, tax holiday and tax exemptions for some incomes. Since 2009, the preferential objects were narrowed down, but they were gradually expanded and kept so up to now after some modifications in 2013 and 2014. The level of incentives in Vietnam is quite a lot. There are preferential rates of 10%, 15% and 17% while the standard tax rate is 20%. Tax holiday for some specific cases can last up to 13 years. The most significant change in

tax incentives during this period that made the incentives to be more effective is to shift from the incentives for newly established businesses in a preferential investment field or area to incentives for income earned from new (or expanded) investment projects in a preferential investment field or area since 2014. Thus, in terms of tax competition, Vietnam's tax incentives are very competitive, but there are excessive and redundant incentives which significantly narrows the tax base.

Tax procedures: In the past 20 years, Vietnam's tax administrative procedures have been continuously reformed towards a simple, convenient and modern tax administration. The most significant reforms include cutting down tax filing records, reducing the frequency of value-added tax returns since 2013; abolishing the quarterly declaration of temporary corporate income tax payment from 2014, deploying two-dimensional barcodes for tax returns from 2009, applying electronic tax declaration from 2013 and electronic tax payments from year 2014. These actions have had great impacts on Vietnam's tax payment index according to the World Bank's assessment as will be presented below.

5.2. Evaluation the Vietnamese tax competitiveness according to WEF and WB's criteria

5.2.1. Accessing by WB

In the report on the global investment and business environment of the World Bank (Doing Business), Vietnam's paying taxes indicator from 2015 to 2020 ranked according to the rankings of the surveyed countries as follows: 173/189, 168/189, 167/189, 86/190, 131/190 and 109/190 respectively. Particularly, the indicator of tax payment hours has decreased from 1.487 hours in 2009 to 537 hours in 2015 and down to 351 hours per year in 2018 and kept this level up to the World Bank report in 2020. Thus, it can be seen that Vietnam's paying taxes indicator tends to increase but is not stable according to WB. Compared to other countries in the ASEAN region, apart from 2018 - the year that Vietnam ranked 4th in the region (behind Singapore, Malaysia, Thailand; ranked higher than Indonesia), in the remaining years Vietnam was outside the top 4- country that has the best paying taxes indicator in ASEAN. While our tax rate scores are quite good, the score of the tax payment hours and social insurance criteria is relatively low. This is the main reason why Vietnam's paying taxes indicator has not been ranked highly in the World Bank report.

5.2.2. Accessing of WEF

According to WEF's assessment, Vietnam's tax competitiveness index ranked in the list of surveyed countries in the period from 2015 to 2019 as follows: 86/148, 86/140, 130 / 138, 76/137 and 105/141. Thus, in terms of ranking, Vietnam's tax competitiveness index is in the low average group, even at a very low ranking in 2017.

6. POLICY IMPLICATIONS FOR VIETNAM

From the trend of tax competition in the world in recent years and the forecast of tax competition in the coming time, based on the current situation of determinants of Vietnam's tax competition and other conditions, it is possible to recommend some policy implications to ensure Vietnam's tax competitiveness as follows:

Firstly, among the elements that determine the competitiveness of the tax system, the corporate income tax rate and tax incentives of Vietnam have a competitive advantage over other countries. Compared to other countries in the region and countries that have a lot of investors in Vietnam,

Vietnam's corporate income tax rate is only higher than that of Hong Kong and Singapore. However, the amount of FDI capital from countries with lower tax rates than Vietnam still enters Vietnam quite a lot. Thus, Vietnam's corporate income tax rate is not too disadvantageous for investors in these countries because they can enjoy many other greater benefits when investing in Vietnam. This implies that, in terms of FDI attraction, while the trend of reducing corporate income tax rates in tax competition is still going on with a slowing trend, Vietnam should not continue increasing competitiveness by reducing corporate income tax rates in the coming time. In addition, continuing reduction in corporate income tax rates will put pressure on state budget revenues, forcing us to increase tax rates of other taxes or not have enough resources to carry out tasks of government expenditure. Increasing the personal income tax rate is impossible because it is already quite high. Increasing indirect tax will affect the fairness of the tax system. Moreover, any possibility of a tax increase is adversely affected politically. This means that corporate income tax rate should not be increased in the coming time.

Secondly, it is necessary to narrow tax incentives and review the overall tax incentives to remove excessive and redundant incentives because in terms of tax competition, our tax incentives compared to other countries are too much and because of wide incentives lead to the following disadvantages: (1) Excessive incentives lead to meaningless budget loss due to if there are no incentives, investors will still invest in that sector or area; (2) Narrowing the tax base and leading to a loss of state budget revenue while the revenue from import tax is decreasing due to the implementation of free trade agreements, so it is necessary to expand the tax base to compensate; (3) The incentives are too wide to create opportunities for tax evasion, tax avoidance and transfer pricing activities. Simultaneously, it is necessary to reform tax incentives in the direction of replacing tax holiday with more effective forms of tax incentives such as tax credit, double deduction of expenses etc.

Thirdly, it is necessary to adjust Vietnam's personal income tax rate in the direction of reducing the number of tax rates in the progressive table and reducing the highest tax rate from 45% to 35% to improve competitiveness of personal income tax, contributing to attracting high-quality labor to work in Vietnam.

Finally, although, in recent years, Vietnam has made many achievements in tax administrative procedure reform, but compared to other countries in the region, the tax administrative procedures are not as convenient as other countries, the Vietnam's paying taxes indicator are still high according to the World Bank's assessment, the compliance cost is still high which resulted in the fact that Vietnam has not yet reached to the top 4 of ASEAN. This means that, in the coming time, in order to improve tax competitiveness, Vietnam must continue to promote further tax administrative procedure reform. Accordingly, the key issues are: to continue to reduce unnecessary tax records and procedures; to link data between tax authorities and other state agencies for fast tax processing; to improve the convenience of electronic tax filing and electronic tax payment, to adopt electronic tax procedures for all taxes and all tax transactions; to narrow the differences between accounting standards and tax laws to make use of accounting data for tax computation etc.

CONCLUSION: By systematizing the theoretical basis of tax competition, analyzing and forecasting tax competition trends of countries around the world in the coming time and evaluating

the competitiveness of Vietnam's tax system in comparative correlation with other countries all around the world, we have proposed four policy implications for Vietnam related to three determinants of tax competitiveness. However, this study has not applied a quantitative economic model to measure the impact of Vietnam's tax competition elements on domestic investment and FDI attraction, and has not yet clearly quantified the importance of each elements that determine the competitiveness of the Vietnamese tax system. These are the issues that need to be clarified in the next researches.

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SUSTAINABLE GROWTH RATE: EVIDENCE FROM PHARMA AND TRANSPORTATION CONSTRUCTION ENTERPRISES IN VIETNAM

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Abstract: *The main purpose of this paper is to show a sustainable growth rate in 2018 and 2019 for 44 enterprises in Viet Nam belonging to the transportation construction and pharma sectors. Likewise, this paper is concerned with the comparison of the enterprise sustainable growth rate per stated sectors, the determination of existence of possible differences in their height in 2019 in relation to 2018 and with an overview of inflation effect on sustainable growth rate in selected sectors based on comparative analysis.*

Research results indicate that there was no real sustainable growth in transportation construction sector in both 2018 and 2019, while pharma sectors have better market expectation and growth opportunities.

Keywords: *sustainable growth rate, dividend payout ratio, return on equity, inflation rate*

1. Introduction

The main task of sustainable growth rate model, which is presented by Higgins (1997) is to enable managers to determine the optimal level of enterprise growth through weighting its financial targets and operational performances. He proposed the use of sustainable growth rate as a maximal growth rate in sales that an enterprise can achieve while maintaining a given set of financial policies. Besides, an extremely important task of sustainable growth rate model is to enable regulators to stimulate sustainable growth of particular industry by issuing suitable policies

There has not been many of researches regarding determination of sustainable growth rates of enterprises conducted in Viet Nam. Therefore, in this paper, the calculation of sustainable growth rates in 2018 and 2019 for 44 enterprises in Viet Nam that belong to transportation transportation construction and pharma sectors will be presented.

The transportation construction and pharma sectors were selected because transportation construction is a the industry for the development of the transportation system, which is considered as the lifeblood of the economy, and have a vital supporting function for economic development. Meanwhile, pharmaceuticals is a the industry for human health, ensuring human resources for social development. Both sectors contribute to the basic foundations of the country's socio-economy.

The main goal of this paper is to determine sustainable growth rates of transportation construction and pharma sectors and to check whether they are in accordance with the development possibilities of the selected sectors. The following hypotheses are tested in the paper

- Hypothesis 1: There is no significant difference in the level of a sustainable growth rate of those enterprises belonging to the transportation construction and pharma sectors in years of 2018 and 2019.

- Hypothesis 2: There is no significant difference in the level of a sustainable growth rate of those enterprises belonging to the transportation construction and pharma sectors in year 2019 compared to the year 2018.

- Hypothesis 3: An average sustainable growth rate is equal to the rate of inflation measured with the consumer price index in the years of 2018 and 2019.

The rest of the paper is organized as follows: Section 2 shows literature review related to sustainable growth rate and its use. Section 3 gives information about the database which is used for sustainable growth rate calculation, as well as research methodology. Empirical results are presented in Section 4. The last section concludes the paper.

2. Literature review

Higgins (1977) tried to answer the question of how big the growth rate that one enterprise can afford to itself has to be, taking into consideration that an unrestrained growth of the enterprise may be opposite to financial policy of the enterprise. Higgins (1981) also considered an effect of inflation upon a sustainable growth rate, taking into consideration that sales increase may be the result of an increased scope of product or increased price of the product.

McFaddin and Clouse (1993) made research on the companies belonging to US oil and gas utility industries, he developed a model for evaluation of the interdependence of financial objectives, operational performance and sustainable growth rate. McFaddin and Clouse's research covered the period from 1972 to 1989 and compared results of the new model with actual growth rates as well as with the Higgins sustainable growth rates model. Research results have shown that McFaddin and Clouse's model represents a better tool for evaluation of sustainable growth rate and for directing policies that stimulate growth in oil and gas industries.

Clouse and McFaddin's research (1994), focused on the US gas utility industry from 1970 to 1990, tried to find out the relationship between the real and sustainable growth rates. The conclusion of the paper is that the potential for sustainable growth of the US gas utility was reflected through future stock issues, operational improvements and changes in financial objectives. They also concluded that the sustainable growth model represented an effective tool in financial planning and business policy addressing stimulation of growth in the US gas utility industry.

Platt et al. (1995) proposes a formula to calculate the sustainable growth rate for companies in financial distress, presenting a tool for assessing turnaround performance of companies in financial distress and a mean of control of its actual growth rate. Platt's formula describes how much growth a company that has limited or no access to financial markets can endure.

Amouzesh et al. (2018) investigated the relationship between deviation of the actual growth rate from the sustainable growth rate, on one hand, and return on assets, price to book value, current ratio and acid ratio, on the other hand by using data of 54 companies listed in the Iran financial market, the authors noticed a significant connection between deviation of the actual growth rate from the sustainable growth rate and return on assets, as well as a significant con-

nection between the deviation of the actual growth rate from the sustainable growth rate and price to book value ratio.

Huang Xiyuan and Uhang Jingui (2015) determined sustainable financial growth of the companies listed on Growth Enterprises Market and determine factors that influenced sustainable growth the most. Their research results clearly showed that profitability was the most influential factor which impacted sustainable growth.

M.M. Fonseka et al. (2019) compared the Higgins model with the Van Horne model in order to determine which model is more suitable for determination of sustainable growth rate. They found that profitable enterprises sustainable growth rate based on Higgins' model is higher compared to the sustainable growth rate determined by application of the Van Horne's model. On the other hand, they also determined in their research that in enterprises with high leverage the Van Horne's model gives a higher sustainable growth rate in relation to the Higgins' model. However, the authors concluded that differences in models are not significant and that both tested models are equally suitable for use by the managers and researchers.

3. Data and Methodology

The database, according to which a sustainable growth rate calculation is made, consists of 44 enterprises from Viet Nam, whose shares are traded on the HOSE, HNX and UPCOME stock market, 22 enterprises from transportation construction and 22 enterprises from pharma sector.

The data on the inflation rate level measured with the consumer price index for 2018 and 2019 have been taken from the web site of the Ministry of Finance of the Viet Nam.

In sustainable growth rate determination, the following formula is used:

$$\text{SGR} = \text{Retention} \times \text{ROE}$$

$$= (1 - \text{DPR}) \times \text{Return on Sale} \times \text{Sale on Asset} \times \text{Asset on Equity}$$

Where:

- + SGR is Higgins sustainable growth rate,
- + Retentio is the plowback ratio;
- + DPR is dividend payout ratio;
- + Return on Sale is Return to Sale Ratio;
- + Sale on Asset is Sale to Asset Ratio;
- + Asset on Equity Total asset to Equity Ratio,

A t-test of independent samples for testing the Hypothesis 1 is used in this paper in order to determine a possible existence of statistically significant difference between the sustainable growth rate of the enterprises belonging to the chosen sectors in 2018 and 2019.

A paired samples t-test is used for testing the Hypothesis 2, i.e., for determination of possible statistically significant difference in the level of the sustainable growth rate of pharma and transportation construction enterprises in 2019 in relation to 2018.

Based on one-sample t-test the Hypothesis 3 is tested in order to determine if there is a statistically significant difference between an average sustainable growth rate of the pharma and transportation construction enterprises and the rate of inflation in 2018 and 2019.

All calculations are done in Microsoft Excel 2010 and SPSS.

4. Research results

4.1. Determination of enterprise sustainable growth rate in Viet Nam

This paper brings an overview of results of the sustainable growth rate of the enterprises from the sample, according to the previously shown methodology, per sectors and years.

A sustainable growth rate of those enterprises from the sample, belonging to the pharma sector, is calculated and shown in Table 1 and the sustainable growth rate of those enterprises from the sample, belonging to the transportation construction sector, is calculated and shown in Table 2.

The average SGR of pharmaceutical enterprises has a slight decrease. In term of the stability over the past 2 years of these enterprises, only some enterprises have significant increase or decrease of SGR such as CDP with SGR increase of nearly 8 times, AMV reduces this ratio to a half and DBM doubled this ratio. The largest SGR value belongs to AMV with the 2018 and 2019 ratios of 38.5% and 18.55%, respectively. The enterprises with the lowest SGR in 2018 were TRA and DPP, only about 1% and increased sharply in 2019, this figure was more than 12% and more than 5% for the two businesses respectively.

Analysis of the factors that make up the SGR ratio shows that, in terms of average values, only the average of the group's marginal revenue is increased, there is a decrease for all the remaining factors.

Retained earnings ratio of businesses has changed significantly over the past 2 years, only a few businesses maintained such rates as PMC, DMC, TVP and DP3. The business with the most fluctuating retained profit is CDP, with an increase of nearly 10 times, this is the main reason for the sudden increase of SGR of CDP (8 times).

The profit margins of enterprises are not much different over the years, but they are quite different between different businesses. While there are businesses that maintain this level close to 50%, some other businesses only maintained the ratio at around 1%. This is a pretty big difference. The other firms in the sample have quite a different values of profit margins.

The ratio of turnover to total assets of enterprises is also quite different from company to company. The highest rate belongs to some enterprises with the rate of about 270%, which is 2.7 times higher. In addition, in the businesses examined, many businesses only achieve this ratio at about 70%, meaning the revenue is only about 7 tenth of the total assets.

The ratios of assets to equity of enterprises in the sample do not have significant difference. Enterprises tend to use about half of their equity, so most of this ratio is in the range of 1 to 2. Particularly, some businesses maintain this ratio more than 10 times in both 2018 and 2019, and some businesses keep this ratio is maintained at around 1.1, meaning that enterprises use a lot of equity capital in the total capital. However, it can be said that pharmaceutical enterprises in the sample

using financial leverage are only about 50%, the average ratio of assets to equity of the group is 2.66 for 2018 and 2.53 for 2019.

No.	Stock Symbol	Retention		ROE		Return on Sale		Sale on Asset		Asset on Equity		SGR	
		2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
1	PMC	58.34%	58.77%	24.54%	22.41%	16.20%	16.01%	128.22%	121.00%	118.11%	115.66%	14.32%	13.17%
2	CPC	35.52%	58.89%	15.37%	13.55%	4.13%	4.08%	201.17%	210.74%	185.23%	157.60%	5.46%	7.98%
3	AMV	100.00%	65.46%	38.50%	28.34%	48.69%	46.03%	69.17%	55.89%	114.30%	110.15%	38.50%	18.55%
4	DHT	39.83%	52.85%	30.79%	28.84%	4.98%	4.41%	266.83%	276.64%	231.57%	236.50%	12.26%	15.24%
5	TRA	10.50%	82.29%	15.78%	15.26%	9.72%	9.97%	113.11%	108.84%	143.59%	140.56%	1.66%	12.56%
6	DBD	46.45%	38.63%	18.30%	15.25%	11.63%	11.27%	97.68%	77.86%	161.04%	173.78%	8.50%	5.89%
7	DMC	62.05%	62.68%	20.25%	18.58%	16.52%	15.84%	94.54%	95.78%	129.71%	122.42%	12.57%	11.64%
8	IMP	100.00%	30.84%	9.22%	10.42%	11.71%	11.58%	66.78%	75.92%	117.92%	118.49%	9.22%	3.21%
9	VDP	70.74%	42.61%	12.63%	10.46%	10.79%	7.18%	79.58%	93.42%	147.07%	155.90%	8.93%	4.46%
10	PME	51.03%	52.96%	17.33%	16.42%	18.47%	17.38%	78.51%	80.24%	119.48%	117.77%	8.84%	8.70%
11	OPC	41.61%	41.19%	16.10%	14.72%	10.05%	10.23%	84.28%	83.84%	189.99%	171.60%	6.70%	6.07%
12	DHD	87.38%	83.22%	11.81%	28.65%	4.49%	14.00%	114.57%	106.24%	229.58%	192.58%	10.32%	23.85%
13	DBM	25.00%	50.72%	11.77%	12.11%	2.50%	2.66%	273.22%	276.10%	172.47%	165.22%	2.94%	6.14%
14	DDN	100.00%	100.00%	9.96%	9.85%	0.99%	0.97%	181.96%	190.35%	550.55%	532.50%	9.96%	9.85%
15	YTC	38.79%	40.25%	24.93%	25.24%	2.66%	2.97%	68.85%	67.77%	1360%	1255%	9.67%	10.16%
16	CDP	4.20%	36.65%	11.80%	1522 %	0.80%	10.86%	169 %	163%	868%	858%	0.50%	55.79%
17	DPP	10.82%	37.89%	11.87%	13.20%	1.99%	2.07%	276.06%	314.43%	215.85%	202.30%	1.28%	5.00%
18	AGP	100.00%	37.69%	18.60%	13.36%	7.72%	6.08%	90.20%	86.36%	267.14%	254.52%	18.60%	5.04%
19	TVP	41.86%	39.99%	16.19%	51.63%	9.67%	29.77%	109.63%	125.14%	152.64%	138.60%	6.78%	20.64%
20	DPH	80.98%	74.01%	11.89%	11.19%	7.77%	6.75%	107.03%	114.14%	143.04%	145.29%	9.63%	8.28%
21	DVN	100.00%	63.50%	7.75%	8.11%	3.44%	4.02%	105.02%	99.71%	214.71%	202.36%	7.75%	5.15%
22	DP3	45.21%	46.87%	44.27%	27.42%	16.99%	20.14%	196.48%	111.27%	132.59%	122.37%	20.01%	12.85%
	AVER	56.83%	54.45%	18.17%	24.87%	10.09%	11.56%	135.11%	133.41%	271.15%	258.67%	10.20%	12.28%

Table 1: The pharma enterprises sustainable growth rates in 2018 and 2019

Note: Compiled by the author.

SGR rate of the group of transport transportation construction enterprises is generally much lower than that of pharmaceutical enterprises. The highest level that these enterprises achieved is only about 10% and only 3 enterprises in the sample reached this rate, besides, many enterprises only achieved this rate of about 0.1%. The enterprises in the sample have a relatively large difference in the ratios

Analysis of the factors that make up the SGR ratio shows that, in terms of average values, only the ratio of revenue to total assets has the largest volatility (up from 8.67% to 11.39%), retained profit ratio fluctuated from 0.76 to 0.72, and the ratio of assets to equity fluctuated from 3.8 to 3.7.

Retained profitability ratios of the enterprises have a great difference over the years and there is a big difference for businesses in the same industry. Nearly half of the companies in the sample chose not to pay dividends in 2018 or 2019. There are 6 businesses that maintain 100% profit retention for the business production of the following year in both year. Some enterprises have the very low retained profit rate of 0.34 in 2018 and in 2019, the lowest level retained by businesses in the group is 0.21. None of the businesses in the sample implemented a 100% payment policy.

The proportion of marginal revenue of businesses has increased over the past 2 years, but many businesses witnessed a big change in this ratio. Particularly, there are businesses with a decrease or increase up to 10 times. The company has a stock symbol LTU, the rate of marginal revenue decrease from 0.23% to 0.02% and the company with DGT stock symbol has increased by more than 20 times, mainly because DGT's profit has doubled (we can see that through its EPS value)

No.	Stock Symbol	Retention		ROE		Return on Sale		Sale on Asset		Asset on Equity		SGR	
		2018	2019	2018	2019	2018	2019	2018	2019	2018	2019	2018	2019
1	PMC	35.17%	19.29%	10.11%	10.13%	10.83%	5.89%	26.45%	73.70%	353.03%	233.34%	3.56%	1.95%
2	CPC	100.00%	100.00%	2.79%	2.79%	8.01%	8.01%	12.06%	12.06%	288.74%	288.74%	2.79%	2.79%
3	AMV	59.33%	100.00%	8.74%	5.99%	14.01%	28.78%	20.70%	6.20%	301.36%	335.96%	5.18%	5.99%
4	DHT	100.00%	59.33%	0.15%	8.74%	0.11%	14.01%	20.09%	20.70%	693.56%	301.36%	0.15%	5.18%
5	TRA	82.98%	100.00%	12.86%	5.77%	8.74%	10.54%	60.25%	17.60%	244.19%	310.76%	10.67%	5.77%
6	DBD	100.00%	100.00%	1.39%	0.15%	0.31%	0.11%	64.60%	20.09%	702.93%	693.56%	1.39%	0.15%
7	DMC	100.00%	100.00%	1.16%	1.40%	0.32%	7.31%	73.52%	3.39%	493.45%	566.32%	1.16%	1.40%
8	IMP	34.35%	82.98%	15.10%	12.86%	18.16%	8.74%	21.54%	60.25%	386.11%	244.19%	5.19%	10.67%
9	VDP	41.14%	72.50%	13.42%	8.61%	18.70%	6.84%	15.31%	54.74%	468.60%	229.96%	5.52%	6.25%
10	PME	58.58%	100.00%	12.41%	1.39%	7.31%	0.31%	59.15%	64.60%	287.24%	702.93%	7.27%	1.39%
11	OPC	100.00%	6.25%	1.34%	2.63%	0.39%	0.58%	90.80%	66.44%	378.92%	685.44%	1.34%	0.16%
12	DHD	100.00%	100.00%	7.96%	13.97%	45.06%	74.35%	6.59%	6.51%	268.10%	288.57%	7.96%	13.97%
13	DBM	100.00%	100.00%	4.88%	1.04%	1.60%	0.27%	49.93%	69.31%	612.22%	547.45%	4.88%	1.04%
14	DDN	100.00%	34.35%	0.52%	0.02%	0.23%	0.02%	55.48%	21.54%	398.48%	386.11%	0.52%	0.01%
15	YTC	100.00%	21.46%	0.11%	0.17%	0.36%	0.20%	12.21%	21.61%	261.17%	382.37%	0.11%	0.04%
16	CDP	100.00%	41.14%	9.33%	13.42%	8.03%	18.70%	38.27%	15.31%	303.62%	468.60%	9.33%	5.52%
17	DPP	100.00%	42.17%	5.90%	15.52%	8.90%	17.78%	25.77%	21.20%	257.14%	411.89%	5.90%	6.55%
18	AGP	47.23%	58.58%	22.47%	12.41%	8.21%	7.31%	98.38%	59.15%	278.35%	287.24%	10.61%	7.27%
19	TVP	34.64%	64.07%	7.74%	12.21%	1.72%	7.64%	59.74%	53.75%	752.33%	297.27%	2.68%	7.82%
20	DPH	100.00%	100.00%	0.43%	1.82%	7.55%	15.45%	2.60%	4.98%	217.75%	236.18%	0.43%	1.82%
21	DVN	17.54%	100.00%	7.97%	4.78%	15.63%	9.45%	27.29%	28.29%	186.85%	178.88%	1.40%	4.78%
22	DP3	64.13%	100.00%	7.98%	6.34%	6.56%	8.27%	48.45%	49.22%	251.09%	155.79%	5.11%	6.34%
	AVER	76.14%	72.82%	7.03%	6.46%	8.67%	11.39%	40.42%	34.12%	381.15%	374.22%	4.23%	4.40%

Table 2: Sustainable growth rate of transportation construction enterprises from the sample in 2018 and 2019

Note: Compiled by the author.

The ratio of turnover to total assets of other enterprises and the group of pharmaceutical enterprises is always below 100% and there is a great variation between different businesses. In contrast to the high ratio of assets to owners' equity, there are businesses that maintain the ratio of total assets to equity more than 7 times, meaning that enterprises have very high financial leverage, equity accounts for less than 15% of total assets. None of the firms in the group had a ratio below 1.8, and only one of them reached this ratio below 2, meaning that almost all firms used leverage.

Differences in the proportion of assets to equity or revenue to total assets of the two groups can be explained by industry specificity. While the pharmaceutical industry must focus on product development and brand promotion, the transportation construction of transport works must focus on expanding the scale of machinery and equipment. Revenue of the pharmaceutical industry is recorded from both wholesale and retail activities, while that of transport transportation construction companies comes from large bidding packages and are allocated over the years.

4.2. Sustainable growth rate comparative analysis

In the remainder of the paper we will examine, based on comparative analysis, if there is any significant difference between the level of sustainable growth rates of pharma and transportation construction enterprises from the sample in order to determine whether the sector affiliation of the enterprise affects its sustainable growth rate.

A t-test of independent samples for testing the Hypothesis 1 is used in this paper in order to determine a possible existence of statistically significant difference between the sustainable growth rate of the enterprises belonging to the chosen sectors in 2018 and 2019

Table 3. Group Statistics

	1D0GT	N	Mean	Std. Deviation	Std. Error Mean
ALL SECTORS 2018	1	22	10.20018	8.029795	1.711958
	0	22	4.23436	3.376850	.719947
ALL SECTORS 2019	1	22	9.94614	5.650703	1.204734
	0	22	4.40241	3.702631	.789404

Table 4. Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
ALL 2018	Equal variances assumed	2.570	.116	3.212	42	.003	5.965818	1.857182	2.217874	9.713763
	Equal variances not assumed			3.212	28.203	.003	5.965818	1.857182	2.162785	9.768852
ALL 2019	Equal variances assumed	3.028	.089	3.849	42	.000	5.543727	1.440327	2.637030	8.450425
	Equal variances not assumed			3.849	36.226	.000	5.543727	1.440327	2.623241	8.464213

Table 5. Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	CON-2018 2019	-.168045	3.370526	.718599	-1.662453	1.326362	-.234	21	.817
Pair 2	PHARM- 2018 2019	.254045	7.728697	1.647764	-3.172667	3.680758	.154	21	.879

The result shows that there is an existence of statistically significant difference between the sustainable growth rate of the enterprises belonging to the chosen sectors in 2018 and 2019.

A paired samples t-test is used for testing the Hypothesis 2, i.e., for determination of possible statistically significant difference in the level of the sustainable growth rate of pharma and transportation construction enterprises in 2019 in relation to 2018.

Table 6. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	CON2018	4.23436	22	3.376850	.719947
	CON2019	4.40241	22	3.702631	.789404
Pair 2	PHARM2018	10.20018	22	8.029795	1.711958
	PHARM2019	9.94614	22	5.650703	1.204734

Table 7. Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	CON2018 & CON2019	22	.550	.008
Pair 2	PHARM2018 & PHARM2019	22	.404	.062

The result shows that there is **no statistically significant difference** in the level of the sustainable growth rate of pharma and transportation construction enterprises in 2019 in relation to 2018.

An one-sample t-test the Hypothesis 3 is tested in order to determine if there is a statistically significant difference between an average sustainable growth rate of the pharma and transportation construction enterprises and the rate of inflation in 2018 (3.54%) and 2019 (2.79%)

Table 8. One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
CON2018	22	4.23436	3.376850	.719947
PHARM2018	22	10.20018	8.029795	1.711958
CON2019	22	4.40241	3.702631	.789404
PHARM2019	22	9.94614	5.650703	1.204734

Table 9. One-Sample Test

	Test Value = 3.54					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
CON2018	.964	21	.346	.694364	-.80285	2.19157
PHARM2018	3.890	21	.001	6.660182	3.09997	10.22039
CON2019	1.815	21	.084	1.432409	-.20925	3.07406
PHARM2019	5.791	21	.000	6.976136	4.47075	9.48152

Based on the obtained results of the one sample t-test shown, the null Hypothesis 3 for pharma and transportation construction enterprises for 2018 and 2019 must be discarded and it may be concluded that an average sustainable growth rate of pharma companies is statistically different from the inflation rate measured with the index of consumer prices.

Besides, the results of the one sample t-test also shows that the null Hypothesis 3 for transportation transportation construction enterprises must be discarded and it may be concluded that an average sustainable growth rate of transportation transportation construction enterprises is not statistically different from the inflation rate measured with the index of consumer prices both in 2018 and 2019.

Also, we can see that the SGR of pharma companies in the sample is higher than the inflation rate.

5. Discussion and Conclusion

The results show that, compared to each year, there is no difference in the sustainable growth rate of transportation construction and pharmaceutical enterprises in 2018 and 2019, but there is a difference in the industry in term of the sustainable growth of transport transportation construction and pharmaceutical enterprises in both 2019 and 2018.

That means that the main differences lie on the sector's features more than the time.

In both 2018 and 2019, there is not really a real opportunity for the sustainable growth of transport transportation construction companies because the ratio is only around the inflation rate of the year, which was claimed 3,54% in 2018 and 2.79% in 2019. Only pharmaceutical businesses have a chance of real sustainable growth because the ratio is significantly higher than inflation rate of the year.

That means that the sector of pharma seems to have better profitable expectation thank to its feature.

The research results lead to a conclusion that Vietnam has a comparative advantage in the field of pharmaceuticals rather than transport transportation construction. It is important to point out and analyze the sustainable growth rates of different sectors that will be able to provide the regulatory agencies with a tool to select the most appropriate regulations and measures to stimulate the growth and development of those fields.

Therefore, regulators can focus on designing more effective policies for the areas of transportation and pharmaceutical transportation construction to promote sustainable growth in the future.

Finally, it should be pointed out that this study is based on a sample of 44 enterprises, 22 from the transportation construction of transport works and 22 from the pharmaceutical industry and should conduct further research to draw the results for discussion of the growth potential of these sectors in Vietnam. In addition, it is necessary to take into account a longer historical period, to make a more realistic assessment of the potential for sustainable growth, as well as better the design for related policy.

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AUDITOR REPORT IN THE CURRENT EVOLVING DUE TO COVID 19 ISSUES OF AUDITORS INTERESTING

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Abstract: *The paper aims to solve the issues auditors should pay attention to when preparing audit reports on financial statements in the context of complicated developments of the covid pandemic 19. By using the qualitative research methods, the authors have identified effects of the COVID-19 pandemic to enterprises that auditors must pay attention to when preparing audit reports on financial statements. Based on the research results, the authors highlights potential implications for auditor and interim review reports arising from the current environment, including:*

- *Modifications to the auditor's opinion due to material misstatement of the financial statements or an inability to obtain sufficient appropriate audit evidence;*
- *Material uncertainty relating to going concern;*
- *Inclusion of key audit matters (KAMs) and/or emphasis of matter (EOM) paragraphs; and*
- *Reporting implications for interim review engagements, when the auditor of the financial statements is also performing the interim review.*

Keywords: *auditing, auditor reports, covid 19*

1. Introduction

COVID-19 pandemic have influence negative, comprehensive, far-reaching aspects of economic life - society all over the world. The global economy has been greatly influenced by the outbreak Covid 19. Not only affects human health and life, but also Covid 19 affects many industries, sectors and economic organizations. To survive in a pandemic, businesses are forced to change our thinking and action strategies; the way of operation and organizational structure. The new risks may be arise, become more complex and likely to disrupt internal control actual of the business. Going concern of the business is in danger of being violated. It can also be the cause of pressure on the preparation and presentation of financial statements. The major impacts on the business due to the influence of Covid 19 forced the audit teams and auditors (auditors) to always put themselves in the state of doubt and need more importance when performing the audit. Auditors need to consider the impact of the pandemic on the business operations of customers' businesses that they are auditing. At the same time, there should be changes in ideological and action in determining the audit approach; building auditing strategies and modifying additional appropriate audit procedures. In which, the work of forming an auditor's opinion and an auditor's report on the Financial Statements also appears risks and requires caution needed.

2. Research methods

The authors used theoretical and practical research methods to form this paper.

- Regarding theoretical research methods: On the database, information is available in documents and documents by logical thinking manipulations to draw necessary scientific conclusions for the research problem. Specific methods such as: Analytical method and theoretical synthesis; theoretical classification and systematization methods; Hypothetical methods and historical methods.

- Regarding practical research methods: Using methods directly applied to research problems in practice to understand the nature and law of the problem, including: scientific observation method; methods of investigation, interview, survey; analytical method to summarize experience and consultation with experts.

To get this article, the authors used documents such as textbooks, books and regulations, standards on accounting and auditing to provide conceptual content, theory to do. research institution. At the same time, based on the research results that have been published in journals, topics and review articles, assess the practice of auditing in general and make audit reports in particular that the authors group. Essentials and explanations for practical problems. Since then, the authors have applied theoretical studies, considering the current situation to give suggestions on issues that the auditor needs to be concerned about when forming opinions and making audit reports in the circumstances of significant impact by covid 19 pandemic.

3. Research Results

3.1. The basics of auditor report

Financial statements are accounting products to provide information about the financial situation, assets, capital sources, cash flow and results of production and business activities of an enterprise subjects to interested. Therefore, financial statements need to be prepared and presented in accordance with applicable or accepted accounting policies, regimes and laws.

At the end of the audit, the auditor must form an audit opinion and prepare an audit reporting on the financial statements. Audit reporting on financial statements is a report prepared and presented by the auditor in order to confirm the true and fair of the audited financial report. In order to give comments on the financial statements, the auditor must collect appropriate audit evidence as a basis for giving comments.

For the auditor, the audit reporting is a document recording the final conclusions of the auditor on the audited information. The audit report is an announcement of the audit results, it reflects fully and briefly all the work that the auditor has performed in the audit process. Auditors are responsible for the comments they have given in the audit report.

For users of information outside the unit such as authorities, shareholders, banks, buyers, sellers, audit reports are a basis for them to know the level of honesty, reasonableness, and worthiness. The reliability of the information has been audited so that make a appropriate decisions.

For the audited unit itself, the audit report is meaningful on two angles. As an information provider, audit reports help the audited units prove the reasonableness and correctness of the information they provide. Through the audit report, information users will “feel more secure”, more confident in the information provided by the audited entity (because that information has been confirmed on the reliability level). Accordingly, the audited entities will be more favorable in economic relations with related parties. However, if the audited entity provides false information, the auditor’s report will indicate such misstatements to users of the information. Therefore, it makes the audited unit more cautious in collecting, processing and providing information to objects. This is a factor that greatly affects the quality of information provided by the audited units. On the other hand, as the user of the audit report information, it helps the audited entities make the right decisions to manage and operate the entity, because the auditor has pointed out the mistakes, irrationalities (if any) of the information, especially financial information processed and provided by the entity.

Because of the above aspects, the auditor’s report should clearly state the relevance of the information to be audited with the standards developed for that information. Audit reports must be presented clearly and easily to understand so that information users do not make mistakes when using the audited information. To obtain the above opinions, an audit report must be prepared in accordance with the requirements of the relevant audit standards regarding the preparation of audit reports. These standards will facilitate the preparation and presentation of the audit report in a consistent manner and include all elements necessary to avoid possible misunderstanding by users of the audit report.

The most important content in the auditor report is the opinion of the auditor on the audited information. In the report on the audit of the financial statements, the auditor’s comments often have a clear distinction, especially the comments. audited financial statements of independent auditors. Therefore, different types of audit reports have been formed, in which there are different comments.

To form comments on the financial statements, auditors must base themselves on the audit results, evaluation and review to make conclusions about the following aspects:

- ✓ The financial statements set up are consistent with current accounting practices, principles and standards or not.
- ✓ Does the financial information truthfully and reasonably reflect the financial position in all material aspects.
- ✓ Is the financial information consistent with applicable legal regulations.
- ✓ The overview of the enterprise’s financial information is consistent with the auditor’s knowledge about the business activities of the enterprise or not.

Depending on the results of each financial statement audit, the auditor can give an opinion of one of the following types of opinions:

(a) Unmodified Opinion

An auditor gives an unmodified opinion when the auditor concludes that the financial statements are prepared, in all material aspects, in accordance with the applicable financial reporting

framework, and the financial statements present true and fair. In other words, the unmodified opinion indicates that the audited financial statements give a true and fair view or that material misstatement no longer exists.

According to the requirements of audit standards, the auditor can only give an unmodified opinion when the audit scope is not limited, the auditor has obtained sufficient audit evidence to make a conclusion about audited financial statements

The unmodified opinion is applied for the following cases: (i) the audited financial statements contain errors but are detected by the auditor, the entity has adjusted them according to the auditor's opinion and the adjusted financial statements has given a true and fair view in all material aspects at the time of reporting; (ii) The financial statements have presented truly and fairly in all material respects, but the auditor's report should provide additional information (Emphasis of matter or Other matters) to draw users' attention to any important matters that are relevant to users' understanding of the financial reports or the audit.

(b) Modifications to the Auditor's Opinion

The auditor gives modifications to the auditor's opinion based on the audit evidence gathered, the auditor concludes that, in terms of the overall view, the audited financial statements still have material misstatements or the *scope* of the *audit* is *limited*, the auditor cannot obtain sufficient appropriate audit evidence on which to base the opinion about the financial statement, on the overall view, that there are no material misstatements.

Modifications to the Auditor's Opinion has three types of opinion, includes: qualified opinion, adverse opinion and disclaimer of opinion.

+ Qualified Opinion:

The auditor gives a qualified opinion when auditors believe that the financial statements have been presented true and fair in all material aspects, except for a specific aspect.

Auditors present an «qualified opinion» in 2 cases:

Firstly, based on the sufficient appropriate audit evidence gathered, the auditor concludes that the effect of unadjusted misstatements whether individually or aggregated, is material but not pervasive to the financial statements.

Secondly, when the scope of the audit is limited and the auditor cannot obtain sufficient appropriate audit evidence on which to base the opinion, but the auditor concludes that the possible effects of undetected misstatements (if any) could be material but not pervasive on the financial statements.

When giving a qualified opinion on the financial statements, the auditor has to describe the matter in the "Basis for Qualified Opinion" paragraph that lead to the opinion in the auditor's report and the paragraph should immediately place before the opinion paragraph in the audit report to draw users' attention to this type of opinion.

+ Disclaimer of Opinion:

An auditor gives a disclaimer opinion when the auditor cannot obtain sufficient appropriate audit evidence on which to base the auditor's opinion and the auditor concludes that the possible

effects of undetected misstatement (if any) that could be material and pervasive on the financial statements.

In this case, the limited audit scope is at the pervasive level, making it impossible for the auditor to obtain sufficient appropriate audit evidence. When the auditor believes that the effects of undetected misstatements (if any) can be material and pervasive to the financial statements that a qualified opinion is not enough to show the severity of misstatements, the auditor should not express an opinion on the financial statements. In addition, if independence between the auditor and the client is not guaranteed under the code of professional ethics, the auditor may give an opinion and a «disclaimer of opinion» report.

When expressing a disclaimer of opinion on the financial statements, the auditor has to describe the “Basis for Disclaimer of Opinion” paragraph in the audit report to describe the matter resulting in the opinion and the paragraph should immediately place before the opinion paragraph in the audit report to draw users’ attention to this type of opinion.

+ *Adverse opinion*

Auditors should present an “adverse opinion” based on sufficient appropriate audit evidence obtained, the auditor concludes that misstatements, whether individually or aggregated, are material and pervasive to the financial statements. In this case, the issues that the auditor disagrees with the auditee are important or related to a large number of items that the auditor cannot give a qualified opinion.

When giving an “adverse opinion” to the financial statements, the auditor should present in the auditor’s report a description of the severity of the matters that lead to this opinion with the title “Basis for the adverse opinion” and must immediately place before the opinion to help users notice the opinion.

Auditing standards have issued many standards and regulations related to synthesising results, forming opinions and preparing audit reports, such as: ISA 260: *Communication with those charged with governance*; ISA 265: *Communicating deficiencies in internal control to those charged with governance and management*; ISA 700: *Forming an opinion and reporting on financial statements*; ISA 705: *Modification to the opinion in the independent auditor’s report*; ISA 706: *Emphasis of Matter Paragraphs and Other Matter Paragraphs in the Independent Auditor’s Report*; ISA 710: *Comparative information - Corresponding figures and comparative financial statements*; ISA 720: *The auditor’s responsibilities relating to other information in documents containing audited financial statements*; ISA 230: *Audit documentation*.

3.2. The effects of the COVID-19 pandemic to enterprises that auditors must pay attention to when preparing audit reports on financial statements

On January 30, the World Health Organization declared that coronavirus (Covid-19) became an urgent public health hazard. COVID-19 pandemic has affected comprehensively and deeply to all countries in the world. At the present time, the COVID-19 pandemic is still complicated and unpredictable. The effects of the COVID-19 pandemic have significant global implications for economies, markets and businesses, including volatility and possible material uncertainties. The global economy fell into a serious recession.

The impact of these influences on the financial statements of the business

The large openness of the Vietnamese economy and deep international integration were affected, seriously impacting socio-economic sectors, causing disruption of supply chains and trade flows, delay of production, business and service activities; have direct effects on import/export, aviation, travel, accommodation, dining, health, education, labor, employment. Many businesses go bankrupt, dissolve, suspend operations, shrink their scale ... The Covid-19 outbreak has caused many difficulties and challenges for businesses and organizations in economic fields, society. Enterprises have to deal with problems of capital, market, human resources, supply, production ... Uncertainty about the future prospects of many units is increasing. This affects accounting activities and the preparation of financial statements is also facing many difficulties, affecting the truthfulness, reasonableness, completeness and timeliness of financial information.

Users of financial statements are interested in the impact of the Covid-19 pandemic on corporate business. In many cases, these should be included in the report of the Board of Directors (e.g. Events after the reporting period and changes or major risks affecting performance of the enterprise).

In addition, the Covid-19 outbreak has resulted in changes in obligations or uncertainties that have not been recorded or presented in the previous financial statements. The additional presentation of information is not only relevant to the revenues, expenses, assets and liabilities that have been recognized, but also should take into account problems that may arise in subsequent reporting periods.

The financial reporting issues that need attention in the context of a pandemic include:

➤ Events after the reporting period

Events after the reporting period are those events, favourable and unfavourable, that occur between the end of the reporting period and the date when the financial statements are authorised for issue. IAS 10 Events after the Reporting Period makes a distinction between adjusting and non-adjusting events after the reporting period. The principal issues are how to determine which events after the reporting period are to be reflected in the financial statements as adjusting events and for non-adjusting events what additional disclosures to provide. For entities that are affected, or expect to be impacted by the outbreak or by the measures taken, the critical judgement and evaluation that management need to make is whether and, if so, what event in this series of events provides evidence of the condition that existed at the end of the reporting period for the entities' activities or their assets and liabilities. When making this judgement, the entity takes into consideration all available information about the nature and the timeline of the outbreak and measures taken.

➤ Going concern was affected

IAS 1 Presentation of Financial Statements states that financial statements must be made on the going concern assumption and will continue to do normal business in the near future. This means that the business has no intention of nor is required to cease operations or significantly shrink the scale of its operations.

Given the unpredictability of the potential impact of the outbreak, there may be material uncertainties that cast significant doubt on the entity's ability to operate under the going concern basis.

In the current context due to the Covid-19 epidemic, many businesses face the risk of bankruptcy or have to shut down some sectors, leading to financial statements being prepared on an alternative basis (e.g. liquidation price or fair value).

➤ ***Changes in accounting estimates are no longer relevant***

In the financial statements ended June 30, 2020, the Chief Financial Officer needs to correctly identify the accounting estimates and assumptions that will be applied to prepare the financial statements.

Due to changing market conditions due to the effects of the Covid-19, some previous accounting estimates were no longer relevant (e.g. Provision for bad debts, depreciation of fixed assets and Provision for warranty obligations).

Given that he has never faced the same situation before, building assumptions that underpin accounting estimates is no small challenge for CFOs.

➤ ***Inventory issues***

Many businesses are experiencing supply chain disruptions, businesses with seasonal inventories and perishable products at risk of deterioration, obsolescence and deterioration. Therefore, the CFO needs to evaluate the decrease in the value of inventories at the balance sheet date in accordance with the IAS.

Valuation is possible under volatile market conditions for uncertain reasons because the Covid-19 translation is a challenge that the CFO must consider.

In addition, for the months when the product actually produced is below its normal capacity (e.g. due to a temporary stoppage of production), the firm must determine the fixed overheads allocated to processing costs for unit of product at normal capacity. Unallocated fixed overheads should be immediately recognized to cost of goods sold during the period.

➤ ***Impairment assessment***

The pandemic is adversely affecting businesses such as plant closures, production suspension and restrictions on travel and import and export, which can be seen as signs of impairment. Entities are required to determine whether the outbreak is considered to be an impairment indicator at the reporting date, which results in an impairment assessment. In respect of the impairment test that was performed at 31 December 2019, management needs to be mindful that the assumptions being used to determine the recoverable amounts reflected the conditions existing at that date. Entities need to consider providing detailed disclosures on the assumptions and sensitivities. Therefore, the CFO must pay special attention and determine the recoverable amounts of the assets to ensure that the assets recorded on the financial statements are not higher than the recoverable amount.

Enterprises should continue to monitor the movements of Covid-19 and determine the impact on their financial situation and ability to operate effectively, thereby making measures and decisions to manage. risk management.

3.3. Auditor's opinion on problems arising from the impact of the Covid 19

The outbreak of Covid 19 can disrupt business operations and greatly affect the preparation of financial statements of audited entities. Auditors should proactively review, evaluate and discuss

with customers in order to build appropriate audit process and procedures; Ensure that sufficient appropriate audit evidence is obtained as a basis for forming an opinion and for preparing the appropriate audit report.

The COVID-19 pandemic has tested the way auditors obtain sufficient and appropriate audit evidence. Access issues (e.g., caused by travel restrictions and remote working arrangements), and the availability of client staff are common challenges. For example, auditors may no longer be able to attend physical inventory counts; group auditors may have challenges accessing workpapers of component auditors; or auditors may not be able to understand and test internal controls due to changes in how entities are operating. In some cases, auditors may be able to undertake alternative procedures to be able to obtain sufficient appropriate audit evidence, but in other cases this may not be possible.

When the auditor is unable to obtain sufficient appropriate audit evidence necessary to provide a basis for forming an opinion on the financial statements, the auditor will need to consider the impact on the auditor's report, including whether a modification to the opinion is needed.

Under the ISAS, obtaining sufficient appropriate audit evidence applies equally to disclosures. Further, for financial statements prepared in accordance with a fair presentation framework, auditors are required to consider the overall presentation of the financial statements and whether the financial statements, including disclosures, represent the underlying transactions and events in a manner that achieves fair presentation. If the disclosures do not adequately describe the material effects of the COVID-19 pandemic (e.g., relating to significant assumptions for accounting estimates, financial risk management or significant judgements about going concern), consideration of the possible effect on the auditor's report is required. This may include whether a modification to the opinion is needed.

This post highlights potential implications for auditor and interim review reports arising from the current environment, including:

- ✓ Modifications to the auditor's opinion due to material misstatement of the financial statements or an inability to obtain sufficient appropriate audit evidence;
- ✓ Material uncertainty relating to going concern;
- ✓ Inclusion of key audit matters (KAMS) and/or emphasis of matter (EOM) paragraphs; and
- ✓ Reporting implications for interim review engagements, when the auditor of the financial statements is also performing the interim review.

(1) Modifications to the Auditor's Opinion

Impacts of the COVID-19 pandemic may amplify conditions that give rise to modifications, which arise from circumstances where the auditor has:

- Determined that there are, in accordance with ISA 450, uncorrected misstatements that are material, individually or in aggregate, to the financial statements as a whole; or
- Concluded, in accordance with ISA 330, that they are unable to obtain sufficient appropriate audit evidence.

In the current circumstances, examples of when modifications to the auditor's opinion may arise because of material misstatement of the financial statements include:

- The appropriateness or adequacy of disclosures in the financial statements. For example, when the financial statements do not include all of the disclosures required to appropriately describe the effects of current circumstances on the entity resulting from the COVID-19 pandemic, including sufficient description of relevant risks, estimates and judgments applied for that entity.
- The proper application of the entity's accounting policies. For example, inappropriate recognition and measurement, in accordance with an entity's accounting policies, of assets and liabilities.

Modifications to the auditor's opinion also may arise as a result of the inability to obtain sufficient appropriate audit evidence, including circumstances beyond the control of the entity or circumstances relating to the nature or timing of the auditor's work. For example, access to the entity's accounting records or the ability to obtain audit evidence may be restricted due to government imposed lockdowns and travel bans during the COVID-19 pandemic (e.g., access to information or people, which may relate to the entity or its components, including associates and joint ventures, etc.).

The types of modifications to the auditor's opinion are set out in ISA 705 (Revised), and explain the circumstances for each (i.e. a qualified opinion, adverse opinion and a disclaimer of opinion) based on the auditor's judgment in the particular situation.

The table below illustrates how the auditor's judgment about the nature of the matter giving rise to the modification, and the pervasiveness of its effects or possible effects on the financial statements, affects the type of opinion to be expressed.

Nature of Matter Giving Rise to the Modification	Auditor's Judgment about the Pervasiveness of the Effects or Possible Effects on the Financial Statements	
	Material but Not Pervasive	Material and Pervasive
Financial statements are materially misstated	Qualified opinion	Adverse opinion
Inability to obtain sufficient appropriate audit evidence	Qualified opinion	Disclaimer of opinion

ISA 705 (Revised)⁵, set out specific elements required in the auditor's report when the auditor modifies the opinion on the financial statements.

Communication with Those Charged with Governance

Broadly, when the auditor expects to modify the opinion in the auditor's report, the circumstances that led to the expected modification and the wording of the modification are required to be communicated with those charged with governance. Additional communication may also be required with those charged with governance in certain circumstances where there is a modification of the auditor's opinion (e.g., there is a material misstatement due to non-disclosure).

(2) Material Uncertainty Relating to Going Concern

The current uncertain financial, operating and other conditions that are arising as a result of the COVID-19 pandemic will likely result in heightened risk. Consequently, there may be a need

for more persuasive audit evidence in relation to management's assessment of the entity's ability to continue as a going concern and related disclosures, as applicable, financial statements. The auditor's conclusions relating to going concern, in the light of the facts and circumstances of the entity, determine the possible impact (if any) on the auditor's report.

ISA 570 (Revised), Going Concern sets out the auditor's responsibilities in relation to going concern and the implications for the auditor's report. The Appendix to ISA 570 (Revised) provides illustrative examples of auditor's reports relating to going concern.

ISA 570 (Revised) requires the auditor to evaluate whether sufficient appropriate audit evidence has been obtained with regard to the appropriateness of management's use of the going concern basis of accounting in the preparation of the financial statements. The work effort for obtaining sufficient appropriate audit evidence to support the auditor's conclusion, and concluding on the appropriateness of management's use of the going concern basis of accounting in accordance with ISA 570 (Revised), are further explained in the IAASB Staff Audit Practice Alert, Going Concern in the Current Evolving Environment-Audit Considerations for the Impact of COVID-19. Although that Staff Alert includes a section that addresses potential implications for the auditor's report, this Staff Alert provides additional detail and expands more on situations where the audit opinion is modified (i.e., qualified or adverse opinions, or disclaimer of opinions).

When Changes are Needed to the Auditor's Report Relating to Going Concern

When the auditor concludes that management's use of the going concern basis of accounting is appropriate, but a material uncertainty exists, the auditor determines whether the financial statements adequately disclose the principal events and conditions, management's plans to deal with those events or conditions and whether, under these conditions, the entity may be unable to realize its assets and discharge its liabilities in the normal course of business.

The implications for the auditor's report are summarized in the table below:

Implications for the Auditor's Report		
Auditor's Conclusion	Reporting Implication	Circumstance that Results in Modification
Use of going concern basis of accounting is inappropriate	Adverse opinion	When the financial statements have been prepared by management using the going concern basis of accounting but, in the auditor's judgment, that basis is no longer appropriate.
Use of going concern basis of accounting is appropriate BUT a material uncertainty exists	Unmodified opinion + Separate Material Uncertainty Paragraph	When adequate disclosure about the material uncertainty is made in the financial statements, the auditor's report includes a separate section under the heading "Material Uncertainty Related to Going Concern" to: - Draw attention to the relevant disclosure in the financial statements. - State that these events or conditions indicate that a material uncertainty exists that may cast significant doubt on the entity's ability to continue as a going concern and that the auditor's opinion is not modified in respect of the matter.

	Qualified or adverse opinion	When adequate disclosure about the material uncertainty is not made in the financial statements, the auditor: Expresses a qualified or adverse opinion, as appropriate, in accordance with ISA 705 (Revised); and In the “Basis for Qualified (Adverse) Opinion” section of the auditor’s report, states that a material uncertainty exists that may cast significant doubt on the entity’s ability to continue as a going concern and that the financial statements do not adequately disclose this matter.
	Disclaimer of opinion	May be used when there are situations (in extremely opinion rare cases) involving multiple uncertainties that are significant to the financial statements as a whole.
Unable to conclude because management is unwilling to make or extend its assessment	Qualified or disclaimer of opinion	When management is unwilling to make, or extend, its assessment of the entity’s ability to continue as a going concern, when requested to do so by the auditor, the auditor considers the implications for the auditor’s report, since the auditor may not be able to conclude regarding management’s use of the going concern basis of accounting. In accordance with ISA 705 (Revised), if the possible effects on the financial statements of such limitation on the scope of the audit is material, a qualified or disclaimer of opinion may be appropriate.
Going concern basis is inappropriate AND financial statements are prepared on another acceptable basis of accounting	Unmodified opinion	When the going concern basis of accounting is not appropriate and management prepares the financial statements on another basis (e.g., a liquidation basis), and: <ul style="list-style-type: none"> • The auditor determines that the other basis of accounting is acceptable in the circumstances; and • There is adequate disclosure about the basis of accounting on which the financial statements are prepared. In these circumstances, the auditor issues an unmodified opinion but may consider it appropriate or necessary to include an EOM paragraph in the auditor’s report, in accordance with ISA 706 (Revised), to draw the user’s attention to the alternative basis of accounting and the reasons for its use.

Even when no material uncertainty exists, ISA 570 (Revised) requires the auditor to evaluate whether, in view of the requirements of the applicable financial reporting framework, the financial statements provide adequate disclosure about events or conditions that may cast significant doubt on the entity’s ability to continue as a going concern. In addition, when the financial statements are prepared in accordance with a fair presentation framework, additional disclosures beyond those required by the applicable financial reporting framework may be provided by management (or the auditor may determine that such additional disclosures are necessary) to achieve fair presentation.

In these circumstances, and where the auditor does not communicate such matter(s) as a key audit matter in the auditor’s report in accordance with ISA 701, the auditor may wish to include an emphasis of matter paragraph in the auditor’s report in accordance with ISA 706 (Revised) to draw the users’ attention to such disclosure(s).

Communication with Those Charged with Governance

ISA 570 (Revised), sets out the requirements for communication with those charged with governance when events or conditions are identified that may cast significant doubt on the entity’s ability to continue as a going concern.

(3) Key Audit Matters (KAMS)

When ISA 701, Communicating Key Audit Matters In The Independent Auditor's Report applies, additional focus may be needed in determining the key audit matters reported in the auditor's report because of the changing circumstances and difficulties arising due to the COVID-19 pandemic. For example, the effect on the entity's financial position and performance arising from the impact of COVID- 19 could significantly affect the audit procedures undertaken, particularly when there were significant management judgments.

In the current environment, the auditor's determination of the matters that require significant auditor attention may, for example, be affected by the following:

- Difficulty obtaining sufficient appropriate audit evidence-COVID-19 related conditions may cause difficulties in applying audit procedures, evaluating the results of those procedures, and obtaining relevant and reliable evidence on which to base the auditor's opinion, such as valuing financial instruments or calculating other fair values.

- Specific events or transactions-that have a significant effect on the financial statements (i.e., developments affecting financial statement items in a different way, or new items or transactions, or unusual or once-off transactions (e.g., new impairments of non-financial or financial assets or recoverability of deferred tax assets)).

The auditor considers such matters in accordance with ISA 701 in determining key audit matters.

When it has been determined that there is a key audit matter(s) that needs to be communicated in the auditor's report, the auditor does so in a separate section of the auditor's report under the heading "Key Audit Matters. The description of each key audit matter:

- Includes a reference to the related disclosure(s), if any, in the financial statements; and
- Addresses the following aspects related to the auditor's professional judgment about the matter:
 - + Why the matter was considered to be one of most significance in the audit of the current period and therefore determined to be a key audit matter; and
 - + How the matter was addressed in the audit.

Referring to any related disclosures enables intended users to further understand how management has addressed the matter in preparing the financial statements. In addition, the auditor may draw attention to key aspects of such disclosure(s), which may assist intended users' understanding of why the matter is a key audit matter.

Matters that Are Not Presented as Key Audit Matters

ISA 701 sets out that a matter giving rise to a modified opinion in accordance with ISA 705 (Revised), or a material uncertainty related to events or conditions that may cast significant doubt on the entity's ability to continue as a going concern in accordance with ISA 570 (Revised), are by their nature, key audit matters. However, in such circumstances, these matters are not described in the Key Audit Matters section of the auditor's report; rather, the auditor includes a reference to

the Basis for Qualified (Adverse) Opinion or the Material Uncertainty Related to Going Concern section(s) in the Key Audit Matters section.

The application material to ISA 701, sets out an illustration where the auditor has no other key audit matters to communicate in such situations.

Key Audit Matters

[*Except for the matter described in the Basis for Qualified (Adverse) Opinion section or Material Uncertainty Related to Going Concern section,*] We have determined that there are no [other] key audit matters to communicate in our report.

Communication with Those Charged with Governance

ISA 70120 requires the auditor to communicate with those charged with governance the matters the auditor has determined to be key audit matters or, if applicable, the auditor's determination that there are no key audit matters to communicate in the auditor's report.

(4) Emphasis of Matter Paragraphs

The auditor may consider it necessary to draw users' attention to a matter appropriately presented or disclosed in the financial statements that, in the auditor's judgment, is of such importance that it is fundamental to users' understanding of the financial statements. In these circumstances, ISA 706 (Revised) requires that the auditor include an EOM paragraph within a separate section of the auditor's report with an appropriate heading.

The EOM paragraph includes a clear reference to the matter being emphasized, where the relevant disclosures that fully describe the matter can be found in the financial statements, and indicates that the auditor's opinion is not modified in respect of the matter emphasized.

As has been referred to earlier, adequate and robust disclosures in the financial statements take on ever increasing importance due to the effects of the COVID-19 pandemic. Notwithstanding that auditors may look to EOM paragraphs to draw attention to certain disclosures, auditors should remain mindful that widespread use of EOM paragraphs may diminish the effectiveness of the auditor's communication about such matters.

When ISA 706 (Revised) Should Not Be Used

In accordance with ISA 706 (Revised), the inclusion of an EOM paragraph in the auditor's report would not be appropriate when:

- ISA 701 applies, and the matter has been determined to be a key audit matter to be communicated in the auditor's report (i.e., such matter is included in the separate "Key Audit Matters" section of the auditor's report).

- The matter results in the auditor modifying the opinion in accordance with ISA 705 (Revised) (i.e., if the auditor determines that a qualified or adverse opinion or a disclaimer of opinion is appropriate in the circumstances of a specific audit engagement).

In addition, an EOM paragraph is not a substitute for appropriate disclosures in the financial statements that the applicable financial reporting framework requires management to make, or that are otherwise necessary, to achieve fair presentation. It also is not an alternative to reporting

in accordance with ISA 570 (Revised) when the auditor has concluded that a material uncertainty related to going concern exists.

(5) Interim Review Reports

The effects of the COVID-19 pandemic also will need to be considered by management when preparing and issuing interim financial information. The entity's external auditor would also consider the impact of such effects when reviewing the entity's interim financial information in accordance with ISRE 2410, Review of Interim Financial Information Performed by the Independent Auditor of the Entity.

For the auditor, the reporting implications are different because, for interim review engagements, the auditor expresses a review conclusion in accordance with ISRE 2410. Unlike an audit, a review is not designed to obtain reasonable assurance that the interim financial information is free from material misstatement (i.e., the auditor obtains only limited assurance from the procedures performed).

The following highlights reporting considerations relating to reporting on going concern and other modifications to the auditor's review report.

Going Concern

ISRE 2410²⁴ sets out requirements and explanatory material when a material uncertainty relating to an event or condition that may cast significant doubt on the entity's ability to continue as a going concern comes to the auditor's attention. Under these conditions, ISRE 2410 requires the auditor to:

- Include an EOM paragraph in the review report when adequate disclosure is made in the interim financial information; or

- Express a qualified or adverse conclusion, as appropriate, when the material uncertainty is not adequately disclosed in the interim financial information, (depending on the materiality and pervasiveness of the impact on the interim financial information).

Other Modifications to the Review Report

ISRE 2410 also addresses situations where a modification to the review report may be appropriate based on the evidence obtained or considering a limitation on the scope of the review - such modifications are ordinarily presented by adding an explanatory paragraph to the review report and appropriately modifying the conclusion:

- Departure from the applicable financial reporting framework-If a matter comes to the auditor's attention that causes the auditor to believe that the interim financial information is, or may be, materially affected by a departure from the applicable financial reporting framework (i.e., either incorrect interim financial information or inadequate disclosures), and management does not correct the interim financial information or add the necessary disclosures, the auditor modifies the review report:

- o A qualified conclusion is expressed, and an explanatory paragraph is added to the review report (i.e., explaining the basis for the qualified review report). Illustrative review reports with a qualified conclusion are set out in Appendix 5 of ISRE 2410.

○ An adverse conclusion is expressed when the effect of the departure is so material and pervasive to the interim financial information that the auditor concludes a qualified conclusion is not adequate to disclose the misleading or incomplete nature of the interim financial information. Illustrative review reports with a qualified conclusion are set out in Appendix 7 of ISRE 2410.

Limitation on scope-If there is a limitation on the scope of the review (i.e., the limitation on scope ordinarily prevents the auditor from completing the review), the auditor communicates, in writing, to the appropriate level of management and those charged with governance the reason why the review cannot be completed. The auditor also considers whether it is appropriate to issue a report, and if a report is to be issued, what the impact on the auditor's conclusion is. Depending on the facts and circumstances of each entity, a limitation on scope may be more readily expected in the current COVID-19 environment, and may arise from:

- A limitation on scope imposed by management.
- Other circumstances.

ISRE 2410 provides further detail regarding the auditor disclaiming a conclusion or expressing a qualified conclusion owing to a limitation on scope. Other modifications-the auditor is required to consider modifying the review report by adding a paragraph to highlight a significant uncertainty (other than related to going concern) that came to the auditor's attention, the resolution of which is dependent upon future events and which may affect the interim financial information.

4. Conclusion

As businesses change their way of operating and organizational structure in response to COVID-19, new risks can arise and become more complex and potentially disrupt existing internal control systems. In this situation, audit thinking and audit activities also need to have appropriate flexible change. These changes are not outside the purpose of ensuring auditors gather sufficient appropriate evidence to serve as a basis for giving their verifying opinions and making appropriate audit reports, without being subject to audit risks.

When performing an audit of the financial statements, auditors need to consider the impact of Covid 19 on the business operations of the enterprise, especially paying attention to the issues presented in the article to have a basis for making ideas. Appropriate audit knowledge, ensure the transparency of audited financial statements as well as create confidence for information users./.

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PROFESSIONAL ETHICAL STANDARDS DIRECTIVE AUDITOR'S MIND AND ACTION IN FINANCIAL STATEMENT AUDIT DUE TO COVID 19

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Abstract: *This paper aims to analyze the nature of the professional ethics of auditing, issues that auditors need to pay attention when follow Codes of ethics principles to financial statements auditing activities in the context significantly affected by the covid pandemic 19. By using the qualitative research methods, the authors have identified eight threats and issues that arise when performing financial statements audit in the current contexts due to Covid -19, including: (1) Compliance with the fundamental principles; (2) Auditors face threats that threaten adherence to professional ethics; (3). Non- compliance with laws and regulations (NOCLAR); (4) Pressure to Reduce Audit Fees; (5) Overdue Fees; (6) Non-assurance Services, Including Providing Advice and Assistance; (6). Non-assurance Services, Including Providing Advice and Assistance; (7) Long Association, Including Partner Rotation; (8) Communication with Those Charged with Governance.*

Keywords: *auditing, threat, ethic, covid 19*

1. Introduction

In the process of performing audit work, in order to promote the role of the audit, and to create public confidence in the audit results, the auditor must be fully aware of his responsibilities and adhere to the Codes of ethics for professional. Codes of ethics is the fundamental principles in the audit, plays a supporting role and is decisive to the audit's quality. During the audit process, auditors face many risks that can affect compliance with Codes of ethics, especially in the context of the complicated covid 19 pandemic around the world.

2. Research methods

The authors used theoretical and practical research methods to form this article.

- Regarding theoretical research methods: On the database, information is available in documents and documents by logical thinking manipulations to draw necessary scientific conclusions for the research problem. Specific methods such as: Analytical method and theoretical synthesis; theoretical classification and systematization methods; Hypothetical methods and historical methods.

- Regarding practical research methods: Using methods directly applied to research problems in practice to understand the nature and law of the problem, including: scientific observation method; methods of investigation, interview, survey; analytical method to summarize experience and consultation with experts.

To get this article, the authors used documents such as textbooks, books and regulations, standards on accounting and auditing to provide conceptual content, theory to do research institution. At the same time, based on the research results that have been published in journals, topics and review articles, assess the practice of auditing in general and make audit reports in particular that the authors group. Essentials and explanations for practical problems. Since then, the authors have applied theoretical studies, considering the current situation to give suggestions on issues that the auditor needs to be concerned about when follow Codes of ethics principles to financial statements auditing activities in the context significantly affected by the covid pandemic 19.

3. Research Results

3.1. The basics of Codes of ethics for Professional

Ethics is “*a system of rules, standards and social norms in which people voluntarily adjust their behaviors to suit the interests of the community and society*”. Professional ethics is a branch of the social ethics system, a kind of ethics that has been realized. To be successful in a personal career, the professional performance of each person in any field requires the ethical standards, called professional ethics. Professional ethics are the attitudes, rules, and social ethical standards that must be followed in professional activities, which are characteristic of the profession.

In the world, detailed content on professional ethics of accounting and auditing is often specified in the Charter on professional ethics issued by professional body. In this, professional body specify the things that auditors must do and cannot do while practicing. To concretize, professional organizations also issue detailed explanations and instructions on each principle and form a system of professional ethics standards.

According to audit experts, compliance with professional ethical standards helps auditors and auditing firms achieve practical benefits such as:

- ✓ Ethical orientation as a basis for decisions and actions;
- ✓ To become an outstanding individual or organization in the profession with high ethical standards;
- ✓ Enhance image, reputation, and relationships with stakeholders;
- ✓ Build credibility in the profession;
- ✓ Minimize potential risks for the company and avoid liability for legal proceedings...

From the characteristics and profession practice, the International Federation of Accountants (IFAC) issues versions of professional ethical standards of accountant corresponding to each development period of the economy. These standards set the ethical principles and set a template for all professional auditors to ensure they fully comply with the five fundamental principles of professional ethics, include:

- *Integrity*: to be straightforward and honest in all professional and business relationships. It also implies fair dealing and truthfulness.

- *Objectivity*: to not allow bias, conflict of interest or undue influence of others to override professional or business judgment.

- *Professional competence and due care*: to maintain professional knowledge and skills at the level required to ensure that a client or employer receives competent professional service based on current developments in practice, legislation and techniques, and act diligently and in accordance with applicable technical and professional standards.

- *Confidentiality*: to respect the confidentiality of information acquired as a result of professional and business relationships. Therefore, the auditor is not allowed to disclose any such information to a third parties without proper and specific authority, unless there is a legal or professional right or duty to disclose, nor use the information for the personal advantage of the professional accountant or third parties.

- *Professional behavior*: to comply with relevant laws and regulations and avoid any action that discredit the profession.

In Vietnam, in order to emphasize the important role of professional ethics for auditing activities, the Ministry of Finance issued and announced Professional ethical standards for accountant according to Circular No. 70/2015/TT-BTC dated on May 8, 2015. The purpose of Professional ethical standards for accountant is to define fundamental ethical principles and guide the application of these principles, in order to help auditors achieve the highest standards of professional ethics and expertise, meeting the increasing expectations of information users for audit results. According to the professional ethical standards of accountant, professional auditors must fully comply with five fundamental professional ethical principles. These ethical principles are also same the international principles, include integrity, objectivity, professional competence and due care, confidentiality, and professional behavior, irrespective of their roles, professional duties, and the circumstances in which they perform their professional activities.

The five basic principles of professional ethics seem very simple to any auditor, but ensuring full compliance with these principles in the practice process is not easy. There are many subjective and objective factors affecting auditors during their professional activities, making them choose to comply with professional ethics or perform illegal acts, contrary to standards. Therefore, the auditor should identify, evaluate and address threats to compliance with those principles. There are five general sources of threat that the auditor should be aware of their professional activities, include:

Self-interest threat: Threat may occur as a result of the financial or other interests affect the judgment or conduct of the professional auditor;

Self-review threat: threat that arise from auditors reviewing their own work or the work done by others in their firm.

Advocacy threat: threat that occurs when a professional auditor tries to defend the audit client's to the extent that it affects his objectivity;

Familiarity threat: Threat caused by long-term or close relationships with audit client's, making professional auditors sympathize for their interests or easily accept the do theirs;

Intimidation threat: threat occurs when professional auditors are prevented from acting objectively due to real or perceived threats, including pressure to improperly influence professional auditors.

Even in the internal audit, the Government also stipulates the professional ethical principles for internal auditors. Recently, the Government has issued a Decree on internal audit, which clearly states the professional ethical principles of internal auditors. In the course of performing the audit and consulting work, internal auditors must ensure to properly comply and maintain the basic principles of professional ethics, including: Integrity, objectivity, professional and due care, competence subject and prudent, confidentiality and professional behavior.

Professional ethics are guidelines for auditors to maintain a correct professional attitude in order to protect and enhance professional reputation. The professional auditors' responsibility is not only limited to meeting the needs of audit client, but also must understand and comply with the provisions of ethical standards for the public interest.

3.2. Apply the professional ethical principles to address threats and issues that arise when performing financial statements audit in the current contexts due to Covid -19

On January 30, the World Health Organization declared that coronavirus (Covid-19) became an urgent public health hazard. Covid 19 epidemic had a comprehensive and profound impact on all countries in the world. The outbreak of the Covid 19 outbreak has caused many challenges for businesses and organizations in all economic sectors. Enterprises have to deal with problems of capital, market, human resources, supply, production... Many businesses have production interruptions, business suspension, job loss, and financial recession. This has a great influence on the truthfulness, reasonableness, completeness and timeliness of financial information as well as the preparation of financial statements of enterprises. In the context of the epidemic, auditors also face enormous challenges.

Reliable and truthful financial reporting and independent auditing are now highly needed by investors and other stakeholders to make appropriate decisions. Trust in financial statements is critical, especially in adverse times, to minimizing damage and redeploying resources for recovery. The application of the Code of Ethics for Professional auditors is key to preservation and expansion of trust of the public for the audit results. Professional auditors must now, more than ever, remain focused on the public interest and their ethical responsibilities. Compliance with the fundamental principles remains an indispensable feature - each draws a sharper meaning in the special circumstances of today.

In this situation, Professional auditors must be flexible, alert and skeptical to maintain fidelity to the fundamental principles. Auditors must be ready to re-evaluate the level of threats and revisit actions they take to maintain independence. The following section of the article addresses *the issues auditors need to pay attention to regarding compliance with professional ethical principles to deal with threats and issues that arise when performing financial statements audits in the context of the Covid 19 pandemic.*

(1). Compliance with the fundamental principles

Professional accountants are required to comply with the five fundamental principles of ethics set out in the Code, i.e., integrity, objectivity, professional competence and due care, confidentiality, and professional behavior, irrespective of their roles, professional duties, and the circumstances in which they perform their professional activities. In the context of the 19 covid epidemic, auditing

firms should also have regulations and guide auditors to comply with ethical principles. Additional instructions are of utmost importance and set against each fundamental principle, including:

+ *Complying with the principle of integrity means being straightforward and honest in all professional and business relationships. It also implies fair dealing and truthfulness.*

In times of crisis, clear, accurate and transparent information takes on even greater importance as employing organizations and clients endeavor to chart paths forward amidst the pressures and uncertainties, and as they seek sources of financial or other support to sustain their businesses and operations. As key players in the financial reporting ecosystem, professional auditors will be called upon to produce, analyze and deliver the information upon which critical decisions will be made. As they do so, it will be important that they live up to their ethical obligation to act with integrity, even when doing so leads to reporting information that is unfavorable. The Code prohibits professional auditors from being knowingly associated with information that is materially false or misleading.

+ *Complying with the principle of objectivity means not compromising professional or business judgment because of bias, conflict of interest or undue influence of others.*

Fear, anxiety and overall concerns about health, finances and the economy are widespread in this pandemic environment. These various sources of stress can affect professional auditors' frame of mind and their ability to assess their employing organizations', customers' or clients' business circumstances objectively. In addition, the assessment of the COVID-19 business or financial implications may be biased by a professional auditor's own views and personal experience with the disease, as well as any concerns about their employment security. In this situation, professional auditors would be prohibited from undertaking a professional activity if a COVID-19 related circumstance would unduly influence the professional auditor's professional or business judgment regarding that activity.

+ *Complying with the principle of professional competence and due care means being diligent; attaining and maintaining professional knowledge and skills to serve employing organizations and clients; and exercising sound judgment in applying such knowledge and skills.*

Professional auditors are reminded that COVID-19 restrictions and challenges do not lessen their obligation to perform their professional duties in a diligent and competent manner, including appropriately supervising others within their spheres of responsibility even in a virtual work environment. Professional auditors are reminded that practical challenges created by the pandemic do not lessen their responsibility to maintain their professional knowledge and skills to serve their employing organizations and clients competently.

+ *Complying with the principle of confidentiality means respecting the confidentiality of information acquired as a result of professional and business relationships.*

In the pandemic circumstances, many employing organizations and firms have transitioned to virtual modes of work to maintain business continuity. It is important for professional auditors in business and in public practice to be alert to the increased security risks to the confidentiality of their employing organizations' or clients' data when using technology tools in a work-from-home setting or transferring the data to their home computers.

Security risks are heightened when employing organizations and firms have not had the opportunity to put in place the appropriate infrastructures, controls, protocols or policies to support the greater use of technology and collaborative tools by a virtual work force.

+ *Complying with the principle of professional behavior means complying with relevant laws and regulations and avoiding any conduct that the PA knows or should know might discredit the profession.*

Many jurisdictions have introduced a variety of laws and regulations in response to the pandemic. These range from laws enacted to protect payrolls or provide fiscal relief to businesses to regulations aimed at protecting public health. In complying with the principle of professional behavior, professional auditors are required to understand and comply with such laws and regulations as might apply to their particular circumstances.

Importantly, in this time of crisis when employing organizations, clients, government agencies and other stakeholders depend so much on the work of professional auditors, it is vital that professional auditors conduct themselves in a manner that upholds the profession's responsibility to act in the public interest and the profession's good reputation.

(2). Auditors face threats that threaten adherence to professional ethics

As mentioned above, during the audit process, there are many subjective and objective reasons that can affect auditors, leading them to face threats of compliance with the principles, ethics above. Auditors must identify and apply protective measures to address identified threats in order to ensure compliance with fundamental principles or independence. Safeguards are actions, individually or in combination, that the PA takes that effectively reduce threats to compliance with the fundamental principles or to independence to an acceptable level.

COVID-19 related health risks and restrictions might make it difficult or impossible to apply a safeguard to address a threat.

If a safeguard is no longer appropriate to reduce a threat to an acceptable level, the auditor must take another action to address that threat. This might involve: (i) applying a different safeguard; (ii) eliminating the relationship or circumstance creating the threat; or (iii) ending the professional activity or service. Understanding the specific facts and circumstances, exercising professional judgment, and using the reasonable and informed third party test will help in deciding whether a safeguard continues to be appropriate or whether other actions should be taken. In addition, communication with management and those charged with governance might assist in informing the appropriate action to take.

(3). Non-compliance with laws and regulations (NOCLAR)

Non-compliance with laws and regulations is any act of omission or commission, intentional or unintentional, committed by an employing organization or client, or by those charged with governance, by management or by other individuals working for or under the direction of the employing organization or client which is contrary to the prevailing laws or regulations.

Professional auditors need to be alert that the pandemic has created significant opportunities for fraud, including procurement fraud (especially for personal protective equipment), online fraud (such as the sale of fake medical goods), fraudulent applications for government support, and charity impersonation fraud. Some businesses might also, intentionally or unintentionally, breach social distancing and other COVID-19-related public health and safety laws and regulations as well as those pertaining to labor and employment-related benefits.

In addition, the pandemic has left many entities grappling with several urgent business and operational challenges, including in relation to human capital, liquidity and solvency. The resulting financial challenges and other pressures might affect the implementation and oversight of organizational policies and procedures that are intended to help ensure compliance with laws and regulations. Consequently, some entities might fail to comply with certain legal or regulatory requirements.

(4). Pressure to Reduce Audit Fees

Many entities are experiencing significant financial strain and even distress due to the COVID-19 pandemic. As a result, firms may face significant pressure from clients to reduce fees for services in progress or to be provided.

The level of fees quoted creates a self-interest threat to compliance with the fundamental principle of professional competence and due care. The fee quoted is so low that it might be difficult to perform the engagement in accordance with applicable technical and professional standards. Auditing firms need to evaluate the level of such a threat and actions that might be safeguards to address the threat.

In the context of an audit engagement, pressure from an audit client to reduce the level of the audit fee might be amplified if the firm needs to perform additional work to address audit issues created by the pandemic. The level of fees might create a self-interest or intimidation threat to independence of auditors. Audit firms should apply the conceptual framework to identify, evaluate and address such threats to independence.

(5). Overdue Fees

For audit engagements, the Code states that a self-interest threat to independence might be created if a significant part of fees is not paid before the audit report for the following year is issued. The Code adds that it is generally expected that the firm will require payment of such fees before such audit report is issued.

Given the unprecedented measures taken by governments around the world to temporarily close businesses and restrict movement to control the spread of COVID-19, many entities are now experiencing major liquidity issues or other financial difficulties. As a result, audit firms may find that some audit clients are unable or unwilling to pay part or all of their outstanding fees. Audit firms should note that when a significant part of fees due from an audit client remains unpaid for a long time, they need to determine whether the overdue fees might be equivalent to a loan to the client, and whether it is appropriate to continue the audit engagement or be re-appointed. If such situations arise, audit firms are encouraged to explore ways to mitigate the potential threats to their independence with management or those charged with governance of their audit clients, such as instituting instalment payment plans.

(6). Non-assurance Services, Including Providing Advice and Assistance

Government lockdown measures to flatten the curve of the pandemic have caused a severe contraction in business for large and small entities alike, leading to significant financial losses and for many the threat of bankruptcy without short-term funding or financial support. Firms may therefore find themselves pressed by audit clients, especially small- and medium-sized entities, for

assistance in their efforts to raise funds from lenders or the broader financial markets or to apply to government programs for COVID-19- related financial support.

Firms may provide such assistance to their audit clients through the provision of specific non-assurance services, for example, the preparation of prospective financial information and valuation engagements. However, to maintain their independence at all times, firms should be especially mindful of the following key provisions:

+ The service must not be prohibited. Some services that are prohibited, especially for audit clients that are public interest entities. Some services are permissible only when certain conditions are met. Audit firms should to review non-assurance services are allowed to provide audit client. For example:

- Providing advice on “applying accounting standards or policies to be applied in the context of the pandemic.

- Support client for “assisting in finance raising transactions”. Auditing firms need to consider in deciding whether and how they can assist audit clients that are experiencing financial pressure due to COVID-19.

+ The non-assurance services must not involve assuming a management responsibility for the audit client. Management responsibilities involve controlling, leading and directing an entity, including making decisions regarding the acquisition, deployment and control of human, financial, technological, physical and intangible resources. When audit firms provide a non-assurance services to an audit client creates self- review and self-interest threats if the firm assumes a management responsibility. Assuming a management responsibility also creates a familiarity threat and might create an advocacy threat because the firm becomes too closely aligned with the views and interests of management.

The non-assurance services must not create a threat to independence that cannot be eliminated or reduced to an acceptable level. The audit firm must apply the conceptual framework to identify, evaluate and address any threats to independence as a result of providing the non-assurance services.

+ The firm must not evaluate or compensate its partners based on success in selling non-assurance services to audit clients.

Where there are specific laws and regulations that apply to the provision of the COVID-19 related non-assurance services to audit clients, firms are also reminded to obtain a full understanding of the legal and regulatory requirements and comply with them.

Firms may also be approached by audit clients to loan some of their personnel on a short-term basis to fill in for client employees who are no longer available due to COVID-19 illness or other related reasons. Audit firms should consider their independence considerations regarding temporary personnel assignments.

Finally, firms should be mindful of any potential conflicts of interest when providing assistance to their clients. For example, a conflict of interest might arise if a firm is involved in assisting a client obtain a COVID-19 related grant while also providing professional services to the government agency in charge of reviewing and approving the grant.

(7). Long Association, Including Partner Rotation

When the audit firms have a long term relationship with the auditor, a requirement to ensure the auditor's independence when performing the audit for the client is to change the auditor annually. However, the audit firms, especially smaller ones, might face the challenge of an unforeseen reduction in resources due to the COVID-19 illness of certain partners, and therefore be unable to execute a planned partner rotation for the audit engagement. If an incoming engagement partner is unable to serve on an audit engagement due to COVID-19 illness, legal regulations allow an exception to the partner rotation requirement, allowing the outgoing engagement partner to serve an additional year provided that certain conditions are met, including obtaining the concurrence of those charged with governance.

(8). Communication with Those Charged with Governance

The COVID-19 pandemic has caused significant disruptions to entities' operations as well as how firms engage with their audit clients, including those charged with governance. Social distancing measures imposed by public authorities as well as safety measures taken by entities and firms might impact the approach to, and timing of, such communications. For example, there may be delays in the communication. Virtual communication channels might also need to be securely established. In some cases, the designated representative(s) of those charged with governance might not be accessible or available because of COVID-19 illness or other related reasons.

It is therefore important for firms to proactively engage with those charged with governance to agree how ethics and independence matters can be effectively raised and discussed in a timely manner. Equally, it might be necessary to agree contingency plans or alternative arrangements if circumstances change. Firms are also reminded to consider whether it is appropriate to communicate about ethics and independence issues arising from the COVID-19 pandemic to all those charged with governance versus a sub-group, such as an audit committee.

4. Conclusion

The rapid spread of the Covid 19 pandemic created economic instability and brought many challenges to society. In addition to the impacts on people, Covid 19 caused disruptions in the production and business activities of enterprises. Enterprises are faced with new risks, so they need to change their management method and operation. As enterprises change their operating methods and organizational structure in response to Covid 19, new risks can arise and become more complicated, forcing auditors to be more important when performing audit activities. The effects of covid 19 may affect the auditor's compliance with the fundamental ethical principles. Auditing firms should review, identify hazards and take the necessary safeguards to ensure compliance with ethical principles. Compliance with ethical principles is the core issue to ensure audit quality, creating confidence for users of audit results./.

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CORPORATE INCOME TAX INCENTIVE POLICY IN VIETNAM: IMPROVEMENT FOR SUSTAINABLE ECONOMIC DEVELOPMENT

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Abstract: *In order to facilitate investment and enhance the attractiveness of the investment environment, tax incentive policy have been applied in most of developing and transition countries including Vietnam. In which, the income tax incentives are used more commonly. In this research, by using some suitable scientific methods, author analyses and assesses the current status of corporate income tax incentives in Vietnam. Research results show that Vietnam's corporate income tax incentive policy has been applied quite effectively, especially in attracting investment, promoting economic growth and realising social goals. However, to meet the requirements of sustainable economic development, corporate income tax incentive policy in Vietnam should be reconsidered to improve properly. Some major solutions would given after the results and discussion in the research.*

Keywords: *tax policy, income tax, income tax incentive policy, policy improvement, sustainable economic development, Vietnam*

1. Introduction

To encourage and attract investment in the specific sector or locality there are many policies are offered. Many developing and transition countries have introduced income tax incentives for investment. The incentives are most often for direct investors as opposed to portfolio investors, relate to real investment in productive activities rather than investment in financial assets, and are often directed to foreign investors on the grounds that there is insufficient domestic capital for the desired level of economic development and that international investment brings with it modern technology and management techniques [1].

The application of tax incentive policy have contributed to the achievements of economic development in NICs such as Republic of Korea, Singapore and Hongkong [2]. Nowadays, most developing economies including Vietnam offer tax incentive policies in which income tax incentives are commonly used. Compliance to corporate income tax regulation is the difficult calculation for enterprises because of their tax expenditure. Therefore, corporate income tax incentives play the big role to attract investment from both foreign and domestic investors.

From 1990 up to now, to encourage both domestic and foreign investments especially in the priority areas and sectors, corporate income tax incentive policy has been applied quite effectively in Vietnam. The incentives from this direct tax have been used much to attract the investors. And

the achievement of corporate income tax incentive policy has been recorded clearly. However, it seems that the corporate income tax incentive policy in Vietnam also has some limitations. Vietnam now is a member of WTO, TPCPP and has to comply with the BTA, EVFTA and the other international commitments. In addition, Vietnam is facing the requirements of sustainable economic development in the context of globalisation. Therefore, the corporate income tax incentive policy in long-term should be reconsidered properly.

The goal of this research is to propose some major solutions to improve corporate income tax incentive policy in Vietnam in the coming years to meet the requirements of sustainable economic development.

2. Literature review and previous research

2.1 Corporate Income tax incentives

There are various classifications of corporate income tax incentives. Holland and Vann divided tax incentives into five groups: (i) tax holiday; (ii) investment allowances and tax credits; (iii) timing differences; (iv) reduced tax rates; and (v) free economic zones [3]. According to Hutagaol, Darussalam and Septriadi, there are three methods of income tax incentives: (i) inter-country agreement; (ii) contractor agreement; and (iii) income tax incentives based on legislation and regulation [4]. Although income tax incentive policy is a significant determinant of economic activity [5], it sometimes has little or no effect [6]. However, income tax incentive policy has been used commonly to encourage investment especially in developing countries [7] as it will give advantages over other investment [8].

2.2 Previous research

Income tax incentives in a fiscal policy that given to stimulate investment in the specific sector/locality by amending the current tax regime and structure. Previous researches in tax structures usually have mixed value judgement and analytical frameworks [9]. And it is an external economics which can be constructive or destructive [10]. Tax played an important role in foreign direct investment (FDI) activity and multinational corporations investment decision [11]. In China, income tax incentive policy is influential determinant of China regional investment as city with lower income tax rate received higher foreign direct investment than with the higher one [12].

3. Methods and materials

In this research, author used some of the scientific methods such as observation, analysis, comparison, synthesis, generalisation. Observation and analysis methods are used to assess the improvement of corporate income tax incentive policies in Vietnam for a long period. Comparison method is used to show the correlation of Vietnam's tax incentives among the regional neighbour countries. Synthesis and generalisation methods help the author to show the results of the research with the relative discussions and solutions. And the experts assessments is also used with the speech that published on the verifiable newspaper. This research based on the hypothesis for harming the sustainability of the economic development in Vietnam if the current tax incentives are not be assessed to show the limitations and to improve more properly. The materials were collected from the data of General Department of Taxation of Vietnam, General Statistics Office

of Vietnam, the other government bodies' information. Materials from Foreign Investment Agency of Vietnam, some International Institutions and NGO's reports were used.

4. Results and discussion

4.1. Improvement of corporate income tax policy in Vietnam in recently years

After a gradual improvement, Vietnam's corporate income tax incentives policy is quite similar to regional countries in ASEAN. It is the comparative advantage that Vietnam could attract foreign direct investment (see Table I).

Table 1. Corporate income tax incentive forms of Vietnam and some ASEAN countries

	Time-limited tax reduction and exemption	Corporate income tax rates incentives
Singapore	Exemption or reduction of corporate income tax for 510 years for investment profits in pioneering industries, tax reduction for extended investment.	Reduce tax on taxable income to 300,000 SGD with tax rates of 0% and 8.5% in the first 3 years.
Philippines	Tax incentives from 6 to 8 years for investment profits in pioneering industries and investment projects in underdeveloped areas; from 4 to 7 years tax exemption for other investment projects.	Tax exemption from 4 to 8 years for enterprises with investment activities in export processing zones.
Thailand	Tax incentives from 3 to 8 years for income from investment projects by region (regions 1,2,3).	Reduce 50% tax rate for 5 years for enterprises investing in encouraged investment areas.
Indonesia	Tax incentives from 3 to 8 years for new businesses.	Probably reduce up to 30% tax rate for 6 years for real investment projects.
Vietnam	Tax exemption for 4 years and 50% tax reduction for the next 9 years or tax exemption for 2 years and 50% tax reduction for the next 4 years (depending on the project by sector or locality, including extended investment).	Prioritized invested projects are entitled to incentive tax rates of 10%, 15% or 17% in 10 years or 15 years.

Source: Research report: Evaluation of Tax preferential policies in Vietnam (2016), Oxfam

On the other hand, the current corporate income tax rate of Vietnam has decreased significantly, about 38.5% compared to 1990, the adjustment of corporate income tax rate in the recent time is appropriate with the common ground of countries in the world and in the region, with the tendency to gradually reduce the common tax rates of countries to create attractiveness and attract investment. The corporate income tax rate decreased from 32% in 1997 to 28% in 2003, 25% in 2009, 22% in 2014 and from 2016 to 20%. Vietnam's corporate income tax incentives and corporate income tax rates are quite similar to regional countries which has significantly increased comparative advantage in attracting foreign investment into Vietnam in the past time. In the meanwhile, the ASEAN countries, typically Malaysia, dropped from 28% in 2005 to 27% in 2007 and 26% in 2008 and 25% from 2009 and 24% from 2016. Thailand has reduced the tax rate from 30% to 23% in 2012 and from 2016 to 20% (Table II). According to Oxfam (2016), Vietnam's corporate income tax rate in ASEAN is higher than that of 2 countries (Brunei, Singapore), which is equal to 2 countries (Cambodia, Thailand) and lower than the other 5 countries [14].

Table 2. Reduced corporate income tax rates in ASEAN-6 (2007-2016)

Year/ ASEAN-6	Singapore	Thailand	Vietnam	Malaysia	Indonesia	Philippines
2007	20	30	28	27	30	35
2008	18	30	28	26	30	35
2009	18	30	25	25	28	30
2010	17	30	25	25	25	30
2011	17	30	25	25	25	30
2012	17	23	25	25	25	30
2013	17	20	25	25	25	30
2014	17	20	22	25	25	30
2015	17	20	22	25	25	30
2016	17	20	20	24	25	30
Change	-15%	-33.3%	-28.6%	-11.1%	-16.7%	-14.3%

Source: Processed from Tobing and Mukarromah (2015), Deloitte and KPMG

According to Law on Corporate Income Tax and the Decrees of the Government detailing and guiding the implementation of Law on Corporate Income Tax, corporate income tax incentives in Vietnam could be showed as below.

Tax incentives in Vietnam can take a number of forms, based around encouraged sectors, locations and project scales, and are granted to new investment projects. (i) Sectors: Encouraged sectors include high-tech enterprises, software development, education, health, environmental protection, scientific research, agricultural and aquatic product processing, renewable energy and infrastructure development. (ii) Locations: Encouraged locations include areas with difficult socio-economic conditions, certain Economic Zones, certain High-tech parks, and approved Industrial Parks. (iii) Project Scale: Large manufacturing projects, meeting either of the below criteria: (i) Projects with a total capital of VND6,000 billion or greater, disbursed within 3 years of being licensed, and: a) Minimum annual revenue of VND10,000 billion by the 4th year of revenue generation, or b) Regularly employing more than 3,000 employees by the 4th year of operations. (ii) Projects with a total capital of VND12,000 billion or greater, disbursed within 5 years of being licensed and using technologies approved in accordance with applicable laws. Incentives provided take two forms, both of which can apply concurrently: a) Tax Holidays and Exemptions. These usually apply from the first profit-making year, or the fourth revenue generating year, and result in a specified period where no tax will apply (often 2-4 years) and/or a 50% reduction of tax for a specified length of time. b) Preferential Tax Rates. These preferential rates can reduce applicable CIT rates to between 10 and 17%, and apply from 10 years to indefinitely for certain projects. In addition, the Government passes incentives from time-to-time for SME businesses which can reduce the primary tax rate applicable during specified tax years [13].

4.2. Achievements of corporate income tax incentives in Vietnam

Firstly, attracting investment and promoting economic growth. The corporate income tax policy has been set out in line with general international practices and Vietnam's development

process. The expansion of beneficiaries of corporate income tax incentives has encouraged the investments in new, modern technology and business widening. The incentives have impacted positively in resource allocation, encouraging and attracting investment selectively to develop regions with difficult and extremely difficult socio-economic conditions. And it has created a number of industries and key fields which are in line with the country's economic development goals in each period. The current corporate income tax incentives in Vietnam are uniformly applied to both domestic and foreign-invested enterprises which have been creating equality for all investors and creating a convenient and transparent business environment for enterprises of all economic sectors. Content of Table 3 could show clearly the positive relationship between corporate income tax incentive (reduced tax rates).

Table 3. Corporate income tax rates and FDI investment in Vietnam

Year	Corporate income tax rates	FDI implemented capital (mil.USD)
2007	28	8,034.1
2010	25	11,000.3
2014	22	12,500.0
2015	22	14,500.0
2016	20	15,800.0
2017	20	17,500.0
2018	20	19,100.0

Source: General Statistics Office of Vietnam

Secondly, realising social goals. With tax incentives by areas and fields, corporate income tax policy has partly helped the regional investment structure change in a positive direction in recent years. The proportion of foreign direct investment in the difficult provinces of the Northern Mountainous Region, the North Central Coast and the Central Coast tends to increase. Some of the least developed provinces have begun to attract a number of large-scale investment projects. For example, in 2014, Samsung Group decided to invest \$3.2 billion in Thai Nguyen province. According to the Ministry of Planning and Investment, since 2006, the structure of FDI by locality has changed in a more positive direction. Poor coastal provinces from Central Vietnam and Mekong River Delta such as Thanh Hoa, Ha Tinh, Phu Yen, Kien Giang have increased their proportion of FDI in the local economic structure.

Thirdly, promoting technological innovation, improving natural environment. Corporate income tax regulation allowed the enterprises to choose the suitable method of fixed asset depreciation and to deduct the cost for production research and development, rewarding initiatives and some more reasonable expenditures while calculating the taxable income.

Fourthly, the clear income tax incentive policies have been being uniformly regulated in legal documents. The Law on Corporate income tax stipulates the preferential transition principle towards: Enterprises having investment projects are entitled to corporate income tax incentives in accordance with the Law on Corporate income tax at the time of licensing or granting investment certificates in accordance with the Law on Investment. If there is a change in the Law on Corporate income tax but the enterprise prefers the conditions for tax incentives under the new laws which

are amended and supplemented, they could choose to enjoy tax exemption or reduction period complying with the provisions of the law at the time of licensing or the newly amended and supplemented law provisions for the remaining time.

Fifthly, ensuring the goal of international economic integration, consistent with the development trend, and being in line with international commitments. Synchronised application of tax incentives and exemption to all economic sectors, types of domestic enterprises and foreign-invested enterprises has created an equal legal environment in production and business to compete and develop together. It also has contributed to promote State-owned enterprises to increase economic accounting in order to meet the requirements of developing multi-sector economy according to the market mechanism. And it could facilitate the implementation of the most favoured nation principle in the global integration process as a member of the WTO, TPCPP as well as a partner of BTA, EVFTA.

4.3. Limitations

Although the innovation of corporate income tax policy in recent years has created many positive achievements in Vietnam as above, but in fact could not avoid some limitations.

Firstly, the impact of tax incentives on the allocation of investment resources is still limited, not attracting FDI into areas with particularly difficult socio-economic conditions. FDI attraction results show that FDI enterprises often focus on areas with favorable infrastructure, such as Hanoi and Ho Chi Minh City. Ho Chi Minh, Dong Nai, Binh Duong, Bac Ninh... which are accounted for nearly 70% of the projects and the total investment of the whole country. Meanwhile, the mountainous, remote and provinces are only accounted for nearly 10% of the total investment [15].

Secondly, the implementation of policies to attract FDI into high-tech projects is still limited, the incentive policies lack synchronization and clarity. According to the previous regulation, the corporate income tax rate for some projects is 10% during the period of operation, but now there are only incentives for 15 years, extended investment projects are not entitled to incentives [16].

Thirdly, preferential high rates and widespread incentives could reduce the state budget revenue. According to data given at the conference of “Towards a fair tax system” (Hanoi, 13rd November 2019), budget revenue decreased from 27.3 per cent of GDP in 2010 to 23.7 per cent in 2016. Revenue from corporate income tax decreased sharply, from 6.9 per cent of GDP in 2010 to 4.3 per cent in 2017. The conference pointed out that although Việt Nam had posted impressive economic growth recently with a ten -year high GDP of 7.1 per cent last year and possible higher growth this year, Việt Nam’s extraordinary economic track record had not been accompanied by a similar pathway in tax revenues. Though tax incentive policies had contributed to the country’s economic growth, boosting investment, the conference thought it was time for Vietnam to rationalise such incentives for big companies as lowering corporate income tax rates and the existence of many tax incentives for foreign investors had decreased tax revenues. “In the long term this could harm the sustainability of the country,” Oxfam’s tax policies expert Johan Langerock told Viet Nam News [17].

Corporate income tax incentives for all subjects including preferential tax rate and tax exemption and reduction, the incentives are quite high, wide and spread. There are 30 fields of investment encouragement and 27 fields of special investment incentives that are entitled to investment incentives, including tax incentives. The income tax incentive policy is applied to 54/63 provinces where investment

is given incentives. High-tech zones, economic zones, industrial parks and export processing zones established under the Prime Minister's decisions are also subject to tax incentives [18].

Fourthly, corporate income tax incentives not only create loopholes for foreign tax avoidance enterprises but also generate illegal tax evasion activities. Statistics of Vietnam Chamber of Commerce & Industry (VCCI) shows that each year about 40-50% of FDI enterprises in Vietnam declare losses. In particular, many enterprises suffered losses continuously for many years but continued to operate and even expand their scale [19]. The criteria for applying the current tax incentives based on the sector/locality require a large capital investment. In comparison with domestic enterprises which particularly are small and medium, most FDI enterprises, with the strength of capital, are able to invest in the fields and areas that attract the investment of the Government. Beneficiaries of corporate income tax incentives in Vietnam over the past time are mainly FDI enterprises.

Current income tax incentives tend to attract short-term instead of long-term investments. In Vietnam, the corporate income tax incentives mainly based on profits of enterprises. In which, incentives for reducing tax rates, applying tax exemption and reduction period are the most popular. Other forms of tax incentives such as deduction of payable tax amounts and investment-based tax deductions are not yet applied. Incentives for a period of tax exemptions tend to attract short-term investments, rather than long-term projects. With the preferential tax exemption and reduction period policy, after the end of the tax incentive period, the enterprises normally change their investment projects to enjoy the new preferential period to maximize profits. Preferential policies on tax exemption and reduction periods can encourage the enterprises to avoid taxes through investment restructuring into new investment projects to continue enjoying incentives.

Fifthly, the implementation of the corporate income tax incentives is still quite complicated and through many administrative procedures. In some cases, it requires the teamwork of many different government's bodies. The tax incentives have been set with too many different ambitions and goals for each type of incentive. Tax incentives also incorporates social policies and are also specified in specialised legal documents. The current tax incentive policy with the goal of attracting investment has not approached closely with the goal of promoting internal strength of the economy. The applied tax incentives are simple, mainly the tax exemption and reduction preferences and incentives for economic zones that are too high in comparison with the international practices.

4.4. Solutions for the long-term policy of corporate income tax incentive in Vietnam

In order to improve the efficiency of corporate income tax incentives for the long-term of sustainable economic development in Vietnam, some major solutions are proposed below:

Vietnam needs to ensure macroeconomic stability and improve competitiveness through economic structural reform. Tax incentives in general and CIT incentives in particular may have the effect of encouraging investment but not the best solution because of macroeconomic stability and a healthy institutional environment as the most important factor in the success of an investment project [20].

- Amending and supplementing corporate income tax incentive policies for FDI projects on the principle of not only with branches and sectors but also with regions and territories [21].

- Implementing corporate income tax incentives selectively in order to reduce the negative impacts of tax incentives while promoting investment attraction in sectors and areas that must be encouraged and enhances domestic competitiveness to attract investment among the neighbour countries. Tax incentives must stick to the State's socio-economic development strategies in each period. Vietnam should implement general tax incentives selectively and review the areas that need to attract investment capital to effectively attract investment and minimise the issuance of new policies.

- Eliminating tax incentives for industrial zones and economic zones. It is inline with the roadmap of tax incentives for developed fields in width and depth, without maintaining the investment attraction tax incentives for areas in economic zones and industrial zones but on the list of geographical areas with favorable socio-economic conditions. This is necessary because by the current regulations, the tax incentives for economic zones and industrial zones are similar to those in difficult socio-economic areas, leading to investors who invested in economic zones but have more favorable areas than investment in difficult socio-economic areas.

- Eliminating corporate income tax incentives relating to tax social policies. These social incentives can be realised through state budget outcome.

- Abolishing the forms of tax exemption and reduction incentives and increase the use of other preferential forms to attract investment. Vietnam should apply a number of other investment incentives that running in the other countries around, such as: subsidies or tax deductions for investments. For these types of incentives, there should be preventive provisions to minimize the fact of enterprises taking advantage of such as: setting the minimum time to use the property to enjoy the incentives. If the actual usage time is less, enterprises are required to return the incentives they have enjoyed.

- Using corporate income tax incentives to encourage the high technology application through the simplification and transparency of procedures for applying for certification in these fields. Supplementing preferential policies for a number of service industries such as education, finance, tourism, high-tech manufacturing ... to create higher and more sustainable added value. Applying preferential corporate income tax rates to the fund management companies to attract foreign capital sources to invest in medium and long term in Vietnam.

- Offering more tax incentives for small and medium enterprises (SMEs) and supporting businesses in Vietnam. Preferential corporate income tax rates should be applied to SMEs. Propose the ordinary tax rate of small and medium enterprises lower than that of other ones and apply for a certain period of time. Fixing tax exemption and reduction for small startups and eligible business households to convert into companies. In order to encourage the development of SMEs, there should be corporate income tax incentives for these subjects in the early stages of establishment or transition from business households to companies, such as: (i) allow micro enterprises to use simple tax returns.;(ii) applying cash accounting for small or micro businesses.

- Issuing tax incentive policy on clear criteria. Criteria for tax incentives should be clearly established so that businesses can easily access the incentives as well as ensure compliance with the law and State management. Susch as, (i)Base on the field of attracting investment. This field must be associated with high technology and environmental protection in current conditions; (ii)

Reduce and progressively remove local incentives, which can be realized through state budget using; (iii) Include more criteria for localisation rates and technology transfers in the development of incentive policies to promote the development of supporting industries; (iv) Base on the size of the business to offer different incentives to support small and medium enterprises in Vietnam. However, this criterion should only be maintained for a certain period of time.

- Building tax incentives in sync with the other legal policies to ensure compliance with international practices and control price transferring. In order to ensure international practices without affecting state budget revenues and the competitiveness of the domestic economy, Vietnam's tax incentive policy needs to be improved in the direction: (i) Ensure the consistency of the legal system and enhance the effectiveness of tax legal documents. (ii) Increase the contractor tax rates for foreign enterprises in Vietnam is equal to the corporate income tax rate (iii) Review the contractor tax policy, raise the contractor tax rate to be equal to the corporate income tax rate in order to reduce the price transferring. (iv) Use flexible tax policies to control the inflow of foreign investment. Corporate income tax incentives need to include additional criteria on environmental protection and technology when attracting investment, for example, cost incentives are deducted when businesses invest in environmental remediation. Corporate income tax refund is applied when businesses use profits to re-invest in projects that are particularly encouraged to invest; (v) Control outflow of indirect capital flows by several flexible tax rates.

5. Conclusion

In summary, the corporate income tax incentive policy has been amended many times in the direction of attracting investment, offering specific and clear criteria of incentives. Tax savings from the incentive could be reinvested and are contributed positively to development growth. The innovation and improvement of corporate income tax incentive policy also create a chance of improving the business environment, increasing the advanced competition in comparison with the other regional countries in attracting foreign investment.

However, the application of corporate tax incentive policy in Vietnam in recent years still shows many limitations. Therefore, the tax incentive policy must be assessed and reconsidered fully to improve timely. The above current status of corporate income tax incentives and the given solutions which are goal of the research could prove the mentioned hypothesis. And Vietnam' sustainable economic development would move forwards in the right direction with many investment incentives in which the innovated and improved corporate income tax incentive policy plays a important role.

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PROBABILISTIC PREDICTION OF BANKRUPTCY OF LISTED STEEL ENTERPRISES IN VIETNAM

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Abstract: *The article studies the factors affecting the bankruptcy risk, thereby forecasting the bankruptcy risk of listed steel companies in Vietnam. By using the qualitative research methods and quantitative research method, the author has identified factors that affect bankruptcy risk including size, liabilities-to-assets, working capital-to-assets, liquidity, return on asset, cash flow from operations-to-assets and growth rate of net income. The empirical results show that size, liabilities-to-assets and growth rate of net income are important predictors of bankruptcy of steel enterprises listed in Vietnam. While liabilities-to-assets has the positive coefficient, size and growth rate of net income have the negative coefficient. Research results are important evidence for managers in business management.*

Keywords: *Bankruptcy, Listed enterprises, Steel industry*

1. Introduction

In recent years, steel companies listed in Vietnam have grown rapidly. However, the business performance is not stable and quite low. The difficulties of the economy have caused many businesses to suffer losses or even fall into bankruptcy. Business performance is low partly due to steel oversupply. In the period from 2015 to 2017, Vietnam's steel market achieves a good growth rate, about 15% per year on average. Especially, in 2015 steel production reached more than 15 million tons, increasing by 22%; in 2016 reached more than 17.8 million tons, increasing by 19% and in 2017 reached more than 22.1 million tons, increasing by 24%. But from 2018 up to now, with the decline of the real estate market, the trend of protection, natural disasters and epidemics, the financial situation of steel enterprises has become difficult. Production capacity in Vietnam only mobilizes 63% capacity on average, lower than the world average capacity of about 76.9%.

These issues make steel enterprises in Vietnam pay attention to the problem of corporate financial management, with the focus on establishing a strong financial resource and forecasting the risks of bankruptcy. This will help steel companies maximize their firm value, limit financial risks and serve as a solid foundation to help businesses overcome external fluctuations, helping to reduce the risk of bankruptcy.

This paper studies the factors and predicts the bankruptcy of steel companies listed in Vietnam by quantitative research method through logistic model. The article answers the questions: (i) What factors affect the bankruptcy risk of steel companies listed in Vietnam; (ii) Forecast risk of bankruptcy of listed steel companies in Vietnam.

2. Literature Review

Regarding the risk of business bankruptcy, there are quite a lot of related researches in the world.

Firstly, the research of Edward I. Altman (1968) on financial ratios, multiple discriminant analysis to predict the probability of bankruptcy. The author considers 22 potential financial ratios, which are classified into 5 groups of variables including liquidity, profitability, financial leverage, solvency, and efficiency ratio. These groups of variables were selected on the following basis: (1) previously published studies, (2) potential relevance to the paper and (3) some newly created ratio. From the list of 22 initial financial ratios, the study selected five variables to include in the model for predicting the probability of bankruptcy. The study found that all firms with Z-Score greater than 2.99 were in the group of non-bankrupt businesses or safety zone, while the firms with the Z-Score lower than 1.81 were in the bankruptcy group, or distress zone. The multiple discriminant analysis is extremely accurate in predicting bankruptcy, correctly forecasting 94% of the original survey. However, the research paper is limited to only surveying large manufacturing enterprises and there are errors in the classification of firms as bankrupt and non-bankrupt.

Meanwhile, James A. Ohlson (1980) studied on financial ratios and prediction of bankruptcy. The main findings of the research can be summarized briefly as follows: First, the ability to identify four groups of statistically important factors that affect the probability of bankruptcy (within a year), these are: (1) size, (2) financial structure, (3) efficiency, and (4) liquidity. Second, previous studies have magnified the power of bankruptcy predictive models and its tests. Another problem is that forecasting factors (financial ratios) are taken from financial statements released after the bankruptcy date, then evidence shows that these factors will predict risk of bankruptcy.

In addition, Evridiki Neophytou, Andreas Charitou, and Chris Charalambous (2000) in their study of bankrupt prediction developed a model of classifying bankruptcy of industrial companies for the UK, using logistic analysis. The data consisted of 51 pairs of bankrupt and non-bankrupt industrial firms in the UK between 1988 and 1997. The forecasting model was developed until three years before the bankrupt event occurred. The results show that a model consisting of three variables - profitability, operating cash flow and financial leverage can accurately explain the overall 83% of bankruptcy by one year. The model can help managers, shareholders, financial institutions, and auditors in the UK predict financial crisis.

Research by Ming Xu and Chu Zhang (2008) on bankruptcy prediction of Japanese listed firms between 1992 and 2005. The authors show that the traditional measures such as Altman's Z-score (1968), Ohlson's Oscore (1980) and option pricing developed for the US market are also very useful for the Japanese market. Furthermore, the predictive power is significantly strong when these measures are combined. The results show that bankruptcy prediction based on option valuation method is more successful than methods based on accounting variables.

Ben Chin-Fook Yap, David Gun-Fie Yong and Wai-Ching Poon (2010) research on financial ratios and multiple discriminant analysis (MDA) to predict failure of Malaysian firms. The aim of the paper is to develop a model to improve bankruptcy prediction for businesses after a period of restructuring with different financial, business and operating conditions in the context of Malaysia. A total of 64 firms were analyzed with 16 financial ratios. A MDA model with 07 financial ratios found to be statistically significant in forecasting with high accuracy rates. Seven financial ratios

are: Total assets to total liabilities (FFTL), cash flow to total long term debt (CFTD), total long term liabilities to total assets (TDTA), working capital to total assets (WCTA), retained earnings per total assets (RETA), pre-tax and interest income (EBIT), and net income on sales (NIS).

In Vietnam, there are also many studies relating to this subject. Typically, the study of Hay Sinh (2003) is about the estimates of bankruptcy probability in corporate valuation. According to the author, the probability of bankruptcy is a financial parameter which has direct influence on the corporate value. However, when making valuation using cash flow approach, the probability of bankruptcy, which has not been estimated as a dependent parameter, is often expressed in the discount rate. Meanwhile, the adjusted present value (APV) method has a newer approach when treating the marginal effect of debt and estimates the probability of bankruptcy as independent parameters. The author has given two methods to estimate the bankruptcy probability of an enterprise which are: (1) Depending on the adjusted Z score of Altman (1968); and (2) Depending on the internal credit ratings system of commercial banks by Decision No 493/2005/QĐ-NHNN dated 22/4/2005 issued by State Bank of Vietnam.

In addition, Le Nguyen Son Vu's study of investment decisions and bankruptcy risks of listed companies in Vietnam stock market (2013) has provided empirical evidence about the influence of financial ratios on investment decisions and bankruptcy risks of listed companies on Vietnam stock market in the period of 2003-2012. In the research, the author also classifies companies in the sample into five sectors to conduct further research which are Securities, Real estate, Construction - Construction materials, Foods and Beverages, Personal - household goods. When studying the entire sample, there is positive correlation between three factors of liquidity, negative net income in the last two years and the liabilities exceeds the total asset, and at the same time the Return on asset and net income growth have negative correlation with O-Score. Meanwhile, the remaining four factors which are firm size, liabilities-to-assets, working capital-to-total assets and operating cash flows-to-liabilities also have influence on the O-score but there is no statistical meaning.

In summary, empirical studies both inside and outside the country show that there are many different factors what affect the bankruptcy risks of companies. The factors that may affect bankruptcy risks include: firm size, liquidity ratio, return on asset, liability-to-total assets, equity-to-total asset... However, with different data sample in different period, the studies have given different conclusion. Therefore, in order to know which factor really have influence on the bankruptcy risk of companies, it is necessary to consider and analyze based on specific characteristics of object of the study. In Vietnam, there are many studies about the bankruptcy risks in particular as well as risks in general of the companies, however there is no specific study about the factors affecting the bankruptcy risk of listed steel enterprises. Therefore, on the basis of inheriting the advantages of previous study, this study will add to the research gap on bankruptcy risk, analyze the factors that have influence on bankruptcy risks of listed steel enterprises in Vietnam.

3. Research methods

3.1. Research model

Referred to previous studies (Greene, 2012; James A. Ohlson, 1980; Le Nguyen Son Vu, 2013), the model which is used to study the factors that have influence and forecast the bankruptcy of listed steel enterprises in Vietnam has following form:

$$\ln() = \beta_0 + \beta_1 * \text{SIZE} + \beta_2 * \text{TLTA} + \beta_3 * \text{WCTA} + \beta_4 * \text{CLCA} + \beta_5 * \text{NITA} + \beta_6 * \text{FUTL} + \beta_7 * \text{INTWO} + \beta_8 * \text{CHIN} + u_i$$

In which, BR is the bankruptcy probability of the company, SIZE - size of the company, TLTA – Total liabilities-to-total asset, WCTA – Working capital-to- total assets, CLCA – Current liquidity, NITA – Return-on-total asset, FUTL – Net cash flow from operating activities-to-total liabilities, INTWO – Negative net income in two continuous years, CHIN – Net income growth rate.

3.2. Variables and measures

Dependent variable: Bankruptcy risk of enterprises (BR)

BR takes value of 1 if the enterprise has bankruptcy risk in the next year and 0 otherwise. Especially, BR is measured on the basis of the estimates of Altman Z-Score’s model:

$$\text{Z-score} = 1,2 * A + 1,4 * B + 3,3 * C + 0,6 * D + 1,0 * E$$

In which:

$$A = \frac{\text{Working capital}}{\text{Total asset}}$$

$$B = \frac{\text{Retain earnings}}{\text{Average total asset}}$$

$$C = \frac{\text{EBIT}}{\text{Average total asset}}$$

$$D = \frac{\text{Market price of shares} \times \text{Number of outstanding shares}}{\text{Total liabilities}}$$

$$E = \frac{\text{Net revenue}}{\text{Average total asset}}$$

If $Z < 1,81$ then $BR = 1$, if $Z > 1,81$ then $BR = 0$

Independent variables:

(i) Size of enterprises (SIZE): According to the research of James A.Ohlsion (1980), Ming Xu and Chu Zhang (2008), the size of enterprises has inverse relationship with bankruptcy risk of an enterprise. The larger the size, the lower the bankruptcy risk of the enterprises and vice versa. In this study, the size of enterprises is calculated by logarithm of 10 of the total asset.

(ii) Total liabilities-to-total-asset (TLTA): According to James A.Ohlsion (1980), Ming Xu and Chu Zhang (2008)’s study, total liabilities-to-total asset has positive coefficient with the bankruptcy risk of an enterprise. The higher the total liabilities-to-total asset is, the higher the bankruptcy risk, meanwhile the enterprise which has low ratio will less likely to face the bankruptcy risk. In this study, total liabilities-to-total assets is calculated by the financial ratio between total liabilities divided by total asset in the period.

(iii) Working capital-to-total asset (WCTA): According to study of Edward I. Altman (1968); James A. Ohlsion (1980); Ming Xu and Chu Zhang (2008); Ben Chin-Fook Yap, David Gun-Fie Yong and Wai-Ching Poon (2010), the factor of liquidity is one of important factors in predicting

the bankruptcy probability. The higher the liquidity, the lower the bankruptcy risk is and vice versa. In this study, working capital-to-total asset (WCTA) is calculated by the ratio of the difference between current assets and current liabilities divided by total asset.

(iv) Current-liabilities-to-current-assets: According to James A. Ohlson (1980)'s study (1980), the authors assume that the lower the current liabilities-to-current asset, the higher the bankruptcy risk of enterprises is and vice versa. In this study, current liabilities-to-current asset (CLCA) is calculated by the financial ratio between the current liabilities divided by the current assets in the period.

(v) Net income-to-total assets: According to Edward I. Altman (1968), James A. Ohlson (1980), Evridiki Neophytou, Andreas Charitou and Chris Charalambous (2000); Ming Xu and Chu Zhang (2008); Ben Chin-Fook Yap, David Gun-Fie Yong and Wai-Ching Poon (2010)'s study, the return on total asset ratio is one of important factors in assessing the bankruptcy risk of enterprises. When the return of an enterprise is low and lasts for years then the bankruptcy risk of the enterprise is high, and vice versa. Based on the study of James A. Ohlson (1980), this article measures the ratio of net income to total asset (NITA) by the financial ratio between net income divided by total asset.

(vi) Net cash flow from operating activities-to-total liabilities: According to the study of James A. Ohlson (1980), this ratio has inverse relationship with bankruptcy risk of an enterprise. If the net cash flow from operating activities-to-total liabilities is higher, the bankruptcy risk of the enterprise is lower and vice versa. In this study, the net cash flow from operating activities to total liabilities is calculated by the ratio between net cash flow from operating activities and total liabilities.

(vii) Business and operating results (INTWO): This ratio shows the ability to make profit of enterprises in consecutive years. INTWO will take value of 1 if the net income is negative in two continuous years, in other cases it will take value of 0. In the study of James A. Ohlson (1980), this ratio has positive relationship with bankruptcy risk of enterprises in the next one year.

(viii) Net income growth rate (CHIN): According to the research of James A. Ohlson (1980), Ming Xu and Chu Zhang (2008), the growth of net income has negative coefficient with the bankruptcy risk of an enterprise. If the enterprise has higher net income growth rate, the bankruptcy risk is lower, and vice versa. In this study, net income growth rate (CHIN) is calculated by $CHIN_t = (NI_t - NI_{t-1}) / (|NI_t| + |NI_{t-1}|)$ with NI_t is the net income in the most recent period.

Table 1 below summarize the factors that have influence on bankruptcy risk of enterprises, the way to measure those factors, systemize the hypotheses about the influential way of those factors to bankruptcy risks of enterprises and give the basis for those hypotheses from the relevant theories and empirical results.

Table 1. Summary of factors that have influence on bankruptcy risk of steel companies

No	Factors	Calculation	Sign expectation	Basis/Sources
1	Size of the enterprise	SIZE = Log(Total asset)	-	James A. Ohlson (1980), Ming Xu and Chu Zhang (2008)
2	Total liabilities to total assets	TLTA=Total liabilities/Total assets	+	James A. Ohlson (1980), Ming Xu and Chu Zhang (2008)

3	Working capital to total assets	$WCTA = (\text{Current assets} - \text{Current liabilities}) / \text{Total assets}$	-	Edward I. Altman (1968); James A. Ohlson (1980); Ming Xu and Chu Zhang (2008); Ben ChinFook Yap, David Gun-Fie Yong and Wai-Ching Poon (2010)
4	Current liquidity	$CLCA = \text{Current liabilities} / \text{Current assets}$	+	James A. Ohlson (1980), Ming Xu and Chu Zhang (2008)
5	Return on assets	$NITA = \text{Net income} / \text{Total assets}$	-	Edward I. Altman (1968); James A. Ohlson (1980); Evridiki Neophytou, Andreas Charitou and Chris Charalambous (2000)
6	Net cash flow from operating activities to total liabilities	$FUTL = \text{Cash flow from operating activities} / \text{Total liabilities}$	-	James A. Ohlson (1980), Ming Xu and Chu Zhang (2008)
7	Business results	INTWO equals 1 if net income is negative in two consecutive years, otherwise equals 0	+	James A. Ohlson (1980), Ming Xu and Chu Zhang (2008)
8	Net income growth rate	$CHIN = (NI_{it} - NI_{it-1}) / (NI_{it} + NI_{it-1})$	-	James A. Ohlson (1980), Ming Xu and Chu Zhang (2008)

Source: Author's synthesis

3.3. Research data

The number that the study use for quantitative study is taken from Financial Statement with the research objects which are listed steel companies in Vietnam in HNX and HOSE in the period from 2015 to 2019.

Table 2 statisticizes the number of listed enterprises in the steel industry by stock exchange in Vietnam. The overall sample of the study consists of 18 enterprises in 5 consecutive years.

Table 2. Number of listed steel enterprises on Vietnam stock exchanges

Stock Exchange	Number of enterprises	Proportion
HNX	8	44,44%
HOSE	10	55,56%
Total	18	100%

Source: The author integrate and calculate from Stockplus

4. Research results and discussion

4.1. Descriptive statistics of variables in the model

Table 3 shows the descriptive statistics of variables in the research model. The average scale of listed steel enterprises is above 1,600 billions. Total liabilities to total assets of steel enterprises is 61.51% in average. Meanwhile, the profitability on total assets and net income growth of those enterprises is 3.61% and -5.82% in average.

Table 3. Descriptive statistics of variables in the model

	N	Minimum	Maximum	Mean	Std. Deviation
SIZE	90	2.04682963213	5.00764550667	3.21930424087	.691501690700

TLTA	90	.286711696735	.870755824036	.615059714936	.139056980557
WCTA	90	-.093176090509	.592798379174	.146625120870	.150273174382
CLCA	90	.325990235460	1.17267272856	.811475415773	.186114484407
NITA	90	-.116402334419	.254514965913	.036111813222	.067078835330
FUTL	90	-1.23543998424	1.01314783774	.042404048550	.285153560475
INTWO	90	.0000	1.0000	.044444	.2072349
CHIN	90	-1.000000000000	1.000000000000	-.058240743039	.590887926584

Source: Calculation of the author based on SPSS software

4.2. Estimated results and discussions

* Estimated results and model test

- Estimated results and Wald test:

Using SPSS software to conduct logistic model with dependent variable of BR and independent variables of SIZE, TLTA, WATA, CLCA, NITA, FUTL, INTWO, CHIN shows the results as followings:

Table 4. Wald test

		B	S.E	Wald	df	Sig.	Exp(B)
Step 1 ^a	SIZE	-3.827	1.721	4.946	1	.026	.022
	TLTA	.280	.133	4.440	1	.035	1.323
	WCTA	-.871	.468	3.468	1	.063	.419
	CLCA	-.489	.330	2.191	1	.139	.613
	NITA	-.242	.239	1.022	1	.312	.785
	FUTL	.744	3.089	.058	1	.810	2.104
	INTWO	4.130	3.766	1.203	1	.273	62.187
	CHIN	-4.144	1.803	5.282	1	.022	.016
	Constant	40.217	30.563	1.732	1	.188	2.925

Source: Calculation of the author based on SPSS software

However, the results obtained from the model shows that there is independent variable which has no statistical meaning when Sig value > 0.05. Eliminating variables that have no statistical meaning, the following model is obtained:

Table 5. Logistic model to estimate the factors that have influence on bankruptcy risk of listed steel enterprises in Vietnam

		B	S.E	Wald	df	Sig.	Exp(B)
Step 1 ^a	SIZE	-1.454	.720	4.078	1	.043	.234
	TLTA	.294	.094	9.864	1	.002	1.342
	CHIN	-3.866	1.248	9.601	1	.002	.021
	Constant	-18.521	6.610	7.850	1	.005	.000

Source: Calculation of the author based on SPSS software

- The suitability of the model (Omnibus test):

Based on the model suitability testing’s results, we have Sig. <0.05 thus the overall model shows that the correlation between the dependent variable and the independent variable in the model has statistical meaning with over 99% confidence intervals.

Table 6. Omnibus test

		Chi-square	df	Sig.
Step 1	Step	45.118	3	.000
	Block	45.118	3	.000
	Model	45.118	3	.000

Source: Calculation of the author based on SPSS software

- Testing of the model’s explanation

The model’s explanation Nagelkerke R Square = 0.649. This means 64.9% of the change in dependent variables is explained by independent variables of the model, the rest is caused by other factors.

Table 7. Testing the model’s explanation

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	39.123 ^a	.394	.649

Source: Calculation of the author based on SPSS software

- Testing the accuracy of the model:

In 74 observations that have no bankruptcy risk, the accuracy forecast model is 69 with the accuracy rate of 93.2%. In 16 observations which have no bankruptcy risk, the accuracy forecast model is 9, with the accuracy rate of 56.3%.The rate of accuracy of the whole model is 86.7%.

Table 8. Testing the accuracy in forecast of the model

Observed		Predicted			
		BR		Percentage Correct	
		0	1		
Step 1	BR	0	69	5	93.2
		1	7	9	56.3
Overall Percentage					86.7

Source: Calculation of the author based on SPSS software

*** Discussions of the results**

The results of the study show that variables of size, total liabilities to assets and net income growth rate have influence on bankruptcy risk of the enterprises. On the contrast, other variables by coefficient has no statistical meaning so other variables have no influence on bankruptcy risk of listed steel enterprises in Vietnam.

(i) Size of enterprises (SIZE): The results of the study show that the size is inversely proportional with bankruptcy risk of steel enterprises. The larger the business scale, the lower the risk of bankruptcy because the larger the scale, the greater the competitiveness of enterprises compared to other

competitors in the same industry, the stronger the financial potential. Especially, if the probability of an enterprise in danger of bankruptcy is initially 10%, when the other factors do not change, if the log(TS) of the enterprise increases by 1 unit, the probability of the business bankruptcy is:

$$P_1 = \frac{10\% \times e^{-1.454}}{1 - 10\% \times (1 - e^{-1.454})} = 2.53\%$$

This means when the size increases by 1 unit, the probability of bankruptcy risk decreases by 7.47% compared to the initial probability.

(ii) Total liabilities to total assets (TLTA): The result of the study shows that total liabilities over total assets is proportional with bankruptcy risk of steel enterprises. Accordingly, the enterprises which have higher debt ratio have high bankruptcy risk, as the majority of the enterprises in Vietnam is small and medium enterprises and do not have stable finance to overcome when the economy encounters shocks. On the other hand, due to features of the industry, enterprises in this industry usually have high debt ratio. Specifically, if the probability of enterprises which have bankruptcy risk initially is 10%, then other factors do not change, if the liabilities to total assets of the enterprises increase by 1 % then the probability of bankruptcy of the enterprises is:

$$P_1 = \frac{10\% \times e^{0.294}}{1 - 10\% \times (1 - e^{0.294})} = 12.98\%$$

This means when the liabilities-to-total asset of enterprises increases by 1% then the probability of bankruptcy risk decreases by 2.98% compared to initial probability.

(iii) Net income growth (CHIN): The results of the study show that net income growth rate are inversely proportional with bankruptcy risk of steel enterprises. The enterprises which have higher net income growth rate then the bankruptcy risk is lower. Especially, if the probability that enterprises have bankruptcy risk is initially 10% when other factors are unchanged, if the net income growth rate increase by 1% then the probability that enterprises go bankrupt is:

$$P_1 = \frac{10\% \times e^{-3.866}}{1 - 10\% \times (1 - e^{-3.866})} = 0.23\%$$

This means when net income increases by 1% then the probability of bankruptcy decreases by 9.77% compared to initial probability.

So, among variables that have statistical meaning, the variable of net income growth rate (CHIN) have the greatest influence, the second is size of enterprises (SIZE) and the last is Total liabilities to total assets.

Table 9. Integration of variables that have statistical meaning in the model

Independent variables	Expected influence	Estimated influence	Initial probability P_0 =10%	Rate of change	Position of influence
			P_1		
SIZE	-	-	2.53%	-7.47%	2
TLTA	+	+	12.98%	2.98%	3
CHIN	-	-	0.23%	-9.77%	1

Source: Integrated by the author

From the results of the logistic regression analysis above, the logistic correlation equation showing the relationship between factors to bankruptcy risk of listed steel enterprises in Vietnam is written as follows:

$$\ln\left(\frac{P(BR=1)}{P(BR=0)}\right) = -18.521 - 1.454*SIZE + 0.294*TLTA - 3.866*CHIN$$

The probability of enterprises to go bankrupt when independent variables take value of X_i is:

$$E\left(\frac{BR}{X}\right) = \frac{e^{-18.521 - 1.454 \times SIZE + 0.294 \times TLTA - 3.866 \times CHIN}}{1 + e^{-18.521 - 1.454 \times SIZE + 0.294 \times TLTA - 3.866 \times CHIN}}$$

5. Conclusion

The bankruptcy risk of enterprises is one of the important issues that is concerned by all corporate financial executives. In order to make reasonable and effective financial decisions, managers of enterprises need to have a firm grasp of theories in investment, capital, at the same time have research on the factors that have influence on bankruptcy risks of their enterprises. The article analyzes factors that have influence on bankruptcy risk of listed steel enterprises. The result of the study show influential factors to bankruptcy risk of listed steel enterprises in Vietnam which includes: Size of enterprises (-), Total liabilities to total assets (+) and net income growth rate (-). While the total liabilities-to-total asset has positive influence to bankruptcy risk of enterprises, firm size and net income growth rate have negative impact. This result is consistent with economic theory.

Based on the research results achieved, the article suggests a number of implications for corporate governance policies such as expanding business, improving business performance or adjusting debt ratios to be reasonable. . The empirical research results have shown that the growth rate of profit after tax has a negative impact on the business bankruptcy risk. The increase in profit after tax will reduce the risk of bankruptcy of enterprises. Sustainable growth in profit after tax creates financial flexibility for enterprises, reduces endogenous financial obstacles and helps enterprises to reduce dependence on loans. When enterprises have abundant endogenous capital, they will have the necessary financial autonomy. To achieve these goals, it is essential for enterprises to improve their business efficiency. To reduce the debt ratio, in addition to methods to increase equity capital, enterprises should also consider a fairly popular form in the world that is financial leasing, which does not require a prior guarantee, which not only helps enterprises to access new forms of credit but also relieves pressure on collateral.

Although the research has answered the questions raised, the research still has limitations which are the research model that only focuses on analyzing the influence of internal factors of enterprises, while external factors and factors that have not been able to be quantified into the model have not been mentioned. The author hopes to overcome this limitation in the next studies.

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PUBLIC VS. PRIVATE BLOCKCHAINS: THE RACE TO OWN THE FUTURE OF PAYMENTS

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Abstract: *This paper aims to analyze the similarities and the differences between public and private blockchain. It also demonstrates whether public or private blockchain is the best solution for the future of payments and how to bridge the gap between public and private blockchain, through synthesizing information from different reliable sources and journals, the paper indicates the pros and cons of each type of blockchain. As a result, private blockchain is a better choice for big and private companies, especially financial institutions. There are also some current applications of private blockchain in supply chain, insurance and banks. Bridging the gap between public and private blockchain known as hybrid blockchain, is also another solution for large corporations, especially banks.*

Key word: *Public blockchain, private blockchain*

1. INTRODUCTION

Blockchain technology, referred as Distribution Ledger Technology (DLT), is an efficient, transparent and resilient ledger that allows people to record, encrypt data and securely make transactions using cryptography. Blockchain was invented in 2008 to serve as public transaction ledger of the cryptocurrency bitcoin. The technology has developed to become so popular and prevalent that the number of blockchain start-up companies have been increasing every year. Nowadays, there are around 3,000 cryptocurrencies being traded on the market. They can be traded as public means of transactions as well as private ledgers mainly for business-to-business transactions. Public and private blockchains deliver different values to users as each of them can be used differently. They have some similarities and differences and they both provide advantages and disadvantages. There have been many debates on whether public or private blockchains will deliver the most value. Although public blockchain is much more popular, private blockchain seems to be a better choice for large corporations and financial institutions. In the future, will private blockchain deliver more value than public blockchain? How are financial institutions innovating and helping bridge the gap between these two? Through synthesizing information from different journals, this paper indicates the pros and cons, the similarities and differences between public and private blockchain; Also, it analyzes the appropriate type of blockchain for the future of payments.

2. Public blockchain versus private blockchain

2.1 Public blockchain

The bankruptcy of Lehman Brothers in 2008 prompted the economic recession of many prominent countries. One element that caused the crisis was the use of centralized payment and monetary systems based on clearinghouses. Therefore, the first public blockchain, Bitcoin, was invented in order to allow banks and other participants to settle accounts among themselves without relying on centralized entities (Ateniese, G., Magri, B., Venturi, D., & Andrade, E., 2017).

A public blockchain network is completely open which means that anyone can join and participate in the network without any permission. The digital distributed ledger is a secure and a real-time processing method used to record and encrypt data (Shiff, 2018). The data on the public blockchain is immutable and transparent because the record can't be overwritten and anyone within the network can audit the previous records. However, since its a decentralized system and anyone can join the public blockchain, each participant maintains their anonymity (Grover, 2019). Bitcoin is one of the largest current public blockchain networks.

Furthermore, for most public blockchains, the consensus algorithm used for validating the transaction is the Proof of Work. Proof of work is time-consuming and costly to produce because each computer connected to the blockchain has to authorize the transaction in order to be considered valid and also because the computer consumes a lot of electricity to produce the digital currency (Li., 2017). This outcome minimizes the impact in case of a failure due to the decentralization. This also means that participants who “mine” for this proof of work get rewarded for adding transactions to the public ledger.

Applications

There are two types of public blockchains, open and closed. The difference is that in an open public blockchain, anyone is able to read the data while in the closed and public network, only certain people can audit the records (Massessi, 2020).

The main application of the public and open blockchains that most people are aware of is the use of cryptocurrencies. The difference between both terms is that a blockchain is the platform and the cryptocurrencies are an application that runs on the blockchain platform. There are over 5200 different cryptocurrencies in the market with a total market cap of USD 175 billion. The largest current cryptocurrency is Bitcoin with a market cap value of USD 114 billion followed by every other altcoin (All Cryptocurrencies, CoinMarketCap.com). Altcoin is referred to all other cryptocurrencies created after Bitcoin's momentum.

Cryptocurrencies			Exchanges	Watchlist	Filters	BTC	Back to Top 100		
#	Name	Symbol	Market Cap	Price	Circulating Supply	Volume (24h)	% 1h	% 24h	% 7d
1	Bitcoin	BTC	18 291 687 BTC	1,00000000 BTC	18 291 687 BTC	5 395 299 BTC	0,00%	0,00%	0,00%
2	Ethereum	ETH	2 275 982 BTC	0,02063736 BTC	110 284 583 ETH	1 771 323 BTC	-0,14%	0,45%	-3,55%
3	XRP	XRP	1 204 286 BTC	0,00002743 BTC	43 906 191 900 XRP *	428 412 BTC	0,38%	3,83%	7,66%
4	Tether	USDT	745 870 BTC	0,00016067 BTC	4 642 367 414 USDT *	6 703 553 BTC	0,40%	6,41%	-0,97%
5	Bitcoin Cash	BCH	612 035 BTC	0,03334406 BTC	18 355 150 BCH	513 743 BTC	-0,01%	-1,35%	-5,15%
6	Bitcoin SV	BSV	462 166 BTC	0,02518279 BTC	18 352 465 BSV	318 608 BTC	0,03%	-2,55%	-5,60%
7	Litecoin	LTC	390 643 BTC	0,00606749 BTC	64 382 968 LTC	472 584 BTC	0,16%	2,11%	-1,98%
8	EOS	EOS	320 924 BTC	0,00034833 BTC	921 311 019 EOS *	405 509 BTC	-0,15%	0,17%	-3,44%
9	Binance Coin	BNB	302 667 BTC	0,00194595 BTC	155 536 713 BNB *	37 838 BTC	-0,12%	0,00%	0,74%
10	Tezos	XTZ	176 439 BTC	0,00025026 BTC	705 020 740 XTZ *	16 382 BTC	-1,01%	-1,92%	-6,78%
11	UNUS SED LEO	LEO	162 857 BTC	0,00016294 BTC	999 498 893 LEO *	1 566 BTC	0,43%	7,05%	0,82%
12	Monero	XMR	132 046 BTC	0,00754515 BTC	17 500 795 XMR	20 354 BTC	-0,04%	-0,72%	14,37%
13	Stellar	XLM	128 610 BTC	0,00000634 BTC	20 284 516 364 XLM *	51 606 BTC	0,16%	0,63%	-1,06%

Figure 1. CoinMarketCap, All Cryptocurrencies. Retrieved from <https://coinmarketcap.com/all/views/all/>

Cryptocurrencies can be used as a form of currency. Different types of forex traders will invest in cryptocurrencies in order to diversify portfolios and also to speculate on geological events amongst other reasons. Global corporations might also use cryptocurrency markets to hedge currency risk from foreign transactions (Segal, 2020). In reality, blockchain eases the cross-border payments by reducing the international payment relay process to a near instant period. Furthermore, digital currencies can also be used for betting. In fact, there are different betting sites like Stake.com that accept bets made with Bitcoin and other altcoins (Micheal, 2020).

Moreover, cryptocurrencies can also be implemented in video games. In addition to the creation of the game itself, some game developers have issued their own cryptocurrencies in order to smooth out problems of transaction systems with multiple currencies. The cryptocurrencies are a reliable and secure way for the customers to buy in-game items and perks (Perez, 2019).

Nevertheless, digital currency isn't the only use of public blockchain. In fact, blockchain companies have received over USD 5.6 billion in venture capital funding from 2012 to 2018 in order to innovate new uses for the blockchain (CoinDesk, Bitcoin Venture Capital Funding). One potential application that the public and closed blockchain can be used for is voting. There is currently a Virginia-based company called FollowMyVote that is in the process of creating a blockchain technology that may be used in future elections. This technology uses a token-based system where each person eligible to vote is associated with its proper token that can be used to vote (Tatar, 2020). This ensures that there can be no manipulation of the votes recorded by anyone or the ability of voting twice. There are several other similar start-ups such as CommitCoin and BitCongress that are in the process of being created which will allow each vote to be registered in order to remove voter fraud or manipulation (Tatar, 2020).

Advantages

The fact that the public blockchain is decentralized eliminates the trust given from the participants to any intermediary. This means that the information in the blockchain becomes

encrypted and stored on multiple devices. Therefore, the blockchain is more secure since it can't be altered by a middleman. The more participants are in a particular blockchain, the harder it is to hack the blockchain. This in turn makes the blockchain more secure since it weeds out troublemakers that want to collude against the blockchain (Aziz, 2019).

Moreover, the public blockchain's data is transparent and open for everyone within the network to see. The transparency attracts different types of users since anyone can verify the validity of the data related to the transaction (Aziz, 2019).

Issues

As mentioned previously in this report, one issue that the public blockchain has is the energy consumption needed to achieve a record. In fact, to support Bitcoin's blockchain data archival, the electricity consumption nears as much as the country of Ireland. That's why there has been a proposed alternative to the consensus algorithm from Power of Work to Proof of Stake. Proof of Stake is a consensus mechanism where participants with more currency units have more weight in the consensus process than those with fewer quantities (Li., 2017).

Another issue that a public blockchain holds is that it's time consuming. Since the consensus algorithm for most blockchains uses the Proof of Work, the transaction per seconds that the cryptocurrency can process is slow. In fact, a Bitcoin can process up to 7 transactions per second while Visa's payment processor can process up to 24 000 transactions per second (Aziz, 2019). There's also a concern about the scalability of public blockchains. Currently, they're not able to compete with centralized payment processors such as VISA and Mastercard which can process high amounts of transactions (Aziz, 2019).

2.2. Private blockchain

In order to better appeal to financial institutions, the private blockchain technology was introduced as a trust-based, permissioned alternative, which enables organizations to centralize read/write permissions and limit access to their network.

With private blockchain, companies have the option to centralize their network and grant access to only a limited number of people. The identity of network users/participants is known, as opposed to the anonymity feature offered by public blockchain. In addition, network membership is controlled, which means that only those with granted access can write data/validate transactions within the network.

Unlike public blockchain, private blockchain networks do not use Proof of work. Instead, only pre-approved participants within the network can validate transactions. This alternative is much less costly and requires less time than the Proof of work (as there is less data to sort through), making it more interesting to companies and institutional financial services.

Applications

On the other hand, much like the public blockchain, private blockchain also has the option to be open or closed. Since write permissions are already centralized, the main difference between a private closed private open blockchain network consists of its accessibility to read permissions.

Many private open blockchains are familiar with the private closed blockchain network (ex: Hyperledger, R3, Corda). It consists of a network managed by a single organization, with both writing and reading restrictions, allowing only those with granted permissions to access and/or edit the network data. Such networks are considered beneficial to industries with highly sensitive information, which include construction companies, national defence, law enforcement, military as well as tax and accountancy information (Massessi, 2020). Because of its classified content, this type of transaction would require more restricted access, both to view and to edit data.

A private open blockchain also limits access to write data onto the network, but it gives the option for more users to read the provided data. This technology variation allows for multi-organization use, and can be applied towards industries such as supply chain, government financial records, and corporate earning statements (Massessi, 2020). Although these types of transactions require limited writing access, they also require for more people to access the information presented. This way, auditors would have access to company-sensitive information, but would not be able to edit/modify it. The same way, supply chain industries would benefit from being able to pass on information/invoices to the next phase of production, allowing them to read previous data and use it to successfully complete their part of the transaction.

Advantages

Private blockchain networks are most beneficial to business end-users and financial institutions. The advantages include enterprise-permissioned access, faster transaction processing, cost efficiency, compliance support and better scalability (Lindenmoyer & Fischer, 2019). In fact, because there is much less data to sort through, there are less nodes in the network, which makes it faster for private blockchain to validate and process transactions. In addition, because of the limitations in network access, the process is also much more cost efficient than it is for public blockchain to validate transactions using Proof of work. With private networks, consensus mechanisms are more efficient: not only are there less nodes, but also the consensus algorithm is different from that of a public blockchain. Finally, by adopting a private blockchain network, companies have more control over their data, which allows them to better manage/edit their transactions and to meet compliance requirements more easily. Because it is trust-based, it is easier to identify and track each user of the network, which adds an appealing security and privacy feature for enterprises and financial institutions.

Issues

Because they are centralized, private blockchains contradict the fundamental concept of a blockchain. This leads to higher risk exposure to data manipulation and hacking, as it is easier to take control of the infrastructure when there are fewer nodes and fewer participants. In addition, the security system of a private blockchain relies entirely on the trustworthiness of each user, whereas the public blockchain benefits from the Proof of work security feature. In other words, if one participant proved to have malicious intentions in a private blockchain, the entire network would be at risk of a security breach.

3. Similarity and Difference between Private and Public

Similarities

Public and private blockchains seem to be different and have unique pros and cons. However, both these platforms still have some similarities to be a blockchain in general. They are both append-only ledgers where people can add data and records. However, the records are immutable as they can not be changed or deleted. In addition, both platforms are decentralized peer-to-peer networks where no one, such as a bank or a broker, is in charge of authorizing transactions. Instead, peers are responsible for carrying out transactions and validating them. They participate in making decisions in the validation process. The process is implemented through a consensus method, where the majority of participants agree if the records are valid. Once validated, each node from both types of chains also maintains a replica of append-only ledgers that gets updated frequently based on consensus. The decentralized peer-to-peer networks, along with the consensus method, can increase the transparency for both private and public blockchains.

Differences

- *Access*: The primary and the biggest difference between public and private blockchains is the level of access. Due to being fully decentralized, public blockchains are completely open, which means everyone can participate by adding, reading and recording data. There are no restrictions to participants. On the other hand, private blockchains, also referred to as permissioned blockchain, only allow certain entities to participate in a closed network. Participants are given different rights and restricted access. Hence, there are only a few participants that can control the closed network, making it more centralized (O'Leary, 2017).

- *Anonymity*: Participants of public blockchains can be anonymous while certain entities of private blockchains can not be. For example, everyone can purchase Bitcoin without revealing their own identities, and all of them are given the same rights and treated equally. However, when it comes to private blockchain, your identities have to be known because private blockchain is mainly used for business-to-business transactions where it is essential to know who is participating (O'Leary, 2017).

- *Trust*: Public blockchains are trustless. There are no intermediaries in this platform, and everything is recorded publicly and traded directly. Nobody has to personally know and trust others so as to function the system. Meanwhile, the credibility of private blockchains highly relies on the credibility of the authorized nodes. Therefore, they need to be trustworthy to transmit confidential information within the network. (Liu, Wu & Xu, 2019).

- *Consensus Process*: In public blockchains, nodes have no restrictions and regulations in joining the validation process. As a result, everyone is able to participate to reach consensus and receive the benefits from the platform. On the other hand, in private blockchains, not every participant is free to join the consensus process. The authorized nodes have to decide beforehand who can be involved in the process.

- *Security*: Public blockchains are more secure as they are decentralized. The larger the system, the greater the distribution of records. Moreover, every node participates in verifying transactions and

proof-of-work, making it much more difficult for hackers to change the information and gain control over the entire network. On the other hand, private blockchains only have a few participants. If one of the nodes can access the management system, it can gain all the access to all the nodes in the network. Thus, the chance of being attacked and hacked by bad actors is much higher (Liu, Wu & Xu, 2019).

- *Transaction costs and speed:* Private blockchains work on such a smaller scale as there are far fewer participants, which enables members of this network to save time to verify and reach a consensus, whereas public blockchain platforms tend to have a much higher number of requests with extensive approval processes. Therefore, not only are private blockchain transactions much faster per second, but they are also much cheaper to process than their public relatives. For example, Bitcoin can only process 7 transactions per second, or Ethereum network can process a bit faster with a rate of 15 transactions per second. Meanwhile, private blockchains have a much more rapid rate, up to thousands and hundred thousand transactions per second. Visa can process 24,000 transactions per second. (Lindenmoyer & Fischer, 2019).

- *Efficiency:* Public blockchains might have to deal with scalability issues when there are many nodes on the platform, which slows down processes. Hence, public blockchains seem to be less efficient compared to private platforms as private blockchain only has a reasonable number of nodes responsible for managing data. (Lindenmoyer & Fischer, 2019).

4. Comparison between Private & Public Blockchain and Current applications

Summarization on Pros and Cons

	Private	Public	Public & Private
Pros	<ul style="list-style-type: none"> - Fewer participants and higher speed - More scalable to process more transactions (few authorized nodes manage the data) - Easy to manage 	<ul style="list-style-type: none"> - Decentralized - Information transparency and openness of events and transactions - Information security: Difficult to attack and destroy all the nodes at the same time 	<ul style="list-style-type: none"> - Disintermediation (no Master node compared to traditional database) - Improved accuracy: less chance of data fraud - Cost reduction on third party verification - Unconstrained transaction time
Cons	<ul style="list-style-type: none"> - Centralized (Violates the design concept of blockchain) - Trust issues on the authorized nodes - Risk of data manipulation 	<ul style="list-style-type: none"> - Hard to regulate - Low speed - Leaking of confidential data - Risk of false information from the anonymous participants - History of illegal usage 	<ul style="list-style-type: none"> - High technological costs (heavily relied on computers) - Insecurity: chances of been hacked

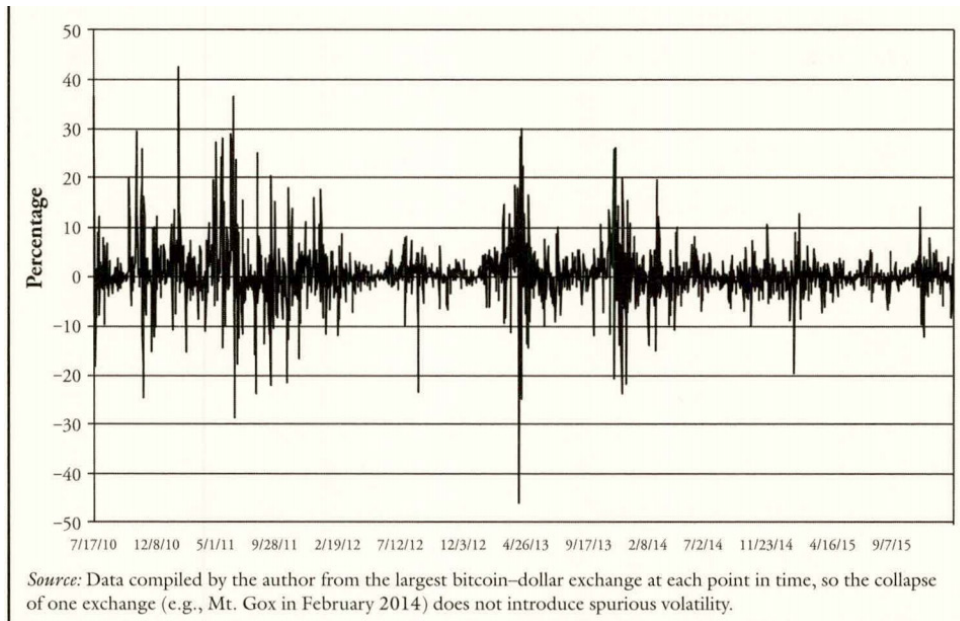
Which one is better?

Because public blockchain is characterized by transparency, the application is attended to serve larger communities and solve the problem of trust. The primary usage of the public blockchain is in cryptocurrency like Bitcoin (Public and Open). There’s also a growing public test on blockchain-based voting (Public and Close).

However, due to the lack of intrinsic value, the high implied volatility of cryptocurrency keeps the clients and investors on the sideline and from making actual transactions and investment.

Besides, the information recorded in the public blockchain will remain public forever. Even though the information is encrypted, there are also chances of being hacked. As for the blockchain-voting system, the openness of public blockchain exposes the election system to the risk of being attacked, including server penetration attacks, client-device malware, denial-of-service attacks, and other disruptions (Mearian, 2019).

Figure 2. Severe fluctuations in Bitcoin from 2010-2016



With the concern of information protection, data security, and the ability to control, the private blockchain fits better for large corporations and financial institutions. There are three main sections of private blockchain applications in the business world: supply chain management, insurance, and bank.

Current Applications

- ***Supply Chain***

Supply chain management is a complicated process that plans and executes the material, information, and financial capital flows. Proper supply chain management can help firms increase production and sales and decrease fraud and overhead costs. Blockchain-based management enables all participants to join the network and to view and change the data, regardless of their geographical location. Thus, the information and capital will be able to flow more smoothly with trust along the chain. Besides, the elimination of auditing can save a massive amount of time and money.

The major use case of blockchain-based supply management is in the food industry to reduce the spread of food-borne illnesses like the E-Coli virus of spinach. The dominant player in this field is Walmart. Walmart has teamed up with IBM to work on its supply management system since 2016, aiming to track food delivery in near real-time using the blockchain system. This system enables the firm to quickly react to the issues in the food chain, therefore, save a massive loss during a recall.

- *Insurance*

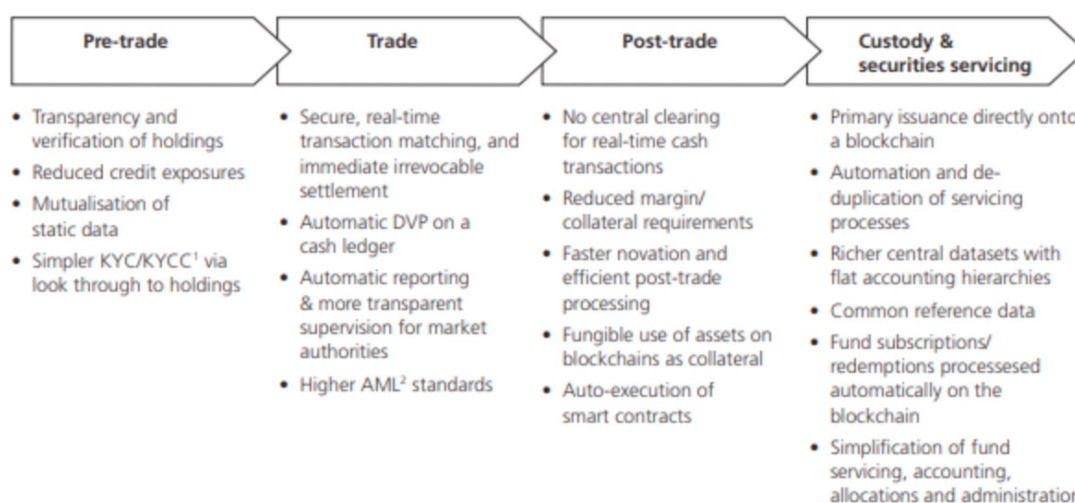
The insurance industry first initiated and launched the blockchain system in Oct 2016, aiming to improve the industry efficiency through four main aspects: fraud elimination, claims automation, data analysis with the Internet of Things (IoT), and Reinsurance. The key features of private blockchains as transparency, traceability, and permission allow the data including personal historical credit information, accident environmental information, and prior policy information securely and smoothly flow through the blockchain system, and therefore reduce the cost (Chen, 2018).

- *Bank*

According to the revised comprehensive list of banks using blockchain technology posted in Jan 2020, There are over 400 banks and financial institutions using or soon to be using blockchain technology. The major application of blockchain in banks is money transfer. Although cryptocurrency provided an “alternative” way to move money, this application still needs to be refined and improved because of its inherent drawbacks (information leaking and highly fluctuated value). Mainstream banks are using blockchain to advance remittances by speed, traceability and low cost.

Blockchain is also used in the settlement of letters of credit for international trade. As the trade deal can be automatically executed when certain conditions are satisfied, this will reduce manual participation, therefore, reduce the cost and manual errors. Besides, when the contract is automatically triggered, it will provide a single, immutable record to all participants that makes the settlement more transparent and traceable.

The traditional trade of the company’s shares is complicated as the traded ownership of the asset or contract must be verified and recorded. Hence, the capital market also gradually adopted the Distributed Ledger Technology (DLT) (Blockchain) to clear and settle the transactions (refer to Figure 3 below). Further, Blockchain refines financial borrowing by providing a time-efficient, seamless system (refer to Figure 4 below).

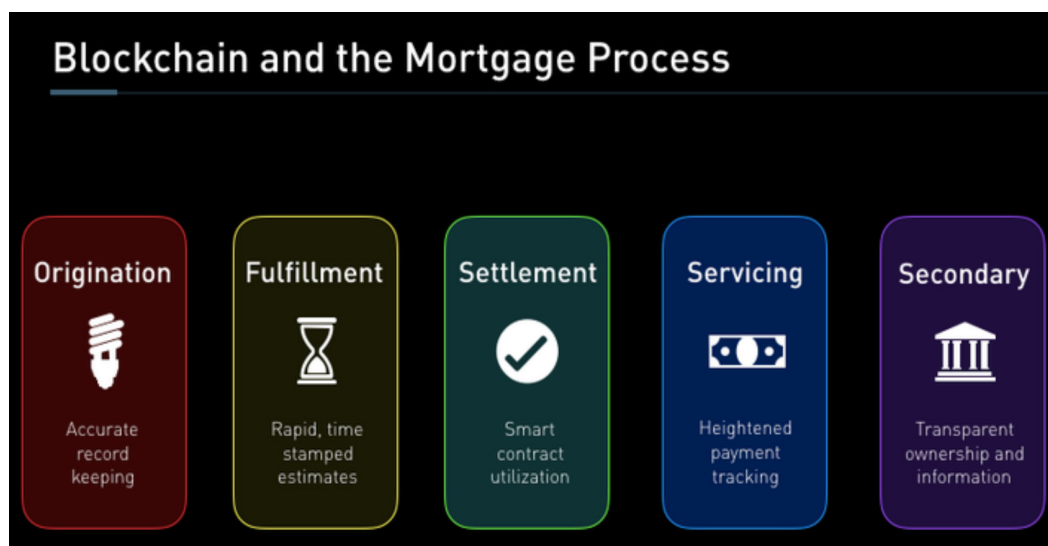


¹ KYC – Know Your Customer; KYCC – Know Your Customer’s Customer

² AML – Anti-Money Laundering

Figure 3: Benefit of utilizing Blockchain for each stage of the capital market process

Figure 4: Process of DLT-based Mortgage)



- *Other Uses*

Despite the three main uses of the private blockchain, the system is also applied in supporting land and physical asset registries, commodities trading, Primary Market Issuance, and IPOs. The financial sectors are taking blockchain technology seriously because the tamper-resistant and immutable nature of the blockchain can upend the traditional business.

5. Future development

As blockchain technology is constantly evolving, the current disadvantages of public blockchain could become a thing of the past. Besides, large corporations (like LG and Kakao), governments, software vendors and banks are joining to develop the technology for better application in practical production. Sooner, the boundary between the public and private blockchain can be blurred. According to Aziz, a hybrid model can be a solution that combines the public and private blockchain, and businesses could also adopt a private database with a public blockchain to make the system more secure, transparent, stable, and scalable.

How banks bridge the gap between Public and Private

In the financial system (as central banks, regulators, fintech startups, and global banks like UBS), major players have focused on and invested in the blockchain. One popular approach for banks, using tech to reduce fraud, speed up transactions, and catch on with consumers, is to create in-house financial innovation labs. The website, CBinsights, listed 37 institutions in the industry who owned finance innovation labs. Among the list, there are some familiar names like Visa, Mastercard, Capital One, JP Morgan, and so on.

Hybrid blockchain (a combination of private and public blockchain) developed by Ripple (XRP) is now a representative tech that banks and financial institutions adopted for rendering their services. Ripple's technology transactions can take place in under 3.5 seconds. Therefore, the hybrid blockchain is emerging as an alternative and a competitor to SWIFT. Even though the SWIFT ecosystem has been declining, the fact that it is pulling its new products and increasing

revenue from alternative streams suggests that SWIFT may be reinventing itself rather than becoming obsolete in the blockchain world.

6. Conclusion

The blockchain concept and technology has grown much beyond its initial application areas, Bitcoin. The public and decentralized sector is now more commonly adopted to serve large populations. Whereas, the private blockchain is more prevalent in the industry where private information security is more concerned. In the banking industry, permission blockchain is more popular. However, the hybrid blockchain is also an emerging trend that suggests the tendency in the combination of private and public blockchain. Though the future changes are still unpredictable, the blockchain is now rapidly infiltrating in the business world. Thus, corporations, governments, and financial institutions need to be well-prepared for the new technology and even participate in the development.

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IMPACT OF LABOR ON THE ECONOMIC GROWTH OF VIETNAM: HISTORY, SITUATION AND PREDICTION

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Abstract: *This paper aims to analyze the effects of the fluctuation in labor force and labor productivity on Vietnam's economic growth. Using the neoclassical growth model with data from the General Statistics Office, the study shows that when the number of laborers increases by 1%, the economic growth rate will raise by 2.78%. Combined with predicted figures on changes in Vietnam's labor force in the period of 2009-2049, the results of the study reveal in order to maintain the current economic growth rate, labor productivity needs to increase to 106.2% in the period of 2029-2039 and 111.6% in the period of 2039-2049. Vietnam is losing the advantage of labor force so its long-term economic growth will depend mainly on labor productivity. Improving the quality of labor is the driving force for the economic growth. This depends on the combination of specific national policies and strategies, in which education and training policies are highlighted. However, an unexpected out-break of Covid-19 has impacted the economy, causing a millions workers to lose their jobs or have working hours reduced. Therefore, it is necessary to take the initiation and innovation in policies and actions, ensure abundant human resources, high quality and high employment growth rate to be able to continue to exploit the advantages of labor and increase competitiveness of the economy and promote integration and development*

Keywords: *Labor; Labor productivity; Economic growth; Covid-19*

1. INTRODUCTION

After many development stages of economic history, from the Classical Growth Theory (18th century) to the Endogenous Growth Model (late 20th century), the growth theories and models affirm the importance of labor - one of the basic inputs that determine economic growth in a country. The birth of the Neoclassical growth model (mid-20th century) is considered the first complete economic growth model, focusing on four variables namely Output (Y), Capital (K), Labor (L) and Technology (A) with a starting point from the Cobb-Douglas production function ($Y = A \cdot K^\alpha L^\beta$). From this basic equation, several economic studies have based on developing the model to calculate the contribution of the factors to the growth.

In Vietnam, after the reunification day, especially since the implementation of economic reform, the labor force has grown continuously in both size and proportion over the total population. The sharp increase in the labor force together with the policies of innovation, openness and development contributed significantly to the national economic growth over the past 30 years. Figures showed an impressive economic growth rate of Vietnam with an average of about 7%/ year, including a great contribution of the labor force. Therefore, during this period, many studies proudly mentioned

the huge advantage of Vietnam with “abundant labor force, cheap labor...” because it was one of the significant reasons to attract foreign investment, promote the development of processing and labor-intensive manufacturing industries. However, in recent years, fewer and fewer scientists use the term “advantage” when mentioning cheap labor in the nation. Instead, they express anxiety and concern because it is impossible for Vietnam’s labor force to be permanently abundant, and, in addition, cheap is not considered an advantage but a big challenge on the way of integration and development. Vietnam is facing up with “middle income trap” and the risk of “getting old before getting rich” due to low labor skills and low labor productivity.

If the study simply bases on the perspective of labor force size, it can be seen that there has been drastic transformation in the process of population change in Vietnam over the past three decades, resulting in a raise in the labor force over the total population. Many studies point out that Vietnam has a period of “golden population structure” which lasts for more than 30 years (about 2009-2039), that is, during such period, the labor force accounts for a large proportion of the total population with “more than two working-age people bearing one dependent only”. This is a great advantage for Vietnam if it can exploit this resource for economic growth and development. However, if the labor quality is not improved and labor capacity is not promoted better to create high productivity, the term “golden population structure” will be no longer accurate, but only “copper” or “iron”, as once feared by some leading scientists. On the other hand, what will Vietnam’s economic growth be like when the “golden population structure” period is over? In the long term, when there is no advantage in labor resources, how should the labor quality be improved so that the country can maintain the current economic growth rate? This paper studies the fluctuation of Vietnam’s labor resources in relation to economic growth, and analyzes labor quantity, labor productivity and calculates the contribution of labor to economic growth in the past, at present and in the future (predicted data) to clarify these issues.

2. RESEARCH METHOD AND ESTIMATION MODEL

In the calculation models and expressions, this study assumes that all working-age people are engaged in economic activities, so the Labor variable (L) is interpreted as a variable representing the population group in the working age (from 15 to 60 years old).

To estimate the impact of labor on economic growth through the number of laborers and labor productivity in Vietnam, the study bases on the theoretical framework of the neoclassical growth model with the starting point of the Cobb-Douglas production function:

$$Y = AK^\alpha L^\beta \quad (1)$$

In which, Y is output (real GDP), capital (K) and labor (L) are inputs. A is a parameter reflecting technology, α and β are parameters reflecting the elasticity of output according to capital and labor respectively.

With P being the total population, equation (1) can be rewritten as follows:

$$Y = AK^\alpha P^\beta \left(\frac{L}{P}\right)^\beta \quad (2)$$

To clarify the relationship between the growth rate of the factors and the growth rate of GDP per capita, logarithms is made on two sides of equation (2) as follows:

$$\ln Y = \ln A + \alpha \ln K + \beta \ln P + \beta \ln \left(\frac{L}{P} \right) \quad (3)$$

The study uses the above-mentioned form of function to estimate the impact of factors on economic growth, in which the proportion of the working-age population (number of people aged 15 to 60 over the total population-aw) is used as variable representing the labor force to population ratio (L/P).

Then, the specific form of empirical production function to estimate will be:

$$\ln(Y) = a + b_1 \ln K + b_2 \ln P + b_3 \ln (aw) + e \quad (4)$$

In which, a is a constant that reflects the change of the dependent variable not explained by the independent variables in the model; and the coefficients b_1 , b_2 , b_3 respectively are elasticity coefficients of real GDP according to the independent variables in the model.

Besides, with y being real GDP per capita, simple mathematical transformation can be made to show labor productivity and labor force to population ratio for growth through following equation:

$$y = \frac{Y}{P} = \frac{Y}{L} \times \frac{L}{P} \quad (5)$$

Equation (5) shows the dependence of the economic growth rate on two components such as: labor productivity and labor force to population ratio. Thus, if labor productivity (Y/L) is constant, economic growth depends on the growth rate of the labor force to population ratio. This confirms that: in any country the bigger number of laborers in the total population is, the more per capita income gets. So, L/P is called the Economic support ratio that shows how many people of working age 'burden' the entire population economically.

From equation (5) logarithm is made on two sides, the equation showing the growth rate of the GDP per capita as follows:

$$g_Y = g_{Y/L} + g_L - g_P \quad (6)$$

Equation (6) shows that the economic growth rate is determined by the growth rate of labor productivity and the difference between the labor growth rate and the population growth rate. If $g_L - g_P = 0$: the labor growth rate is equal to the population growth rate, then economic growth depends on labor productivity only. On the other hand, if $g_L - g_P < 0$: the labor growth rate is slower than the population growth rate in general, then economic growth is constrained by the increase in the number of dependents (children and the elderly) in the total population.

The later part of the paper will present the results of estimating the impact of labor on Vietnam's economic growth through the correlation between labor growth rate and growth rate of GDP per capita. Nevertheless, equation (6) is used in combination with the data source of the Vietnam Population Census for the period 1979-2009 and the predicted data for the period 2009-2049 of the General Statistics Office to calculate the contribution of the labor productivity, labor ratio, and population in general to the growth of the economy.

3. LABOR FORCE AND LABOR PRODUCTIVITY IN VIETNAM: OPPORTUNITIES AND CHALLENGES FOR ECONOMIC GROWTH

3.1. The labor force

The labor force of Vietnam has continuously increased since before 1979. This fact is an inevitable result of the "population explosion" phenomenon that began in the 1960s, derived from

too high fertility and low death rates. According to the statistics, the average number of children per woman in period 1960-1969 was 6.6 and in 1969-1979 was 5.8 (Nguyen Dinh Cu, 2011). The number of newborns every year boosted so fast that as a result, after 15 years, the number of people entering the working age would increase accordingly. Hence, the average numbers of employees increased were 820,000/ year in the period 1979-1989, 980,000 / year in the period 1989-1999 and in the period 1999-2009 about 1.3 million laborers were added to the labor force in Vietnam every year in average. For the period 1979 – 2009 in general, the population raised by 1.6 times while the number of people of working age increased by 2.1 times, but in the period of 1999 – 2009 especially the growth rate of the working-age population doubled which of the general population.

As a result of the strict execution of fertility reduction in our country, there was an evident decline in the number of newborns every year. In the period of 1979-1989, the average number of children per woman decreased to 4.3. This figure decreased to 3.1 in the period of 1989-1999 and 2.18 only ten years later. This is the basic reason for the growth rate of the population and the working-age population to decline over the years although both have increased sharply in terms of size.

Table 1: Labor and population changes in Vietnam, 1979-2049

TT/ No.	Năm / Year	1979	1989	1999	2009	2019	2029	2039	2049
1	Population (P) (Mil people)	53,74	64,38	76,33	85,85	95,47	102,65	107,02	107,88
2	Labor (L) (Mil people)	27,13	34,51	44,56	56,70	62,84	65,45	65,76	61,89
3	proportion of labor in total population	50,49	53,60	58,38	66,05	65,83	63,76	61,45	57,37
4	Labor growth rate (g_L)(%)	-	2,40	2,56	2,41	1,03	0,41	0,05	(0,61)

Source: Calculated from the 1979-2019 Population Census data and population forecast data of the General Statistics Office

The data in Table 1 shows that, although the labor growth rate has decreased strongly over the years, the number of laborers will continue to increase until 2039 with a peak of 65.76 million, then the labor force size will decrease gradually and rapidly as the labor force reaches retirement age while its annual additional source declines greatly as a result of fertility reduction policy. With this fact, Vietnam will experience the “golden population structure” for about 30 years (2009-2039), characterized by the fact that the labor force accounts for a large proportion of the total population, about over 67%, that is, more than two people of working age bear a dependent (Bui Thi Minh Tiep, 2012). This abundant human resource is considered a national advantage, a great opportunity to distribute labor into sectors in the economy, reduce the burden of dependencies, increase savings, promote investment, stimulate production, consumption and promote Vietnam’s economic growth.

3.2. Labor productivity and labor quality

Though a young and abundant labor force is identified as a national advantage, in order to exploit this advantage, it is necessary to integrate two conditions in terms of labor force size and labor quality. If the workers are well-trained and have good professional qualifications, Vietnam may become a production partner with developed countries in some key industries. The

large and skilled labor force will help Vietnam penetrate faster and deeper into the regional and global economy. Furthermore, the raise in the quantity of employed labor force with higher and higher incomes will make a major contribution to the social security fund, contribute to the strong assurance of the pension financial system in the long term.

Our labor force, however, has low technical qualifications and lacks of skills. The proportions of labor with professional and technical qualifications in Vietnam were 22.8% in 2018, 15.5% in 2009 and 10% in 1999, showing a slow-moving improvement in the labor quality in comparison with the speed of economic growth and labor restructuring.

In 2018, there were more than 77% of untrained employed workers in the nation, in which the proportion of trained workers in urban and rural areas was significantly different. The country faces a great challenge in meeting the goal of sustainable development. In addition, trained workers are still poor in quality with proximately 40% of them with weak qualifications. Thousands of graduates from economics, business administration, etc. every year are unable to find jobs due to unrealistic training, while businesses cannot recruit enough skilled workers. This situation is a consequence of inadequacies in the education system. The majority of Vietnamese technical employees working in high-tech enterprises usually only perform simple tasks such as operating simple machines, equipment and repairs, while complicated stages with high technical skills are mostly undertaken by foreign workers, which shows that Vietnamese workers lose their advantages right at home and, along with that, their income sources are also limited.

With low technical and professional qualifications, the limited amount of human capital accumulated in the labor force makes Vietnam's labor productivity not high. Vietnam's labor productivity in 2018 was estimated at VND 102.2 million / person, an increase of 5.93% compared to 2017 (Institute of Labor Science and Social Affairs, 2018). Labor productivity growth has recovered and increased rapidly in recent years, reaching an average of 4.77%/ year in the period of 2011-2018 (compared to 3.17%/ year in the 2007-2010 period). However, the Ministry of Labor, Invalids and Social Affairs assessed that Vietnam's labor productivity is still far behind many ASEAN countries. At 2010 comparative prices, in 2018 Vietnam's labor productivity was 1/30 times that of Singapore, 29% of Thailand's labor productivity, 13% of Malaysia's labor productivity, 44% of the Philippines' labor productivity. During the past 15 years, our country's productivity growth rate has always been lower than the economic growth rate. This shows the fact that Vietnam's economy is growing based on expanding production scale, using more labor rather than developing in depth, basing on labor productivity. Therefore, it is necessary to improve the quality of labor by increasing the number of trained workers, improving the quality of training, etc., which is an urgent work to improve labor productivity, thereby integrating with the increased work force during the "golden population structure" period to accelerate economic growth.

4. IMPACT OF LABOR ON THE ECONOMIC GROWTH OF VIETNAM: HISTORY, SITUATION AND PREDICTION

The study uses the ordinary least squares (OLS) method to estimate the production function (4) with the data source collected mainly from GSO Statistical Yearbook, including: collected population data by age group of 63 provinces/ cities in the 2007-2009 period and data on GDP, the ratio of investment to GDP by province in the 2007-2009 period. The estimation results are shown in the following table:

Table 2: Results of estimating the impact of factors on Vietnam's economic growth

ln_gdp	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
ln_k	0,406	0,046	8,840	0,000	0,315	0,496
ln_p	-1,999	0,545	-3,670	0,000	-3,074	-0,924
ln_aw	2,782	0,532	5,230	0,000	1,733	3,832
_cons	4,542	0,814	5,580	0,000	2,936	6,148

(Source: Authors' estimation results, 2020)

It is shown in the estimation results that the estimated coefficients in the model, which are actually nonzero, are at the rate of 5% statistically. $R^2 = 0.8273$ indicates that the independent variables in the model explain 82.73% of the variation of the dependent variables.

The estimation results can be written in the form of the equation as follows:

$$\ln(GDP) = 4,542 + 0,406 \ln K - 1,999 \ln P + 2,782 \ln (aw) \quad (7)$$

The positive coefficient of the working-age population ratio variable (aw) is at the rate of 5% statistically, showing the positive role of labor supply to economic growth. In the context of other factors remaining unchanged, when the proportion of people in working age increases by 1%, the economic growth rate will increase by 2.78%.

The negative coefficient of LnP variable implies that the too fast population growth will negatively affect the economic growth. Provided that other factors remain constant, when the total population growth rate increases by 1%, the economic growth rate will decrease by 1.99%. The table of estimation results also shows that investment brings a positive impact on economic growth. Specifically, in the context of other factors unchanged, the 1% increase in rate of investment capital will increase GDP growth rate by 0.4%. From this result, it can be asserted that, when the labor force increases, saving will increase, which is an important indirect channel that has a positive impact on the economic growth.

On the other hand, in order to prove labor's contribution to the economic growth expressed through two indicators: labor quantity and quality (productivity), the study uses equation (6) in combination with Data in Table 1 for specific calculations for the period of 1989-2009 and forecasts for the period of 2009-2049 (assuming GDP stays at the average level of the period 1999-2009). Calculation results are shown in Table 3 below:

Table 3: Contribution of factors to Vietnam's economic growth, 1989-2049

Giai đoạn/ Period		1979-1989	1989-1999	1999-2009	2009-2019	2019-2029	2029-2039	2039-2049
Average growth rate (%/ year)	g_L	2,40	2,56	2,41	1,03	0,41	0,05	-0,61
	g_P	1,81	1,7	1,18	1,06	0,73	0,42	0,08
	$g_{Y/L}$	-	5,09	4,75	6,07	6,33	6,38	6,70
	$g_{Y/P}$	-	5,95	5,98	6,10*	6,10*	6,10*	6,10*

Contribution to economic growth (%)	<i>L</i>	-	43,03	40,30	16,89	6,72	0,82	-10,0
	<i>P</i>	-	-28,57	-19,73	-16,39	-11,97	-6,89	-1,31
	<i>Y/L</i>	-	85,55	79,43	100,50	103,77	104,59	109,84
	<i>Y/P</i>	-	100	100	100	100	100	100

Source: Calculation from data in Table 1 and Vietnam's economic growth data in the period of 1990-2009 of General Statistics Office, 2010

(* the data assumes GDP remained at the level of the period 2008-2018 is 6.01% (GSO)

The calculation results in Table 3 show that:

Vietnam's labor growth rate has passed its peak period (2.56%/ year in the 1989-1999 period) and in the coming decades, the labor growth rate will continue to decrease. After 2039, Vietnam will have absolutely no advantage in terms of labor size with the contribution of labor size to economic growth after 2039 being negative. This confirms the role of labor quality to Vietnam's economic growth in the long term.

Abundant labor force contributed about 43% to Vietnam's economic growth in 1989-1999. However, if the whole population is considered a unity in which workers engage in economic activities and "burden" their dependents (the elderly and children), after deducting the portions for dependents, the remaining contribution to economic growth during this period is about 15% only. Similarly, the labor force contributed to Vietnam's economic growth in the periods of 1999-2009 and 2009-2019 were 40% and 17% respectively. However, after subtracting the "dependent burden", the contribution to economic growth in the period of 1999-2009 was 21% and at the end of the period of 2009-2019, as the labor force decreased sharply, together with the increase in dependent burden from the elderly, this contribution was zero. After 2019, Vietnam's economic growth will depend mainly on labor productivity.

Labor productivity contributed 85% to economic growth in 1989-1999 and this figure was 100% in 2019. After 2019, along with a decrease in the number of laborers will be a sharp increase in the number of dependents at old age in Vietnam due to population aging. At that time, to maintain the current economic growth rate, Vietnam's labor quality needs to be strongly improved, labor productivity needs to increase to 105% in the period of 2019-2029 and to 110% in the period 2039-2049. This fact raises the problem of improving the quality of human resources in Vietnam.

However, all forecasted data from above may not accurate due to an unexpected out-break of Covid -19., nearly half of the labor force (approximately 30 million) – were affected. The Ministry of Labor also reported that urban unemployment rose by 33 percent during the second quarter, while the average income per worker decreased by five percent. As job loss escalalte, can lead to other short- and medium-term effects that could prove just as painful in the longer run. For instance, job losses affect future earnings due to interruptions, lost productivity, de-skilling associated with prolonged unemployment spells, and missed opportunities to build human capital on the job.

5. CONCLUSION AND RECOMMENDATIONS

In the cause of industrialization, modernization and international economic integration, an abundant human resource is national advantage of Vietnam. The number of laborers increased

sharply in the period of stable political status, economic reform and expansion of exchanges with the world economy, creating a new position and force for Vietnam to accelerate economic growth during the period of 1989 – 2009. The contribution of labor size to economic growth in this period was over 40%. In the next 30 years, the number of laborers in our nation will continue to rise, peaking in 2039 with 65.76 million, a good opportunity for economic growth and national development. However, the number of laborers is only a necessary condition while improving the quality of human resources is the sufficient condition to best exploit the opportunities from labor for growth.

Vietnamese labor quality is currently the most important issue that requires regulation through specific policies and strategies. The quality of the available labor force does not meet production requirements, in which, labor productivity is low, workers are both physically and professionally weak and lack necessary skills. Without improving labor quality, Vietnam will not be able to sustain economic growth and will deal with lots of challenges such as unemployment, social evils, burden of “dependent population” ... and when this force joins the elderly, the burden of retirement finance, medical expenses and social security issues will become serious. In the manufacturing sector alone, in order to maintain the growth rate as in the past time, labor productivity must increase by 105% - 110% (2019-2049) provided that other factors remain unchanged.

Human resource development is the driving force for economic growth, the most urgent issue of our country’s goal of economic growth and development. Therefore, it is necessary to take the initiative and innovation in policies and actions, ensure abundant human resources, high quality and high employment growth rate to be able to continue to exploit the advantages of labor and increase competitiveness of the economy and promote integration and development :

- Maintain government expenditure levels on education: The crisis is expected to lead to budget cuts, and education may lose a lot. Some predict massive budget cuts to education. This will jeopardize the gains we have been making globally in terms of access to education and in the global effort to improve learning outcomes. We may also need to think about incentives for students to remain in school, such as scholarships, conditional cash transfers, and savings programs that encourage study. A lack of investment in education and training will hurt long-term economic prospects and lead to short term losses for students, workers and their families.

- Provide income support and employment: Direct income support and employment for young people are important mechanisms to adopt now. In the past, public works programs have successfully kept young people working. Employing youth during the coronavirus pandemic is a good investment. It helps mitigate the long-term consequences of COVID-19 for labor productivity. Similarly, it makes sense to consider innovative programs such as universal basic income. Several countries had experimented with it previously, and several more are considering it now. Such programs will help low-income and less educated workers get the job experience they need, and give them a cushion during times of unemployment, so that they may also pursue further education and training.

- Invest in digital skills and technology: The unusual and unprecedented nature of the crisis means that it is not only the more educated but also the ones who are in jobs and occupations more amenable to remote work who fare better. In most cases, it ends up being people with digital

skills. Therefore, equipping people with digital skills has suddenly become a critical need. Even professions such as elementary school teachers, music teachers, personal fitness trainers, and the likes who may never have needed to connect remotely as a service provider have now had to connect through internet and online. Offering short training courses to improve digital skills will help in this regard. Governments have also started subsidizing internet access or providing low-cost computers for those without access to technology.

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REQUIREMENTS FOR BUILDING COST MANAGEMENT ACCOUNTING MODEL IN PUBLIC HIGHER EDUCATION INSTITUTIONS

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Abstract: *In the context of integration and innovation, the market of educational and training services in general, and higher education services in particular possesses many development opportunities. However, educational institutions, especially public higher education institutions are facing challenges because of a series of requirements to improve service quality, develop better self-control, government, gradually reduce the level of budget subsidies, and undergo increasing competition pressure. To overcome such great threats, managers of educational institutions need to be aware of the important role of accounting, especially management accounting in operating their organizations. In particular, to plan the most effective cost control and development strategy, the construction of a cost management accounting model is an urgent requirement, so that it can increase the efficiency of managing and operating educational institutions.*

The objective of this article is to clarify the need to build a cost management accounting model in public tertiary institutions in Vietnam; thereby helping administrators develop cost models for their educational institutions appropriately and effectively.

Keywords: *accounting management, cost, education institutions, public universities*

Cost management accounting includes basic contents such as: Identifying and classifying costs; Building standard cost and cost estimates; Operating cost accounting; Pricing and Costing for services and products; Analysis of price volatility; Cost management accounting reporting system; Analysis of cost information. This is an important information channel to help administrators establish, implement, monitor, control, evaluate operations, and make optimal decisions. However, at present, this topic has not received adequate attention from administrative agencies in general, and public higher education institutions in particular.

In the operation of these agencies, cost management accounting has a close relationship with the management function. Accordingly, to achieve the goal of operating and managing operations, administrators need to plan and estimate costs based on the set goals, govern to implement the plan and evaluate the implementation, specify guidance information of the administrator.

Also, cost management accounting also has an important function in resource allocation, because it can help administrators to calculate and choose to make optimal decisions for the allocation of resources effectively. For example, when management accounting information is truthfully provided when it comes to the cost, revenue, and performance results, managers can have enough information to make decisions to benefit their institutions.

According to Le Thi Binh (2018), to achieve the most effective cost management accounting, it is necessary to comply with some of the following requirements: Provide sufficient, accurate, and timely information as required as for cost management of each activity, department or job; specific cost management accounting information provided when compared with financial accounting; The cost management accounting information provided is logical and comparable to identify information quickly and accurately; The cost management accounting information must be confidential. However, due to the management and decision-making of the institutions' administrators, in order not to create additional administrative regulations that cause difficulties for the organization, at present, the management agency has not had any written regulations on the implementation of cost management accounting.

The actual operation of the public higher education institutions in general and the application of cost management accounting in particular shows that the construction of the cost management accounting model in public higher education institutions still has some shortcomings with the following limitations:

Firstly, the public university administrators have not paid attention to the management accounting in general and the building of the management accounting model at the training institutions in particular. Due to the common characteristics of administrative agencies in general, public higher education institutions in particular still operate mainly based on subsidized capital from the state budget, operating in compliance, implementing the political mandate assigned by the State. Therefore, in terms of financial accounting, they almost only care about how to well perform all three phases of the budget cycle: get more estimates, well comply with the payment and finalization. It can be said that derived from the operating characteristics of the educational institutions and the awareness of administrators, the management accounting does not pay much attention to or pay little attention to the organization of its management accounting areas. They also do not fully understand the importance of management accounting in providing information to make executive decisions, which leads to ineffective operational and management strategies. So, it is necessary to increase the propagation and dissemination of knowledge about management accounting for training institutions, creating a change in the awareness for the application of management accounting into their governance activities.

Secondly, at present, most training institutions have not applied management accounting. Even for public higher educations which are subjects to pilot renovation of the operation mechanism of public tertiary education institutions during 2014-2017 according to Resolution 77/NQ-CP dated October 24, 2014, of The Government also just stopped at the primitive application, simply a combination of financial accounting and management accounting; management accounting is just detailing data of financial accounting. The training institutions have not fully exploited the management accounting tools. Besides, the managers of educational institutions are confused when studying the content of management accounting for practical application in their training institutions.

Thirdly, at present, training institutions only organize the financial accounting apparatus, while the management accounting has not been paid attention and invested. To have a good accounting system, especially the management accounting system, the institutions need to invest a significant

fee to train accountants and other operating costs. This makes managers have to consider the urgency of investments for management accounting.

In short, the common features are the low degree of financial autonomy, weak financial capacity, and governance capacity. Therefore, the administration in general and the cost management in particular in public higher education institutions is still challenging. This fact poses an urgent requirement for building a cost management accounting model that is suitable for the unique characteristics of these institutions in Vietnam.

Also, the administrator can only make the right decisions when the information provided must ensure the requirements are consistent, reliable, and timely, in which appropriate information is information directly related to the issues that the administrators are concerned about; The reliability of information is based on objective evidence, which truly reflects the issues that are of concern to administrators; Timeliness is shown in the requirement that every business decision is timing, so information is relevant and reliable but provided too late, it becomes meaningless. Therefore, according to Le The Anh (2017), when building a cost management accounting model, it is necessary to comply with the following basic principles:

Firstly, the construction of the cost management accounting model must ensure objectivity and suit the operating characteristics of the institution. In this way, the new cost management accounting model can be promoted as an effective tool for managers. However, when building a cost management accounting model, it is necessary to respect the objective rules of the economy. The information provided from the model must give an overview of the training institution's cost situation.

Secondly, the model must meet the diverse information needs of administrators. In the increasingly fierce competition environment, managers need useful information to be able to make optimal operational decisions. The need to provide information for administrators requires that the cost management accounting system must provide specific details to each activity in the educational institutions and general information to compare and evaluate the activities within the institution.

Thirdly, the cost management accounting model built must ensure the principle of efficiency and cost-effectiveness. To establish and operate the model, educational institutions will have to invest in human and material resources, there must be changes in the way of managing and organizing the accounting work. However, this model needs to have a harmonious combination with the financial accounting system, does not cause difficulties in organizing the general accounting work. Also, this cost management accounting will not be too expensive, but it needs to ensure that the information must be provided effectively. Besides, it is necessary to pay attention to cost control, because all organizations that want to operate successfully must perform well in cost control, especially for educational institutions that have weak financial potential which is still having to rely on funding from the state budget.

Conclusion: The benefits of applying the cost management accounting model for all organizations have been confirmed and acknowledged. To effectively plan development strategies and control costs, building a cost management accounting model is an urgent requirement, to enhance

the efficiency of management and operation in Vietnamese public higher education institutions. Accordingly, educational and training institutions need to quickly based on their characteristics to build a suitable model.

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PROMOTING ADMINISTRATIVE PROCEDURES REFORM IN CUSTOMS TO HELP BUSINESSES IN VIETNAM OVERCOME DIFFICULTIES

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Abstract: Up to now, Vietnam has established trade relations with more than 200 countries and territories around the world and has participated in negotiating and signing many free trade agreements such as CCTPP, EV-FTA ... which requires high commitments on tariffs, expanding markets, protecting intellectual property rights. The great intergration into global market creates many opportunities but also bring challenges for the economy gennerally and the business community particularly. The complicated situation that regional and global ecomonies is now suffering, which includes a slow growth of trade and investment, an increasing strategic competition and trade between some major economies, a fluctuation in price of essential goods, together with the huge impact from the Covid-19 epidemic, has posed many difficulties to the economic development of Vietnam. As a result, it is required an urgent need for state management agencies in charge of import and export activities as well as Customs adminitration to make a change to adapt with the new situation. The neccessary to reform in customs adminitrative procedures to facilitate trade and support business community is vital and has come from the actual situation that Vietnam is currently facing.

Keywords: Administrative procedures reform, import-export, support businesses...

1. SITUATION OF THE EXPORT AND IMPORT GROWTH RATE IN VIETNAM

Since 2000, Vietnam's GDP has been always recorded a positive growth with an average rate of more than 6% per year. In 2019, GDP has reached more than 7% - the highest level in 10 years so far, which shows the stable and sustainable growth in the economy. However, in 2020, due to the impact of some objective and subjective factors, the overall economic situation of Viet Nam has declined, leading to a slowdown in the growth rate of import and export. Statistics recorded in clearance below shows the decrease in the growth rate recently:

Table 1. Export-import turnover, growth rate and the trade balance in Vietnam

Statistics	2015	2016	2017	2018	2019	First 6th month of 2020	Unit
Export-import turnover	327,6	351,4	428,1	480,6	517,26	243,5	Billion USD
Import turnover	165,6	174,8	213,0	236,9	253,07	120,96	Billion USD
Export turnover	162,0	176,6	215,1	243,7	264,19	122,54	Billion USD
Trade balance	-3,6	1,8	2,1	6,8	11,12	1,58	Billion USD
Number of import-export businesses	63,42	73,17	87,34	85,60	93,11	91,27	Thousand businesses
Numbers of declaration	8,46	9,97	10,92	12,05	13,33	6,3	Milliondeclarations

Source: Annual Report of Customs

Table 1 and Chart 1 show that the export-import turnover, the growth rate, and the trade balance from 2015 to 2019 have increased throughout the period. For further clarification, the following passage will analyze and compare among the figures of the last 3 years 2018 and 2019 and the first 6-month of 2020 to see the impressive growth within 2018-2019 period and the decline in the first 6 months of 2020.

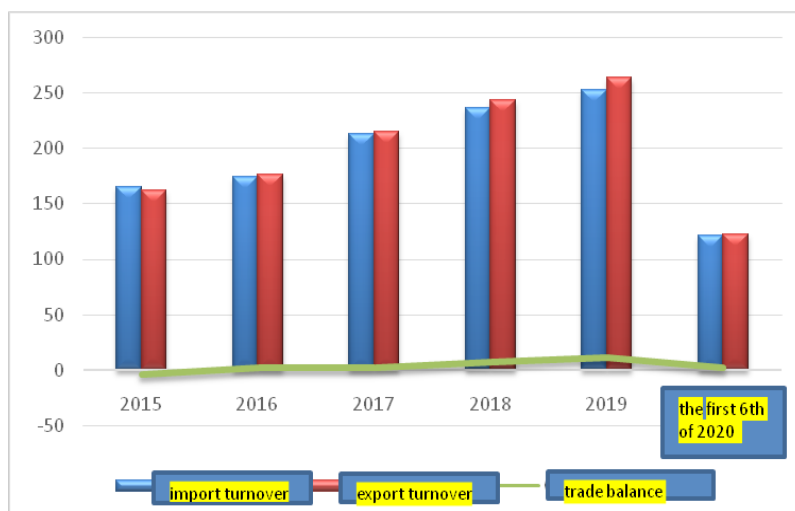


Chart 1: Import-export turnover and trade balance from 2015 to June 2020

Source: Customs Report

The total value of Vietnam’s import and export goods for the whole year of 2019 reached 517.26 billion USD, increasing 7.6% compared to that of 2018. In details, the value of exported goods was 264.19 billion USD in 2019 which increased by 8.4% compared to 2018 and the value of import increased by 6.8% to reach \$253.07 billion. Total import-export turnover with tax is \$115.65 billion which increased by 0.8% compared to 2018. The import turnover is 109.26 billion USD increasing by 9.2% compared to previous year. There are some items that brought a great revenue for the economy such as: coal with the total value of about 3,400 billion VND (increased 92.5% in volume and 48.8% in value), crude oil with the revenue of about 2,100 billion VND (increased 47.1% in volume and 3.1% in value), car with the total value of 16,500 billion VND which increased 70,7% in volume and 72.6% in value.

Thus, with this result, the scale of import and export of goods in 2019 reached a rather high level of 36.69 billion USD, but still much lower than the increase of 52.44 billion USD in 2018. But by 2020, in the first 6 months of 2020, export turnover is 57.98 billion USD, import turnover is 57.68 billion USD, an average decrease of 9% over the same period last year. . In the second quarter of 2020, the export turnover reached 57.98 billion USD, down 9% on the same period last year and down 8.3% against the first quarter of this year; There are 9 items with export value of over 1 billion USD, accounting for 70.2% of total export turnover. Generally for the first 6 months of the year, export turnover reached \$121.21 billion, down 1.1% from the same period last year, of which the domestic economic sector gained \$41.38 billion, up 11, 7%, accounting for 34.1% of total export turnover; foreign investment sector (including crude oil) reached 79.83 billion USD,

down 6.7%, accounting for 65.9%; 22 items with an export turnover of over \$ 1 billion, accounting for 86.2% of the total export turnover, of which 4 items have been exported with over US \$ 10 billion, accounting for 52.7%. In the second quarter of 2020, import turnover reached 57.68 billion USD, down 9.1% over the same period last year and 3% lower than the first quarter of this year; There were 13 imported goods with the value of over 1 billion USD, accounting for 69.9% of the total import value. Generally, in the first 6 months of the year, import turnover reached 117.17 billion USD, down 3% from the same period last year, of which the domestic economic sector reached about 51.55 billion USD, up 0.1 %; foreign invested sector reached 65.62 billion USD, down by 5.4%; There were 22 imported goods with the value of over 1 billion USD, accounting for 81.2% of the total import turnover.

In terms of the trade balance of goods from 2016 to 2018, there was always a positive growth, especially in 2019, the surplus amounted to 11.12 billion USD, reaching the highest level since 2015, with this figure showing the trade surplus of Vietnam in 2019 increased by 62.9% compared to 2018, of which the surplus of FDI enterprises reached 34.56 billion USD, up 23.5%, State-owned enterprises increased the trade deficit to 23.44 billion USD, up 9.6%. In 2019, some Customs Departments reached the highest import and export levels such as Bac Ninh Customs Department with the highest value in the country with 12.99 billion USD, up 2.2%, Ho Chi Minh City Customs Department reached 115.25 billion USD, up 9%, Hai Phong Customs Department 68.8 billion USD, up 14.3%, Binh Duong Customs Department reached 39.25 billion USD, up 4.7 %, Hanoi Customs Department reached 34.83% billion, up 21.4%. This shows that the proportion of enterprises under these Customs Departments is operating very effectively through import-export turnover, the trade balance, makes the import-export speed always increase over the years, especially year 2019. But by 2020, the balance of trade in goods slowed down. Generally, in the first 6 months of 2020, the trade balance of goods continues to have a trade surplus of 4 billion USD (trade surplus in the same period last year was 1.7 billion USD), of which the domestic economic sector saw a trade deficit of 10.2 billion USD; foreign investment sector (including crude oil) saw a trade surplus of 14.2 billion USD. Besides, in the first 6 months, service export turnover reached about 4.7 billion USD, down by 50.3% over the same period last year (in the second quarter reached 951 million USD, down 79.2%). of which tourism services reached 2.4 billion USD (accounting for 51.5% of total turnover), down 56.1%; transportation services reached 636 million USD (accounting for 13.4%), down 70.6%.

Service import turnover in the first 6 months of this year reached about 8.9 billion USD, down 14.4% over the same period last year (in the second quarter it reached 4 billion USD, down 25.2%), of which logistics services load reached 3.7 billion USD (accounting for 41.8% of total turnover), down 2.4%; tourism services reached 2.1 billion USD (accounting for 23.6%), down 32.6%. Trade deficit of services in the first 6 months of 2020 reached US \$ 4.2 billion, equaling 88.6% of the service export turnover. Thus, through the data analysis from import-export turnover, that international trade balance shows that the growth rate of export and import in the first 6 months of 2020 compared to the same period of previous years has slowed down alarmingly. This stems from subjective and objective challenges.

2. CHALLENGES IN IMPORT-EXPORT ACTIVITIES OF ENTERPRISES IN THE CURRENT TIME

Firstly, the international and regional situation is complicated, the global economy, trade, and investment have slow growth; strategic competition and trade between a number of major economies is increasingly tense (US-China, Japan and South Korea ...) Unpredictable fluctuations in the global trading market will lead to global growth, decrease in market size and demand for goods, strong fluctuations in commodity prices (high gold prices, abnormal increases in crude oil ... This makes our country's import and export activities affected. Recently, the Center for Socio-Economic Information and Forecasting (Ministry of Planning and Investment) estimated that the US-China trade war will reduce Vietnam's GDP by 0.09% in 2019 and peak with a decline of 0.12% in 2020-2021, along with the trend of increased trade protectionism, Vietnam's export activities will surely face many bigger challenges.

Secondly, Vietnam participates in many new generation free trade agreements (CPTPP, FTA, with the EU ...) with higher requirements and must fully comply with international commitments, both in terms of tariffs, wide market, intellectual property... creating competition for goods in increasing export activities: The Ministry of Industry and Trade has issued a series of warnings about improving the quality of Vietnamese exports to join the global value chain. Many key export products of Viet Nam, including rice, are of very low value and in danger of losing their export license. In particular, the competitive pressure is increasing when the export of agricultural and aquatic products has encountered many difficulties, including selling prices in the first half of 2020.

Thirdly, the challenge of trade remedies of importing countries: Viet Nam has been and is being very active, proactively resolves issues in trade disputes, and resolves measures, trade defense, overcoming trade barriers of import markets, but nowadays, in addition to trade remedies, many countries also tend to increase the protection of domestic production strictly.

Fourthly, the challenges from the Covid 19 pandemic, number of countries need to adopt a solution of social isolation, blockade. Thus trade and import-export activities in the world meet many difficulties.

Import and export activities, after achieving a fairly positive growth in the first quarter of 2020, Vietnam's trade activities from April up to now have been strongly affected by the Covid-19 pandemic. The negative effects of the Covid-19 pandemic are expected to have a more pronounced impact on Vietnam's trade activities in the second and third quarter of 2020 because from mid-March 2020 up to now, the pandemic has greatly affected to major trade partner markets of Vietnam (US, EU and Japan). Currently, Vietnam's importers postpone orders in April and May and have not negotiated orders from June onwards. Although in June every year, importers will negotiate for year-end orders. The main reason is that the importers use the term "Force majeure" when many countries ask to close cities, even nationwide; people are required to stay at home. For this reason, such products as textiles, footwear, and wooden products are suffering from the impact of the Covid-19 pandemic due to the improvement of raw material sources since the beginning of March, but difficulties in output markets, especially the EU and the US are the two main export markets of Vietnam.

3. RECOMMENDATIONS FOR CUSTOMS

In the fluctuation, in order to dismantling difficulties for enterprises, on March 4, 2020, the Government issued Directive 11 / CT-TTg on urgent tasks and solutions to solve difficulties for production and business, ensuring social security, responding to the Covid-19 pandemic. Implementing the Government's directives, General Department of Customs, as the management agency for import and export activities, should continue to implement recommendations on administrative reforms and business support especially during and after the Covid-19 pandemic.

Firstly, fully and effectively implement bilateral and multilateral trade agreements.

To fully and effectively implement the contents of the customs authority's functions and duties in bilateral and multilateral trade agreements between Viet Nam and other countries or territories, and especially the context world affected by pandemic, Customs Authority needs:

Proposing the implementation of the mechanism of origin certification in the form of electronic data, it's must be ensured the link between the lower authorities of the exporting country and the customs authorities of the importing country during the negotiation process at the regular bilateral and multilateral meetings.

Coordinate with the Ministry of Agriculture and Rural Development in negotiating and implementing the mutual recognition on results of inspection of food quality, food safety, and animal and plant quarantine among countries on the basis of compliance with commitment of the agreement.

Unify import and export codes of the list of goods, codes are suitable for other countries, especially in the EU to reduce difficulties in applying tax codes, ensuring the control of uniform declaration.

Secondly, for the post clearance audit, specialized inspection:

To help businesses reduce difficulties and focus on manufacture and business, the Customs authority needs to reduce inspection in 2020 to facilitate trade as well as to conduct customs management. To promote the implementation of Directive 11 / CT-TTg of the Prime Minister, Customs Authority and relevant agencies do not conduct periodic inspection and post-clearance audit; focus only on enterprises with signs of law violation.

In addition, during the time when the enterprise must submit the finalization report on the use of imported raw materials and supplies to serve the processing, production and export activities, customs should apply to inspect the report with signs of violation in base of risk management. For cases that have not been checked in 2020, they will be moved to the next year or transfer to other forces such as inspectors to plan the inspection in the next period. In case of specialized inspection, post-customs clearance inspection according to signs of violation and inspection and examination on the basis of applying risk management, inspection officers must clearly indicate signs of violation and signs of risk. If the enterprise has a specific suggestion of not conducting inspection or examination due to difficulties in production and business due to the impact of Covid-19, the leader shall consider and decide on each specific case.

Thirdly, continue to inspect and complete legal regulations, customs procedures

Continuing to simplify the customs profiles, the way to submit the customs profiles is as follows:

Eliminate the regulations on submitting unnecessary documents, documents already on the portal of ministries, branches or on the national single-window portal.

Restrict the submission of documents in the form of originals and paper copies, only required to be submitted and presented for the first time for documents that must be presented to the customs authority during making export and import procedures;

Basically, documents will be submitted and handled through the electronic customs data processing system, which does not require direct submission to civil servants and there is no need to sign and stamp these documents.

It is necessary to continue to review to amend legal documents such as developing and issuing a circular amending and supplementing Circular 38 / TT-BTC / 2015 and Circular 39 / TT-BTC / 2018, In which, it is necessary to propose a series of measures to facilitate businesses such as: Simplifying the customs dossier when doing procedures, completely electronic filing of documents in the customs dossier, changing the basis methods of implementing customs procedures, minimizing unnecessary procedures to support the business community while shortening the time for customs clearance and goods clearance. Beside, the Customs sector should continue to propose ministries and branches to approve the review of specialized inspection procedures so that ministries and branches continue to simplify procedures, abolish unnecessary procedures in the context of translation is still complicated.

Fourthly, reducing and simplifying professional stages in customs procedures

It is not required to carry out administrative procedures on the online public service portal if it is done on the customs electronic data processing system; to review and cancel the proposal and approval of tax exemption in customs clearance for each customs declaration of the type of processing, production and export in the process of tax exemption, reduction, refund or exemption; simplify the handover of transported goods subject to customs supervision in case the handover is carried out within the same sub-department of Customs on the basis of ensuring strict management, in accordance with the specific areas of department management.

Fifthly, shorten the time for customs clearance and clearance of goods need:

Invest in increasing equipment, machinery, and equipment to assist customs officers in the process of physical inspection of goods, and supervise the transportation of goods through equipment of scanners, cruise monitoring equipment, and electronic seals, equipments for quick inspection of goods and food safety; in customs operations, reduce the proportion of red and yellow channel, increase the rate of green channel. Reviewing and abolishing documents which directed strengthening management, checking, and enhancing inspection only applicable to a certain period for enterprises in the field of production and business. Research and implement programs to support enterprises to improve the compliance with laws; cut down the number of cases which need to take samples for inspection of goods, shorten the time to return samples, improve the rate of notification of analysis and classification results on time or before deadline.

Review and cut down on fees, charges and taxes related to import and export goods such as: reduction of costs related to export customs procedures, costs of warehousing at border gates;

study and submit to competent authorities to reduce late payment tax for manufacturing enterprises directly importing goods to create fixed assets which are confiscated by customs offices and subject to value added tax assessment.

Solutions to facilitate trade and ensure pandemic prevention such as: creating all favorable conditions for businesses to carry out administrative procedures related to customs; proactively take measures to remove difficulties and problems for organizations and individuals in the course of carrying out customs procedures on the basis of ensuring publicity, transparency, and objectivity in accordance with law; Prohibit all acts that cause difficulties, troubles, harassment, or have negative or harassing manifestations, require organizations or individuals to submit documents, pay fees or charges inconsistent with the provisions of law, slow down the customs clearance process, cause damage or increase costs for the enterprise;

Implement Circular No. 47/2020 / TT-BTC dated May 27, 2020 of the Ministry of Finance providing the deadline for submission of certificates of origin for imported goods in the disease period, check and review documents of imported consignments with import customs declarations registered from January 2020. If the certificate of origin submitted by the enterprises meets the origin criteria to be granted the special preferential tax rates shall be considered and handled according to regulations; For the Customs Departments of the provinces sharing the land border with China, Laos and Cambodia, it is necessary to coordinate with the competent forces at the border gate to continue to maintain measures while ensuring pandemic prevention, ensure clearance of goods, avoid cargo congestion at border gates.

Sixthly, promote applications of information technology to support customs declarants and taxpayers:

Improving the effective implementation of information technology recommendations to assist customs declarants and taxpayers and, at the same time, connecting information exchange with ministries and agencies while handling administrative procedures, including: vigorously exchanging and providing information between the customs authority and other relevant state agencies while handling administrative procedures according to the national single-window mechanism; Sending, receiving, returning results, implementing administrative procedures and answering questions of enterprises and individuals while implementing administrative procedures on the national single- window portal; applying digital reality to the electronic document distribution, increasing online public services 24/7; Strengthen coordination with ministries and agencies to promote the implementation of administrative procedures related to licensing, specialized inspection, and the continuation of information on the national single-window portal to the system, electronic data processing of customs ensures smooth clearance of goods; Improving the database software system to ensure fast data transmission and reception, automatic support and warning for customs officers in the process of handling customs profiles; Continue to strengthen coordination with the State Treasury, Tax authorities and commercial banks in the provinces for electronic tax payment and 24/7 clearance to further promote administrative reform, contribute to shorten customs clearance time; Effectively deploy the national airway single-window system and automatic monitoring and management system at international airports.

Seventh, priority for business dialogue

The Customs sector needs to regularly organize online meetings with a number of business associations, AEO, and foreign-invested enterprises to promptly grasp problems, thereby directing the Customs Department removed for the business community,. Especially in border provinces, where was heavily affected by the closure of a number of secondary border gates, opening lanes as well as restrictions on clearance at main border gates, Customs authorities should coordinate with relevant local agencies to hold bilateral talks with the authorities of neighbor country, in order to facilitate trade on the one hand, but still control the spread of pandemic diseases, and facilitate the import of components, raw materials, machinery and equipment for manufacture on the other hand.

In addition, continue working with port and warehousing operators to review and handle backlogged shipments at seaports to reduce storage and storage costs for businesses, as well as support port operators in optimizing the use of warehouses.

Promoting the exchange information between the customs office and other relevant state agencies while handling administrative procedures according to the national single-window mechanism; applying digital signatures to the electronic document distribution, increasing online public services 24/7; coordinate with ministries and agencies in promoting the implementation of administrative procedures related to licensing, specialized inspection of imported and exported goods through the National Single Window; Connecting information on the national single-window portal with the customs electronic data processing system to ensure smooth clearance of goods ... is an essential thing to do in the current period. /.

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CENTRAL BANKS' MONETARY POLICY - QUANTITATIVE EASING: APPLICATION FOR VIETNAM

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Abstract: *Many developed countries recently decide to expand the money supply through an unconventional measure – quantitative easing which shift the focus of monetary policy towards the quantity of money and the price of money. The additional money injected into the economy is achieved through large-scale asset purchases, such as government bonds or corporate bonds. There are three keys channels that quantitative easing could stimulate nominal spending and ultimately reach the inflation target: i) money in the economy; ii) asset prices; and iii) expectations. The strength and pace of these effects feeding through depend on how market participants response to the extra money that they receive in exchange for the assets they sell to central banks. This paper will detail the mechanism on which quantitative easing have an impact on the economy and the implementation of quantitative easing of central banks around the world, for example, European Central Bank, Bank of Japan, Bank of England and Federal Reserve. The paper also examines the current monetary condition of Vietnam and provides a set of suggestion of using quantitative easing as an alternative monetary policy when other measures might be ineffective.*

Keywords: *quantitative easing, monetary policy, inflation target...*

1. Introduction

Central banks typically conduct monetary policy through control of short-term nominal interest rates that can potentially affect the economy through a variety of channels. Central banks set the discount rate (or the bank rate), which is the interest rate at which banks have to pay for borrowing very short-term loans from central banks. Banks hold central bank money in the form of reserve balances held at central banks and they receive interest rate on those reserves at the discount rate. Banks then face the choice of holding those reserves or lending them out in the market, and thus, the market interest rates are influenced by the level of the discount rate. This then feeds through to a whole range of interest rates faced by households and businesses which in turn affects their spending decisions. Thus, a change in discount rate potentially influences the level of output, employment and inflation. However, when interest rates are very low or near zero, any conventional measures that influence interest rates like setting discount rate are no longer effective because people can always hold currency instead of depositing in bank. Thus, central banks have to rely on an unconventional way of increasing the supply of money in the economy that is quantitative easing.

Quantitative easing is a form of monetary policy in which central banks purchases longer-term securities from the open market in order to increase the money supply and encourage lending

and investment (Joyce et al., 2012). Quantitative easing increases the money supply by purchasing assets with newly-created bank reserves in order to provide banks with more liquidity. Different countries have different approaches reflecting the different structures of their economies as well as how businesses and households obtain finance. For example, European Central Bank (ECB) and Bank of Japan (BOJ) generously lend money to banks to inject reserves into the bank-centric economies while Bank of England (BOE) and the Federal Reserve inject reserves into the economies by purchasing bonds.

2. How does quantitative easing work?

2.1. Injecting money into the economy

The goal of quantitative easing is to inject money into the economy to enable lending, stimulus and encourage households or businesses to spend money instead of saving. Central banks carry out the quantitative easing by buying government bonds or other securities on the market. When paying for financial products with central bank money (or electric money -money that the central bank “prints”), the amount of central bank money in commercial banks as well as the amount of deposits of businesses and households increases. This additional money through different channels will encourage businesses and people to increase spending.

Central banks are the only source of central bank money. Central bank money is kept in central banks in the form of a reserve balances. These reserves are used to make payments between banks. Central banks create more new money electronically by increasing the balances of commercial banks' reserve accounts. Therefore, when buying assets from a commercial bank, the central bank only needs to credit the commercial bank's reserve accounts with the additional funds. As a result, the central bank has expanded the supply of central bank money.

Commercial banks keep deposits for their customers, which can be used by households or businesses to buy assets, goods and services. These deposits are called “broad money”. If a central bank wants to purchase an asset from a non-bank company, the central bank makes a payment for that asset through the seller's bank. The central bank credits the seller's bank reserve account with the funds, and the bank credits the money to the seller's account. Thus, when the central bank buys assets from commercial banks, the monetary base (or narrow money) is increased, meanwhile when the central bank buys assets from non-banks, both monetary base and broad money are increased at the same time. So, the expansion in the broad money is indeed the main focus of quantitative easing. Expanding the broad money will raise asset prices, increase spending, and ultimately bring inflation back to target (Benati, 2005).

2.2. Asset purchased

To be able to pump large amounts of money into the economy in a short amount of time requires a ready supply of assets. Most of the assets that central banks around the world buy are government bonds. Characterized by having a large amount available and sharing similar characteristics, large quantities of government bonds could be purchased by central banks quickly. However, central banks can also purchase corporate bonds or commercial paper but in much smaller quantities. The purpose of buying these assets is to improve the condition of corporate credit markets by becoming a ready buyer for such instruments. This should make it easier and cheaper

for businesses to access credit. Thus, the focus of these operations is to improve the functioning of these markets instead of purchasing a specific quantity of assets.

2.3. Economic channels

Injecting money in the economy by purchasing assets increases the liquidity of the private sector. This is the fundamental mechanism through which the monetary expansion can influence spending and ultimately inflation. Money is highly liquid because it can easily be used to buy goods, services and other assets. The increase in private sector liquidity depends on the liquidity of assets acquired by the central bank. Increased liquidity has an impact on the economy through three main channels. Figure 1.1 below shows these mechanisms.

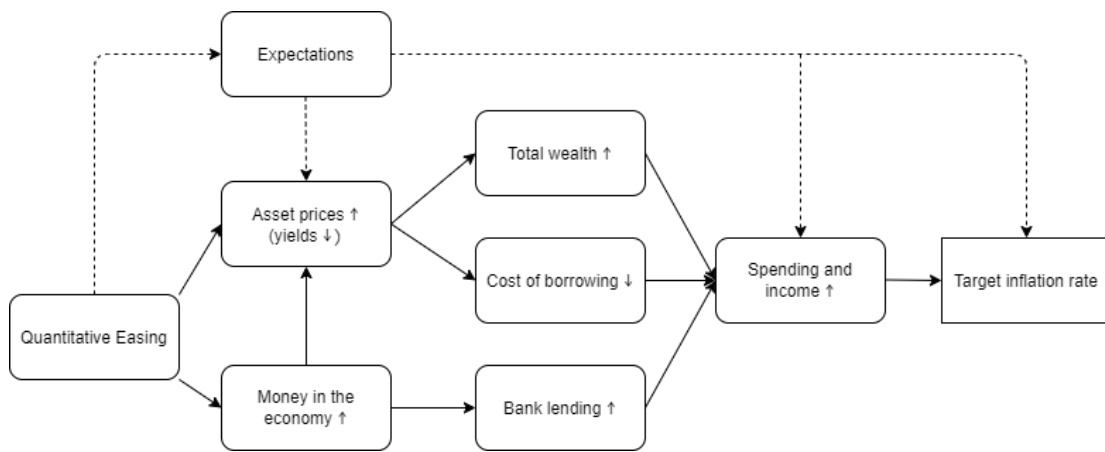


Figure 1. Transmission mechanism for quantitative easing

• **Asset prices and portfolio effects**

Purchases of assets with the central bank money causes the prices of assets to be pushed up. Higher asset prices mean lower yields, which in turn, reducing the borrowing costs for households and businesses and leading to higher consumption and investment spending. Cheaper and easier access to working capital also help businesses to maintain output, improve employments and hence consumer spending. Furthermore, higher asset prices also increase the wealth of the asset holders and thus should boost their spending. So how do central banks influence asset prices through quantitative easing?

When a financial company sells assets to a central bank, the company’s deposits increase. If the company does not consider this additional amount of money to be a perfect replacement for the assets it has sold, it will assume that it is now having an excess amount of money. In order to be able to rebalance its portfolio to the desired composition, the company must use the extra money to buy other assets. However, buying another asset will simply pass this excess money to the buyer, who consequently look for another asset to purchase. This process will increase the price of the asset until all the assets reach their desired level. This effect is also known as the portfolio balance effect.

Generally, as the prices of assets purchased by the central bank increase, the return on investment of these assets will fall relative to other assets. Households and businesses will be incentivized to switch to higher-return assets. This means that the prices of these assets will also increase. Furthermore, central banks inject more money into the economy, which also makes it cheaper and

easier to achieve liquidity. This should make households and businesses more willing to hold other illiquid assets on their balance sheets.

Central banks purchase commercial or corporate bonds with the aim of directly improving the conditions of the corporate debt market. Amid financial stress, investors may be concerned that they will not be able to find buyers for these assets if they need to sell them quickly unless they accept a substantial discount. This makes it more difficult or more costly for businesses to raise finance in the capital markets, as investors will require an extra return to compensate for the increased liquidity risk. By becoming a ready buyer in the corporate debt market, the central bank gives investors more confidence that they will be able to sell their assets when needed and thus reduce the yield on these assets back to normal level. In addition, this also encourages more investors to enter the market and thus increases the amount of available finance.

- **Bank lending and quantity effects**

As aforementioned, after the central bank's asset purchase, commercial banks will have higher reserve balances. This additional pumped of reserves will make it easier for commercial banks to finance a higher level of liquid assets. Commercial banks have new reserves as well as corresponding new deposits when assets are purchased from non-banks. Given the higher level of liquid assets, banks will be encouraged to extend more loans that they previously rejected. In addition, commercial banks also need to keep a high amount of liquid assets to meet the payment demands from customers and financial transactions. With these higher liquid assets increased, banks are also encouraged to hold more illiquid assets in the form of loans because they have the funds to cope with potential increased payment. With more bank lending to households and businesses, spending and investment are also increased accordingly. Even when commercial banks do not want to expand loans to households and businesses, the increase in reserves will cause interbank interest rates to drop.

The extra deposits created by commercial bank lending will go to households and businesses. As discussed above, when their money balance raises above desirable levels, businesses and households will respond by purchasing more goods and services. This will increase nominal spending, prices of goods and services, and ultimately inflation. A higher money balance also helps businesses maintain working capital and employment levels they provide.

- **Expectations**

Asset purchases could also have a significant impact on expectations. By having the central bank will do whatever it takes to achieve inflation target, future inflation expectations will be anchored at the target. Even if nominal interest rates are kept at low level, it also means that real interest rates are fixed at low level, which should encourage more spending. Expectations for higher inflation also affect firms' price-settings behavior and thus, have a direct impact on inflation. More generally, a perceived improvement in the economic outlook can boost confidence and encourage people to spend.

3. Factors influencing the strength of these channels

3.1. Response by sellers of assets

If the market works effectively, the prices of all assets will change rapidly as soon as the central bank announces its quantitative easing policy. However, the prices of some assets will only

change slowly as transactions take place if financial markets are impaired or if there is uncertainty over how sellers adjust their portfolios.

The effect on asset prices will depend on the sensitivity of the demand for money to changes in the asset returns. The benefit of cash is high liquidity but at the cost of opportunity cost as the yield of holding money is essentially lower than other assets. So, the demand for money will increase as the rate of return of other assets decreases. An increase in the money supply will be maintained only if the rate of return on other assets decreases.

Money demand is also influenced by a number of other factors such as economic performance. As the price of assets increases, nominal spending will increase and thus cause the demand for money to move upward. This will reduce the variation in asset prices and the rate of return.

Thus, the two main factors that affect the asset price channel are the elasticity of the demand for money with the change in yield and the sensitivity of money demand with a change in spending.

3.2. Response of capital market

When a central bank buys high-quality private-sector assets, it makes it easier and less costly for businesses to raise capital in the corporate debt market. However, the degree of impact will depend on an investor's willingness to expand the financial resources they are providing in the corporate debt market. Due to the financial risk involved, the central bank will only focus on high-quality debts, but businesses with poor-quality debts will also find it easier to raise finance because when investment-grade firms borrow in the capital market, banks will be more likely to lend more to speculative-grade firms.

3.3. Response by banks

The effect of additional reserves on banks' liquidity depends on how other banks in the market react. If the bonds are purchased back from non-banking sectors, the liquidity of banks will be relatively increased. Thus, a higher liquidity bank balance will encourage banks to lend more.

3.4. Response of businesses and households

The effect of buying assets also depends on the response of households and businesses to changes in the amount of money held and asset prices. The impact of more money holding will depend on whether households and businesses will choose to pay off debts or expand spending.

When the cost of borrowing is lower, businesses are more likely to spend more on investment projects. However, the degree of influence also depends on the expected demand for their goods and services.

The impact on household expenditure will depend on whether an increase in the price of an asset is considered persistent. If households consider asset prices to continue to remain higher, the impact on spending will tend to be stronger.

4. Exiting strategy

As the economy recovers, the outlook for medium-term inflation will improve. When inflation seems to surpass its target, the central bank will want to tighten monetary policy to reduce spending and lower inflation.

Tight monetary policy can be achieved in a number of ways. The central bank can combine raising interest rates and selling purchased financial assets to reduce the amount of money in the economy. In addition, the central bank can reduce the supply of reserves without having to go through the sale of assets by selling short-term government bonds (Blinder, 2010). The central bank could choose the most suitable monetary tightening method based on the state of the economy at the time.

5. Quantitative easing policy of ECB, Fed, BOE and BOJ

5.1. Policy of the ECB

On October 15, 2008, the ECB announced that it would lend as much as commercial banks wanted at a fixed-rate tender, full-allotment (FRFA) as long as the banks had collateral. The ECB also expands the list of eligible collateral. The ECB has implemented FRFA through the regular lending procedures. In normal times, the ECB uses the refinancing tool - direct lending to banks at two maturities, main refinancing operations (MROs) with two-week period and long-term refinancing operations (LTRO) with a period of 3 months. Under the new policy, ECB fulfills all of its MRO and LTRO lending needs at its main refinancing rate. From October 2008 to May 2009, the ECB reduced the interest rate from 4.25% to 1%.

Since 2015, ECB has pumped more than \$600 billion into the economy through its quantitative easing programs.

5.2. The Fed's QE1 and QE2 program

While the ECB extended loans to commercial banks, the US Federal Reserve pursued a policy of buying assets. On November 25, 2008, the Fed announced plans to buy \$ 100 billion in government-guaranteed corporate debt (GSE) and \$ 500 billion in mortgage-backed securities (MBS) of those GSEs. On March 18, 2009, the Fed added a plan to buy \$ 100 billion of GSE debt, \$ 750 billion of MBS, and \$ 300 billion of long-term government bonds.

From 2008 to 2015, the Central Bank of the United States bought bonds worth more than \$ 3.7 trillion (Fratzscher et al., 2018).

5.3. The BOJ's Special-Funds-Supplying Operations

On December 2, 2008, BOJ announced that it would lend banks unlimited loans at near zero interest rates through special funding programs (SFSOs). SFSOs offer 3-month loans to banks at a non-mortgage overnight rate of 0.3%. The only limit on the size of BOJ's loans is the amount of available collateral (commercial paper and corporate bonds). On December 19, 2008, the BOJ continued to cut the overnight interest rate to the child by 0.1% and announced that it would increase the amount of government bonds (JGBs) purchased and announced a program to buy corporate financial instruments.

5.4. The BOE's program

On January 19, 2009, the Her Majesty's (HM) Treasury announced the creation of an Asset Purchase Facility (APF) run by BOE. The private asset trade program allows the BOE to purchase up to £ 50 billion "high quality private sector assets" to increase the availability of business credit and reduce the illiquidity of underlying instruments.

From 2009 to 2012, BOE generated over £375 billion in new money through its quantitative easing program.

To summarize, from 2008 up to now, the three central banks (BOE, BOJ and ECB) have bought assets with private credit risk exposure, to remove those risks from the market. The three central banks (Fed, BOJ and BOE) have been trying to use asset purchases to stimulate the economy through traditional interest rate channels by buying back long-term assets, reducing the amount of duration held by the public and thus, lowering long-term real interest rates (Bernanke et al., 2004). All four banks have used asset purchases to improve the functionality of specific markets.

6. What to expect for Vietnam?

Currently, in Vietnam, the money supply mechanism is relatively different from many other countries with interbank markets and capital markets. In Vietnam, the overnight rate and the 3-month rate in the interbank market is only 0.15% a year and 1.35% a year, respectively (State Bank of Vietnam, 2020). Meanwhile, the 3-month deposit rate in the capital market is 3.5 to 3.8% a year.

The central bank can use the quantitative easing tool to lower interest rates in the capital market. However, if the SBV purchase assets from commercial banks, it is difficult to reduce the interest rates of the capital market because the bank's credit growth is currently low due to Covid. According to the State Bank of Vietnam (SBV), by the end of June 2020, the credit growth was at 3.26% which is only half of last year and still far from the target of 14% for this year. The lower credit growth is due to commercial banks unwillingly to extend more new loans because of the increased risk of bad debts. Even though, SBV has implemented various policy on business support in order to stimulate the economy during this hard time, the caution of commercial banks has led to a slower improvement of the economy.

If the SBV implements the quantitative easing policy by purchasing assets from commercial banks. Commercial banks could be supplemented with additional liquid assets in the form of new reserves, this could encourage the banks on lowering the criterial and excepting new loans. Thus, this could help the government in stimulating the economy as more loans are excepted, households and businesses' investment and spending consequently increase.

Furthermore, if the SBV decide to purchase assets from non-bank companies, it can reduce interest rates of the capital market and thereby stimulate consumption and investment. The SBV can pursue a private-sector bond buying policy in the same way that the Fed and BOE have done when corporate bonds are still growing rapidly. In the first quarter of 2020, the amount of bonds issued by businesses is still up 39% over the same period last year with a total amount of 47,500 billion VND. When SBV purchase assets from non-bank companies through the capital market, it will consequently increase the prices (lower the yield) of those assets and other assets in the market (through portfolio effect). This will make it easier and cheaper for businesses to raise money and thus, will increase spending and investment.

7. Conclusion

The adoption of central bank large-scale asset purchases, or “quantitative easing”, has shifted the focus to the quantity of money as well as the price of money. Pumping more money into the

economy could spur spending, bringing inflation back to its medium-term target. Stimulating the economy through a number of channels and the response of those who receive money is key to the success of this policy.

The current application of quantitative easing is done by central banks in developed economies around the world (such as the Fed, BOJ, BOE and ECB). However, the SBV can also refer to this policy as an alternative to conventional monetary policy when interest rates are falling lower and lower as the economy develops. This has a practical implication for SBV as at the moment, the economy has been under huge impact of Covid-19. In order to achieve many development targets of this year, SBV has to stimulate the economy, improve spending and investment. Thus, quantitative easing is one of the unconventional monetary policy that SBV could rely on when other policies are deemed to be ineffective.

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CORPORATE INCOME TAX INCENTIVES FOR SMALL AND MEDIUM ENTERPRISES IN VIET NAM

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Abstract: *Corporate income tax incentives are considered as the general trend of countries around the world. Over the years, Viet Nam has had many preferential policies on income tax rates for domestic enterprises, especially small and medium-sized enterprises. This is an important measure to promote the development of these enterprises. This document uses the method of synthesis of documents in order to analyse the effectiveness of these incentives. The results show that corporate tax incentives are not highly appreciated. In addition, this policy is also detrimental to the state budget revenue which has been in deficit for many decades. In order to promote the effectiveness of this measure, the State needs to review and analyze in detail the base tax incentive scenarios, so that the suitable policy can be issued.*

Keywords: *corporate tax, small and medium-sized enterprises, tax incentives, state budget*

1. Introduction

Small and medium-sized enterprises play an important role in the economic development of Vietnam. Small and medium-sized enterprises (SMEs) have spillover effects to the entire economy. Statistics of the General Statistics Office (GSO) in 2017 show the overwhelming number of SMEs in Vietnam over the years. Based on labor criteria, up to 98% of enterprises in Vietnam are SMEs. SMEs also account for over 93% of the total number of enterprises in the form of: State-owned enterprises, private enterprises, joint stock companies and foreign-invested enterprises. Compared with large firms, SMEs do not have much economic advantages. Overall, however, the role of these firms in the economy cannot be denied. This role has been proven in different studies on SMEs by many scholars. Basically, they include: (i) Helping to solve the employment problem, reducing unemployment rate; (ii) Contributing to the total added value of the economy; (iii) Making significant contribution to the state budget.

In spite of many positive contributions to the economy, SMEs still face many difficulties during operation process. About 98% of SMEs are private companies and mostly small businesses. According to data released by GSO in 2017, up to 94.46% of large-scale SMEs only account for 5.54% of all businesses. The phenomenon of “lack of medium-sized enterprises” or few medium-sized businesses is a real concern. The limited scale is the reason for poor competitiveness of SMEs in recent years. It is difficult for SMEs to access modern technology. These enterprises mainly carry out production and business activities based on advantages of low cost and relationship rather than based on knowledge, technology, innovation and competitiveness. Therefore, their operations are unsustainable, especially in the context that the world economy is developing based on technology revolutions.

When the Covid-19 epidemic has spread from the beginning of 2020 until now, the SMEs has been facing many difficulties, especially when the measures of social distance were applied. The number of enterprises that dissolved or suspended business has increased sharply, mainly in small-sized and fragmented companies. The socio-economic data in the first 8 months of 2020 publicized by GSO shows that: the number of enterprises temporarily suspending their business is nearly 34.3 thousand, an increase of 70.8% compared to the same period last year; 24.2 thousand companies stopped working and waited for dissolution procedures, down 5.9%; out of 10.4 thousand enterprises that completed the dissolution procedure, there were 9.2 thousand ones with capital size below 10 billion VND; 168 enterprises with capital scale of over 100 billion VND. Due to the unsustainable operating foundation and low capital resources, SMEs still maintain their operations largely in moderation rate. The decline of enterprises in this sector has led to the reduction in growth rate of the country and budget revenue as well as the increase in unemployment rate.

Faced with alarming situation on the development prospects of SMEs, the government has taken a series of measures to help businesses overcome the pandemic. One of the important policies is to reduce and extend the time for paying corporate income tax of enterprises in this area. However, whether these policies are really reasonable and have much meaning for SMEs. To learn more about this issue, this study focuses on analyzing corporate tax incentives for SMEs in Vietnam in recent years.

2. Corporate tax and SMEs in Viet Nam

According to the understanding of the Law on Enterprise Income Tax of Vietnam in 2013, the Corporate Income Tax (CIT) is a direct tax on the turnover of enterprises. Thus, if this amount tax is large, it will affect the retained profits to re-invest in production and business of enterprises. The more profits are reinvested, the more enterprises have the opportunity to expand, thereby having a larger revenue stream, and thus the greater the contribution to the state budget. From the perspective of aiming to improve production and business capacity for enterprises while ensuring state budget revenue, the government needs to build a reasonable CIT rate.

SMEs are considered as “growth drivers” and “backbones” of the economy. To continue promoting SME development, the state needs to have separate support measures on income tax for this region. Over the years, the state has tried to offer SME income tax incentives. However, in order to assess whether these incentives are reasonable, it is necessary to analyze the government’s policies.

Table 1: Summary of Vietnam’s corporate income tax policies

Year	Corporate tax rate	Legal normative documents	Conditions
2008	The CIT rate is 25%. SMEs are entitled to a 30% reduction of CIT	Resolution No. 30/2008/NQ-CP	+ Chartered capital under 10 billion VND + The number of employees is not more than 300 people

2012	SMEs are exempt from CIT for certain professions	Circular No. 140/2012/TT-BTC	SMEs have income from providing shift rations to workers
2013	The CIT rate is 22%. Enterprises with total revenue not exceeding VND 20 billion / year are eligible for the tax rate of 20%	Corporate income tax Law No. 32/2013/QH13	
2016 - 2020	The CIT rate is 20%	Amendments to Corporate income tax law in 2013	Applicable to all types of business
19/6/2020	30% reduction of CIT payable by 2020	Resolution No. 116/2020/QH14	Enterprises with total revenue in 2020 not exceeding 200 billion VND

Source: Author's Synthesis

Before 2013, the CIT rate applied generally was 25%. In which, there are a number of incentives for SMEs. Specifically: According to the 2008 CIT Law, except for SMEs in lottery, real estate, securities, finance, banking, insurance, production and business of goods and services subject to special consumption tax, enterprises ranked 1, special class belonging to economic groups, corporations, and SMEs are entitled to a 30% reduction of CIT. This is seen as the state's initial move to provide CIT incentives to SMEs in Vietnam.

In 2012, businesses and organizations earning income from providing shift rations to workers are exempt from corporate income tax for that year. In case the enterprise is entitled to a 30% reduction of both CIT and tax exemption groups, for the same CIT amount, such entity is allowed to choose the most beneficial tax incentives.

In addition to tax exemption and reduction, the corporate income tax Law dated June 19, 2013 stipulated that businesses with a total annual revenue of 20 billion or less will be applied 20%, while the common tax rate is 22%. This incentive level is applied during the period from July 1, 2013 to the end of 2015.

Since 2016, there is no separate incentive policy for SMEs when all businesses pay CIT at the same rate of 20%.

Recognizing the important role of SMEs, in order to promote their growth, a more open tax policy is needed. The Law on Support for SMEs 04/2017/QH14 of 2017 was passed under which SMEs are allowed to apply for a lower than normal CIT rate. Some proposals for tax incentives for SMEs include: enterprises with a total annual revenue of less than 3 billion VND and the average number of employees participating in social insurance of less than 10 people will have to pay only 15% of the tax revenue. For enterprises with the average annual number of employees participating in social insurance from 10 people or less combined with the condition that total annual revenue is from 3 billion VND to 50 billion VND, the tax rate of 17% is applied. CIT exemption for 2 consecutive years when there is taxable income for small businesses, micro enterprises newly

established from household businesses. These drafts are still in the analysis process and have not yet been applied.

By 2020, due to the impact of the Covid 19 epidemic, many SMEs' activities were delayed. A large number of businesses falls into the state of no revenue, or very low turnover, so the tax payment is also a problem for businesses now. In order to support businesses to overcome this difficult period, on June 19, 2020, the National Assembly's Resolution No. 116/2020/QH14 approving a 30% reduction of CIT payable by 2020 for in case the enterprise has the total revenue in 2020 not exceeding 200 billion VND. Accordingly, it will help businesses save an amount of money to use for the purpose of maintaining operations as well as reinvesting in expansion, production and business development.

3. Reviews

Achievements

From the above regulations on CIT policies for SMEs, it can be seen that over the past 10 years, the government has made important moves to help overcome difficulties and support these type of businesses to maintain and to expand production activities. Some specific results are as follows:

Firstly, creating motivation for SMEs development. Corporate tax incentives help businesses accumulate reinvestment capital, contributing to the increase of number and size of SMEs in Vietnam. Thereby more jobs were created and income for employees has been higher. This has been making important contributions to economic growth and social stability.

Table 2: Size of Vietnamese SMEs

Year	No. of SMEs	Total capital (Million VND)	Total average capital (Million VND)	No. of labor
2008	192.200	2.108.421.277	7.629	3.348.741
2009	237.266	3.292.225.035	9.398	3.893.814
2010	277.626	4.681.677.229	10.970	4.347.743
2011	312.624	5.369.536.374	13.450	5.009.658
2012	342.964	7.044.578.530	16.863	5.179.204
2013	373.203	7.427.115.827	17.175	5.321.370
2014	402.249	9.629.698.043	20.540	5.682.980
2015	442.486	12.381.449.199	19.901	6.402.408
2016	477.884	15.615.160.134	23.940	6.758.398
2017	508.460	19.414.706.228	27.982	7.170.540

Source: Ministry of Planning and Investment

Incentives on CIT rates combined with policies to encourage small household businesses to switch to micro and small businesses have produced positive results on the scale of business growth. The above data shows a strong growth in the number of SMEs as well as the size of firms. The total capital of the businesses has increased steadily over the years; the average total capital has also grown. It can be seen that the capital size of enterprises in this sector after 10 years (since 2008) has increased approximately 10 times. Regarding the number of employees, the SME

sector has created several hundred thousand additional employees per year. The average number of employees per enterprise tends to decrease, but this is consistent with the development trend of the economy in the context of the ongoing technology revolutions.

Second, the positive contribution of SMEs to the state budget. The preferential tax rates, tax exemption and reduction regulations do not reduce state budget revenues, on the contrary, increase state budget revenues from this sector. Statistics of the GSO show that the budget revenue is always at a high level from 180 to over 200 trillion VND, accounting for approximately 30% of state budget revenue. This is a very positive result for an area with a relatively low share of capital in the entire economy.

Third, the gradual adjustment of CIT and the special incentives for small, medium and small sized enterprises perfectly match the trend of adjusting CIT rates of most countries in the world. The OECD countries reduced their CIT rates from 32% to 26% and 25% respectively in 2000, 2008 and 2015. The year 2017 is marked as a year with many corporate tax incentives when many countries in Europe reduces the CIT rate to 21-24%. In Asia, countries also implement a CIT reduction roadmap to stimulate business growth. In Southeast Asia, Thailand is considered as a typical country in terms of corporate tax incentives. The common CIT rate is 20%, small businesses receive a preferential tax rate of 15%. The period 2016-2017, with the aim of further promoting the development of small-scale enterprises, Thai government provides full income tax exemptions for these businesses in 2016; and in 2017 the 10% tax rate applies to businesses with taxable income greater than 300,000 Baht. As the Covid-19 epidemic hit, the Thai government also introduced a series of tax exemptions and reductions for small and medium sized businesses. Therefore, it has helped businesses maintain stable operations during the pandemic time.

Limitations

Besides the results achieved, the corporate income tax policy for SMEs in Vietnam still remains some limitations as below:

First, the effectiveness of tax incentives is not high. Due to the lack of the specific preferential tax rates for SMEs, these enterprises have not received the necessary incentives to expand production and business activities. In fact, the amount of tax incentives is still much lower than the SMEs' need for financial resources. Although there are proposals on preferential tax rates of 17% and 15% for small and micro enterprises, however, this tax rate has not yet been applied. The application of 30% tax incentives for businesses in the context of Covid 19 means that most businesses will receive this incentive (In fact, the number of businesses achieving a turnover of over VND 200 billion is very small). Moreover, in the current epidemic context, most businesses fall into a loss situation, especially small and medium-sized enterprises, so the number of businesses in this region gaining the above deal is not much. In addition, although there are tax incentives by industry and region, the exemption and reduction of corporate tax incentives are not appropriate and cover all the subjects and fields where SMEs are focusing a lot like startups in the field of science and technology, business enterprises in the field of supporting the development of SMEs ...

Second, the unreasonable calculation of tax reduction incentives affects state budget revenues, especially when the economy falls into crisis. The corporate income tax reduction leads to the

smaller revenue for the State, while the government budget is mainly based on tax revenue. In fact, tax incentives are just one of the measures to stimulate the growth of SMEs. In addition to this method, the government has to use other policies such as subsidy packages, preferential loan packages and other support policies ... all must be obtained from the budget. In the context that the current Vietnamese budget is still in a state of high overspending and lasting for many years, the unreasonable application of tax incentives makes the budget deficit more serious. In the recent Covid 19 epidemic alone, a 30% reduction in corporate income tax payable for small and micro enterprises, according to the Ministry of Finance's estimate, will reduce state budget revenue by about VND 15,840 billion. In the case of continuing to extend tax reduction for both medium-sized enterprises, this number could reach 22,440 billion VND. However, with the current uncontrolled disease situation, the application of tax exemption and extension measures (if there is no alternative solution) will make the budget deficit more and more difficult.

4. Suggestions

To overcome the above limitations, the author gives some suggestions as follows:

Firstly, review all preferential tax policies, consider which policies are no longer suitable or ineffective, so they should be eliminated or amended, thus avoiding wasting state budget resources.

Second, it is necessary to have a detail and clear analysis of current SMEs as well as their future development trends in order to develop appropriate and effective corporate tax incentives. Specifically, what are the key business fields of SMEs, which sectors bring the highest efficiency, which sectors are limited, and which sectors are considered to be the driving force and have great pervasive power in the economy; building segments for SMEs according to the criteria of revenue, job creation, spillover ... Such specific classification will help the government build a long-term effective tax policy.

Third, building an overall model for each specific preferential tax rate scenario. For each scenario, what is the specific reduction in budget revenue. At the same time, forecast the prospects of applying that tax rate, such as the prospect of the scale of development, the revenue of SMEs in the future. From there, it will ensure the sustainability of state budget revenue.

Fourth, calculate whether corporate tax incentives are really effective or other government incentives will bring better results. For example, comparing the option of applying the preferential tax rate of 17% with SMEs and the mechanism for lending these enterprises at a preferential interest rate of 4% with the option of only applying the preferential tax rate of 15% or with the option that only applies a preferential interest rate of 2%. Such calculation is not only effective for the enterprises themselves, but also for the government's budget revenue and the saving of other costs.

Fifth, tax bases should be based on income instead of revenue. Such calculation both reduces management costs for businesses and creates fairness among businesses of the same size.

Sixth, review administrative procedures related to corporate income tax in particular and tax incentives in general for SMEs. Applying 100% of technology in tax administration will improve the simplicity and transparency of tax procedures. Thereby, this helps both saving management and operating costs for the state and enterprises, while avoiding wasteful loss in the tax collection process.

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RESEARCH FACTORS AFFECTING PROFIT ADJUSTMENT OF THE LISTED FIRMS IN THE REAL ESTATE AND CONSTRUCTION INDUSTRIES ON VIETNAM STOCK MARKET,

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ABSTRACT: *The paper uses the FEM (fixed effects regression model) and REM (the random effects regression model) on the Eviews 8.0 software of the profit reflection model to analyze the Factors affecting profit adjustment behavior of companies listed on the Hanoi Stock Exchange, Ho Chi Minh City in the real estate and construction industries of Vietnam. The groups of factors include: equity, corporate income tax cost, stock price, ROA coefficient; from there, providing evidence that companies listed on Vietnam's stock market show signs of manipulation and adjustment of accounting profit. Evidence of this manipulation provides warnings for investors to be more cautious in the use of publicly available financial information, as well as recommendations to authorities such as the Ministry of Finance, the Commission, the Securities and Exchange Department and the General Department of Taxation in enacting the accounting and tax policies.*

Keywords: Profit management, profit adjustments, financial statements

Abriviations: *Financial statements (FS), Enterprises (E), EBT (Earnings before tax), Real Estate (RS), Construction (C), Securities Commission (SC)*

1. Introduction

When assessing the performance of a business, both investors and management are very interested in the profit of the financial statement. According to Lev (1989), the value of the enterprise was highly appreciated as the result of an increase in the profit, and in the contrary, the decreased one would lead to a fall in the value of the entity. Therefore, many companies manipulated the profit to make it more attractive. Davidson, Stikney, Weil (1987) said that managing profit is an action on purpose to prepare the financial statements with the expected amount under the recognized accounting principles.

Watts, Zimmerman (1990) believed that the profit manipulation occurs when the management would manage the accounting information within or over the permitted limitation on their own purpose. Healy and Wahlen (1999) claimed that “profit adjustment is the management’s use of their subjective assessment in disclosing financial information or economic transactions to manage the financial statements to provide shareholders and related parties with the aimly adjusted financial information about the financial situation or changes in the finalization of the contracts with the terms under the accounting information”. Ronen and Yaari (2007), from a neutral viewpoint,

believed that managing profit is not bad at all times and it is difficult for us to make it clear whether the purpose of manipulating profit is fraud or just simply to manage expenses under the expected budget for the proposed target profit.

There are many different views, even opposites about adjusted profit, but in terms of principles, it is still followed, just the completely accepted flexible application. However, if this adjustment causes the distortion of the reported information, the bad quality would have a bad effect on shareholders in particular, on the decisions of the information users in general.

On the aim of distorting information, there are some common purpose of the earnings management as following: (i) investment attraction for the listing on the stock exchange and push up the company's stock price; (ii) changes in financial ratios because the relationship between creditors (banks, financial institutions, etc.) and enterprises must sign contracts with many binding terms or conditions based on financial ratios; (iii) avoidance of the reported accounting profit at the high level to rationalize the adjustment of taxable income, thereby reducing the amount of income tax payable and to avoid authorities' actions to change policies to regulate enterprises' activities such as reducing tax incentives, investigating the supposed monopoly behavior of enterprises, (iv) achievement of the policy of remuneration for operators and administrators.

2. Research overview and research hypotheses

In the world, the researches on the adjustment of profits in general or the research on the factors relevant to the adjustment of profits in particular are researched by many scholars in many aspects, are widely conducted in the developed countries such as France (Fathi, 2013), UK (Marinakos, 2011), US (Li, 2010) or Canada (Othman and Zeghal, 2006). In addition, a lot of researches have also been conducted in the emerging markets and developing countries such as Iran, Tunisia, Malaysia (Gumanti, 1996; Rahman and Ali, 2006; Sahlan, 2011; Nassirzaeh, Salehi and Alaei, 2012; Charfeddine, Riahi and Omri, 2013).

The relationship between the financial performance and profit management should be shown in lots of research. Chen, Cheng and Wang (2010), Chargeddine, Riahi and Omri (2013) sorted out the factors related to earnings in Tunisia into 2 groups, "deter" and "promote", believed that the financial performance should be a key factor of the stock price directly affecting to the value of the entity. For the reputation, many managers manage the earnings to avoid the fall in the entity value due to the stock price drop (Hirshleifer, 1993).

Research by Dechow (2012) has shown that off-balance sheet and non-financial ratios have an impact on the behavior of adjusting profit information in enterprises, moreover, financial indicators are the main factors affecting the earnings item of the financial statements. Depending on the goals of the business, managers adjust accounting profits thereby changing stock prices. Research by Li (2010) in the US has shown that the groups of factors affecting profit adjustment behavior belong to factors within enterprises, including: company size, transaction volume, development prospects of the company, the accuracy and dispersion of the prediction. The results showed that businesses adjusted profits to avoid the income loss threshold, an unexpected one.

Research by Siregar, Utama (2008) has studied the relationship between ownership structure to profit management behavior. Sahlan (2011) studies a group of variables related to board

characteristics, audit, ownership structure and firm size. Some others focus on deeply understanding a specific factor such as the study of Kim et al. (2003) on firm size or of Alsharairi & Salama (2012) on debt ratio.

Numerous studies have demonstrated that firm size and political costs are positively related, that is, the larger the firm is, the more costly the political cost is (Watts, 1997; Tehrani and partners, 2009). Firm size is a widely used variable that represents the political cost incurred in studies of profit management (Watts, 1997; Tehrani et al., 2009; Alves, 2012; Chargeddine, Riahi and Omri, 2013). Research by Alves (2012), Fakhfakh and Nasfi (2012), Charfeddine, Riahi and Omri (2013), Nassirzadeh, Salehi and Alaei (2012), Pham Thi Bich Van (2012), Nguyen Ha Linh (2017) show that the bigger the company is, the more often the profit is adjusted; Factors affecting the adjustment of profits are divided into 02 groups: (1) factors of enterprise characteristics; (2) the factors of the characteristics of management and control. In which, the first factor group includes: debt ratio, financial performance, company size. The second group of factors includes: Board size, number of board members, concurrent CEO and chairman of the board, ownership structure, external audit. In addition, a study by Dao Nam Giang (2020), has provided evidence that companies listed on the stock market of Vietnam commit to adjusting accounting information to avoid reporting losses.

All the above analysis shows that analyzing the factors affecting the earnings management behavior is scientifically and practically meaningful. Following the previous studies, the authors have focused in-depth research on 04 specific factors of the business characteristics (financial performance and company size) that affect management behavior in companies in the two sectors of real estate and construction listed on HOSE and HNX2 are: (i) Equity, (ii) CIT expense, (iii) ROA coefficient, (iv) stock price in the period 2015-2019. The research hypothesis is given as

Hypothesis 1: *The relationship between the size of companies in the two sectors of the real estate and construction listed on the Vietnam stock exchange and earnings management is positive.*

Hypothesis 2: *The relationship between CIT expense of companies in the sectors of real estate and construction listed on the Vietnam stock exchange and profit manipulating is negative.*

Hypothesis 3: *The financial performance of companies in the sectors of real estate and construction listed on the Vietnam stock exchange and profit manipulating is negative.*

Hypothesis 4: *The stock price of companies in the sectors of real estate and construction listed on the Vietnam stock exchange and profit manipulating is negative.*

3. Theoretical basis and research model

a. Theoretical basis

To study the factors affecting the earnings management behavior of enterprises in the real estate and construction industry listed on the Vietnam stock market, the authors use the factual accounting theory - The positivist accounting theory (PAT) is the neoclassical economic one, strongly developed in the 1970s and 1980s, represented by Watts and Zimmerman (1986). Representative theory (Jensen and Meckling, 1976) is an important one in economics and has become the foundation for empirical accounting studies (Healy, 1985; DeAngelo, 1986, Jones, 1991). This theory provides

a specific perspective on the role of accounting information from the early days when the capital market and joint stock companies were formed until today. In addition, agency theory helps us see the important role of accountants in regulating representative relationships appearing in the capital market, and in regulating conflicts of interest when shareholders have the ownership of property but give the right to use to another group of people; Asymmetric information theory; Tax avoidance theory - In continental Europe, the Roman “*fraus legis*” theory is used as the basis for anti-avoidance measures. According to this doctrine, the exercise of rights arising from a contract or the law will be considered to abuse the law if it is contrary to the principle of good faith. This is the theory in the private sector to apply to the tax area under public law, so European countries apply very cautiously even in the provisions of law, as well as in judicial practice. The reality is clearly that there are both acceptable and unacceptable tax avoidance (improper tax avoidance).

b. Research model

The common models of the profit management behavior study are Healy Model (1985), DeAngelo Model (1986), Jones Model (1991), Modified Jones Model (Dechow, Sloan and Sweeney, 1995), and many modifications from Jones’ original model (1991). However, the research team under the study by Nguyen Ha Linh (2017), conducted a series of tests to determine that the suitable model to study is the multiple regression one according to FEM, REM method.

- Multiple regression model

$$LNTT = f(VCSH, TAX, ROA, PR)$$

Including:

Profit before tax: reported on the financial statement of the listed companies in real estate and construction industry in Vietnam.

Equity: Represent the size variable, reported on Balance Sheet of the listed companies in real estate and construction industry in Vietnam.

TAX: CIT expenses of the listed companies in real estate and construction industry in Vietnam.

ROA (Return on asset): Earnings from assets in listed firms in real estate and construction industry on the Vietnam stock exchange.

PR: The stock price annually recognized in December, 12 by listed firms in real estate and construction industry on the Vietnam stock exchange.

- Regression equation:

The object of the study is listed companies on the stock exchange from 2015-2019, so the collected data will be shown in tabular format. The model will be built by two regression equations OLS according to REM and FEM.

Regression equation (1) by FEM:

$$LNTT = \beta_0 + \beta_1 VCSH_{it} + \beta_2 TAX_{it} + \beta_3 ROA_{it} + \beta_4 PR_{it} + \varepsilon_{it}$$

Regression equation (2) by REM:

$$LNTT = \beta_0 + \beta_1 VCSH_{it} + \beta_2 TAX_{it} + \beta_3 ROA_{it} + \beta_4 PR_{it} + \omega_{it}$$

$$\omega_{it} = \epsilon_{it} + \upsilon_i$$

Including: ϵ_{it} is the error with a normal distribution varying with i and t

υ_i is a representative of the individual unobserved and constant time-varying effects of each firm i

α_0 : Constant

α_j : Coefficients of the regression model ($j = 1, 2, \dots, 9$)

4. Methods of data collection and study samples

Research data collected from published financial statements of 85 companies (45 real estate and 40 construction ones) listed on the stock market (HOSE and HNX) for the period 2015-2019 at the website: https://www.cophieu68.vn/category_ib2.php, then excluded businesses that have been dissolved as of December 31, 2019. The last sample of the remaining 76 enterprises (41 real estate and 35 construction ones) in 5 years (2015-2019), corresponding to 380 observations, sample structure is shown in the following Table 1:

Table 1: The studied sample structure by SE and industry

Industry	Listed on HNX	Listed on HOSE	Total	
	Firm Quaity	Firm Quaity	Firm Quaity	Observations (5 years)
Real Estate	12	29	41	205
Construction	14	21	35	175
Total	26	50	76	380

(Source: Authors group synthesized)

Collected data is aggregated and calculated into Excel file for research purposes. Data will be computed and synthesized by the FEM “(fixed effects regression model) and REM (the random effects regression model) on Eviews 8.0 software. Determining the suitability of the model for each industry is verified through the Hausman test; Variable error variance is tested by the White model; Multicollinearity is tested by linear regression model; Model defects were tested using the GLS model.

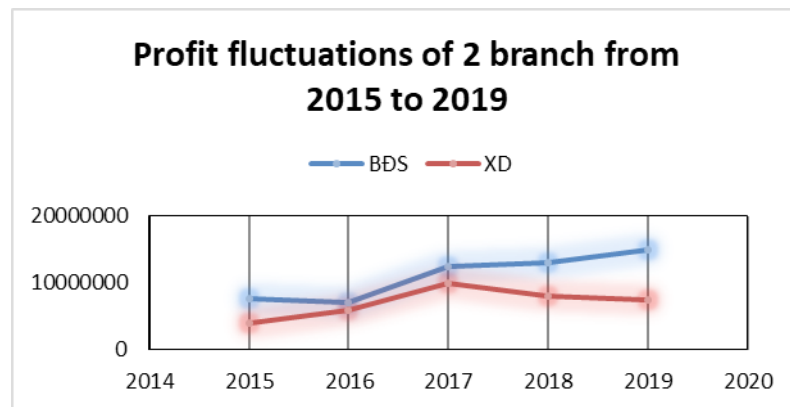
5. Experimental results

5.1. An overview of the volatility of the real estate and construction sectors in the period 2015-2019

Real estate and construction are two important and essential industries in each country's economy. The development of these two industries will have a great impact on the development of other industries and especially in Vietnam in the period 2015-2019.

To analyze the fluctuations of the two industries, the authors used the total average value of PBT, PR, ROA, equity, TAX at 76 companies in the construction and real estate industries. The results in Figure 1 show that PBT of the two industries (real estate and construction) have different fluctuations from 2015 to 2019. The real estate industry has a stronger growth (from VND 8 billion to VND 15 billion) than the construction industry (4 billion dong in 2014; 8 billion dong in 2018). In the period 2016 - 2017, the real estate industry has decreased fluctuations, the value decreased to nearly 6 billion VND (-2 billion compared to 2015), PBT in the years 2017-2019 increased steadily. In contrast, the PBT of the construction industry from 2017-2019 tended to decrease significantly continuously.

Figure 1: Fluctuations of PBT in the real estate and construction industries from 2015-2019.



Source: Authors group synthesized

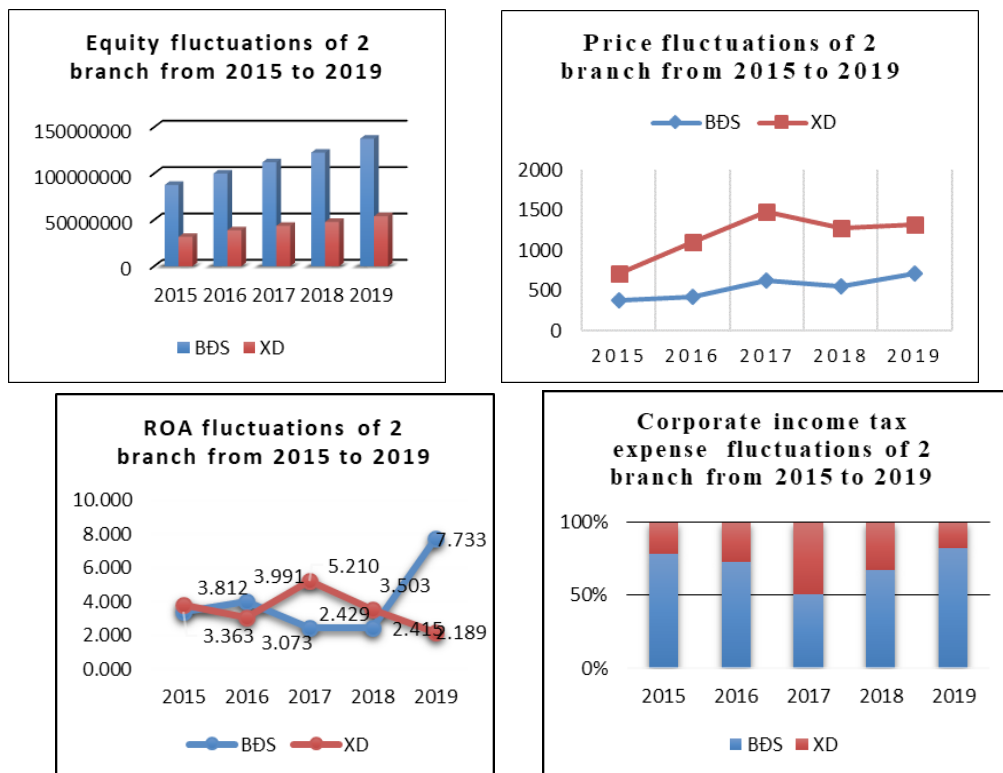
The results in Chart 2 show that stock price volatility (PR) of the construction industry is more stable than the real estate industry. From 2015 - 2019, the share price growth of the construction industry increased from 200 to 600 VND; In the period of 2017-2018, the stock price of the industry decreased slightly, but increased again since 2018. The real estate industry had a strong growth, the year 2015-2018 was the period of the strongest growth with the average share price of the industry growing from 600 to nearly 1,600 VND; then stock prices experienced a decline from 2017 to 2019.

Besides, ROA also has different fluctuations between the two industries. ROA max value = 0.008 in the real estate industry, this is consistent with the current market development trend because there are many businesses involved in the real estate sector. ROA of the construction industry decreased slightly from 2015 to 2019, from 0.004 to 0.002; In the period 2016-2017, ROA again increased significantly when it peaked at 0.005.

Equity of the two industries grew, in which the real estate sector (the capital increased from 80 billion VND to nearly 140 billion VND) grew stronger than the construction industry (the value in 2015 was about 20 billion VND, in 2019 the value of threshold more than 40 billion).

Along with the growth of equity and EBT, TAX of the two industries also saw growth. However, the corporate income tax expense of the real estate industry is higher than that of the construction industry; In the period 2016-2017, corporate income tax expenses varied the most between the two industries, the proportion of tax expenses of the construction industry was higher than the real estate industry, but other years were lower. This is consistent with the volatility of EBT when in 2017 the construction industry has a stronger growth than the real estate industry.

Chart 02: Fluctuation of Equity, PR, ROA, TAX in the real estate and construction industries in the period 2015-2019



Source: Authors group synthesized

5.2. Regression Model REM

Before going into the model results, the team had tested the suitability of the model with two hypotheses:

H_0 :	“ $a_1=a_2=a_3=...=a_n=0$ ”
H_1 :	“At least one of the coefficients non-zero a_i ”

Results in Table 2 show that Prob value (F statistic) <0.05. Thus, we reject the hypothesis H_0 : “ $a_1 = a_2 = ... = a_n = 0$ ” and accept hypothesis H_1 : “At least one of the coefficients a_i is non-zero” ie the model can predict the value of The variable EBT by independent variables (Equity, PR, ROA, TAX) or PBT and the variables Equity, PR, ROA, TAX have a relationship with each other.

Table 2: Summary of REM model results in the real estate and construction industries

Item	Real Estate		Construction	
	Beta	Prob.	Beta	Prob.
C	-176939.5	0.0031	-133324.3	0.0000
PR	20637.40	0.0000	5411.243	0.0000
TAX	61101.40	0.2167	425885.8	0.0000
ROA	-0.991306	0.0000	-0.315530	0.3775
Equity	0.076726	0.0000	0.156968	0.0000
Adjust R-Squared	0.452104		0.697591	
Prob.(F-statistic)	0.000000		0.000000	

(Source: Authors group synthesized by Appendix 1,2)

Comments on correlation relationship::

Equity variable was statistically significant in both real estate and construction (prob value <0.05) with Beta of 0.076726 and 0.156968, respectively. Thus, the variable of equity has a positive relationship with EBT in both the real estate and construction industries.

The variable ROA was not statistically significant for the XD industry (prob value = 0.3775 > 0.05 and Beta = -0.315530) but it was statistically significant for the real estate industry (Prob. = 0.00000 <0.05 and Beta = - 0.991306). Thus, the variable ROA has an inverse relationship with EBT for the real estate industry and no relationship with EBT for the construction industry.

The variable TAX has Beta value in the two industries respectively 61101.40 and 425885.8 are > 0. However, for the real estate industry, the value of prob = 0.2167 > 0.05, so the two variables TAX and PBT are not statistically significant, no relationship; The construction industry prob value = 0.00000 <0.05, so the relationship between the two variables TAX and PBT has a positive relationship and statistically significant.

The variable PR has a prob value <0.05 in both the real estate and construction industries. On the other hand, the Beta value of the two industries is greater than zero, 20637.40 and 5411.243 respectively. This means that an increase in stock price increases PBT and the relationship between the two variables is statistically significant for both industries.

With Adjust R squared values of the real estate and construction sectors are 0.452 and 0.698, respectively. This shows that the impact of the variable (Equity, PR, ROA, TAX) on the variable EBT between the two industries is different, the real estate industry (45.2%) has a lower impact than the construction industry (69.8%).

5.3. Regression Model FEM

Before going into the model results, the team had tested the suitability of the model with two hypotheses:

$H_0:$	“ $a_1=a_2=a_3=...=a_n=0$ ”
$H_1:$	“At least one of the coefficients non-zero a_i ”

Results in Table 3 show that Prob value (F statistic) <0.05. Thus, we reject the hypothesis H_0 : “ $a_1 = a_2 = ... = a_n = 0$ ” and accept hypothesis H_1 : “At least one of the coefficients a_i is non-zero” ie the model can predict the value of The variable EBT by independent variables (Equity, PR, ROA, TAX) or PBT and the variables Equity, PR, ROA, TAX have a relationship with each other.

Table 3: Table of the regression model FEM in the both industries

Items	Real Estate		Construction	
	Beta	Prob.	Beta	Prob.
C	-261270.9	0.0000	-202892.3	0.0000
PR	17888.75	0.0000	6563.122	0.0000
TAX	54280.78	0.2748	388103.4	0.0001
ROA	-0.863590	0.0000	-0.034003	0.9346
Equity	0.119368	0.0000	0.195579	0.0000
Adjust R squared	0.784137		0.911216	
Prob.	0.000000		0.000000	

(Source: Authors group synthesized by Appendix 5,6)

Similar to the results in REM model, the variable of equity was statistically significant for both industries. Beta value is 0.119368 and 0.195579 respectively, so equity has a positive relationship with EBT in real estate and construction.

The variable ROA of the real estate industry has the prob value <0.05 , but the construction industry has the one > 0.05 . Thus, the variable ROA is statistically significant for the real estate industry and not for the construction industry. Beta value = -0.863590 of the real estate industry shows that the variable ROA has an inverse relationship with the variable EBT in the real estate industry and has no relationship with the PBT of the construction industry.

The variable TAX has a value of Beta > 0 in both real estate and construction industries. However, there is a significant difference in the prob value; The prob value of real estate industry is $0.2748 > 0.05$, so the variable TAX has no statistical meaning or has no relationship with the variable EBT. On the other hand, in the construction industry, the prob is $0.000001 < 0.05$, so the variable TAX has a positive relationship with the variable EBT.

The variable PR has prob value <0.05 in both real estate and construction sectors with Beta value of 17888.75 and 6563.122, respectively. This shows that PR has a relationship and a positive impact on EBT of both industries, in which the impact on the real estate industry is stronger than the construction industry.

Adjust R squared values in both real estate and construction are 0.784 and 0.911, respectively. From here it can be concluded that variables (equity, PR, ROA, TAX) have an impact on EBT in both real estate and construction, and the impact on the real estate industry (78.4%) is low in the construction industry (91.1%).

Through the analysis results of the above correlation, it shows the similarity between the two models FEM and REM. However, in the two models, the impact results between the dependent variables on the independent variable are different; Adjust R squared value in FEM model is larger than REM model. The authors conduct a Hausman test to find the right model for each industry.

5.4. Hausman Verification

Hausman verification is used to test the suitability between two models FEM and REM with two hypotheses given as:

H_0 :	“FEM is more suitable than REM”
H_1 :	“REM is more suitable than FEM”

The test results show that the Prob value of the real estate industry is 0.0025 and the construction industry is 0.0001 (Appendix 04, 08). Therefore, accept hypothesis H_0 : “FEM model is more suitable than the REM one in both real estate and construction industries. The regression equation according to the FEM model is:

(1) The real estate:

$$EBT = -261270.9 + 17888.75PR_{it} - 0.863590ROA_{it} + 0.119368Equity_{it} + eit$$

(2) The construction:

$$EBT = -202892.3 + 6563.122PR_{it} + 388103.4TAX_{it} + 0.195579Equity_{it} + eit$$

5.5. Inspect defects in the model

Table 4: The results of the defect inspection in the real estate and construction industries.

Inspection	Real Estate (Prob.)	Construction (Prob.)
Variable error variance	Prob. F(14,187)=0.0000	Prob. F(2,155)=0.0000
Self-correlation	Prob. F(2,195)=0.0000	Prob. F(14,147)=0.0000

(Source: Authors group synthesized on Eviews 8.0)

According to Table 4, The results of the analysis of the autocorrelation phenomenon and the variance of variance changed showed prob values <0.05 , so the study data existed with the autocorrelation phenomenon and the variance of variance changed.

Table 5: Results of the multicollinear defect test

Variable	Real Estate (VIF)	Construction (VIF)
PR	1.120891	2.805773
TAX	1.363689	2.393799
ROA	1.032527	1.101256
EQUITY	1.258397	1.300525

(Source: Authors group synthesized on Eviews 8.0)

The analysis results in Table 5 show that, in the data, the independent variable indexes have VIF value <10 , it can be concluded that the data does not exist multicollinearity phenomenon (According to Hoang Trong and Chu Nguyen Mong Ngoc (2013) when the index $VIF > 10$ will appear multicollinearity phenomenon).

Thus, the FEM model has two defects: cointegration and variable variance. In order to overcome the autocorrelation phenomenon, the variance of variance changes and effective estimation have many different methods. However, with the collected data, the authors used the GLS model to overcome the defects of the FEM model.

5.6. The result of the regression model GLS

Table 6: The results of the regression model GLS in the both industries

Independent variables	Real Estate		Construction	
	Beta	Prob.	Beta	Prob.
C	-147882.2	0.0000	-110180.6	0.0002
PR	7394.576	0.0000	3133.480	0.0000
ROA	67226.93	0.0002	378332.3	0.0000
TAX	0.092542	0.6543	1.007903	0.0002
EQUITY	0.112767	0.0000	0.156232	0.0000
Adjust R Squared	0.906237		0.929745	
Prob. (F statistic)	0.000000		0.000000	

(Source: Authors group synthesized by Apendix 3, 7)

Based on Table 6, Prob. (F statistic) <0.05 , infers the model is significant, can be used to predict the dependent variable by independent variables.

The results of the model regression for the real estate industry for the variable TAX (Prob = 0.65 > 0.05) are not statistically significant. This is consistent with the results of the FEM model. On the other hand, in the construction industry, the variable ROA is statistically significant in the GLS model; however, in the FEM model, the ROA is not significant to the variable EBT. This can be explained, there are still defects under the FEM model that lead to bias estimation and the model does not match. However, the defects of the GLS model have been overcome, thereby giving an unbiased estimate and increasing the model's reliability. The authors built the final regression equation:

(1) The real estate industry

$$LNTT = -147882.2 + 7394.576PR_{it} + 67226.93ROA_{it} + 0.112767EQUITY_{it} + eit$$

(2) The construction industry

$$LNTT = -110180.6 + 3133.480PR_{it} + 378332.3ROA_{it} + 1.007903TAX_{it} + 0.156232EQUITY_{it} + eit$$

6. Discussion on the research results and recommendations

6.1. Discussion on the research results

From the empirical evidence in part 6 of the article has given us evidence to conclude the research hypotheses as follows:

Accept hypothesis 1: The size of the businesses in the real estate and construction industries listed on the Vietnamese stock market has a positive relationship with EBT, the impact of size in the construction industry is greater than in the real estate industry. Thus, the larger the size of the enterprise, the more the profit-adjusting ability is. This result is consistent with the results of many authors (Alves, 2012; Fakhfakh and Nasfi, 2012; Charfeddine, Riahi and Omri, 2013); Nguyen Ha Linh (2017). Companies listed on the Vietnamese stock exchange themselves are large-scale enterprises (The requirement to be listed on the Vietnam stock market is that companies must be joint stock ones with the book contributed charter capital of at least 30 billion VND or more at the registration under the Securities Law), but for the purpose of raising capital, issuing shares, businesses still tend to adjust to increase profit.

Reject hypothesis 2: The construction of tests and regression equations showed that CIT expense has a positive impact on EBT in the construction industry, while not affecting EBT of the real estate industry. The hypothesis of political costs in the PAT theory (Watts and Zimmerman, 1986) is also the basis to explain the relationship between the CIT cost and the adjusted profit, the CIT cost is one of the costs. Politics - according to this hypothesis, large companies are often the leading companies in the market to be affected by the impact of political factors. Numerous studies have shown that firm size and political costs are positively related, that is, the larger the firm is the higher the political cost is and vice versa (Watts, 1997; Tehrani et al., 2009). And so, businesses are willing to accept high corporate income tax costs to get high EBT in order to provide better information about the financial situation at the company.

By analyzing the data in Table 2, the construction industry has decreased profits since 2017, but the relationship in the regression equation shows that TAX affects positively on profit, meaning that even though CIT expense increases, enterprises still manage to boost profit in order to beautify

the financial statements. Moreover, the construction industry in Vietnam is one of the industries supported with great tax incentives; however, the real estate industry is included in the service group, there are no special tax incentives. Therefore, businesses in the real estate industry will not adjust their profit that leads to an increase in corporate income tax expenses.

Reject hypothesis 3: ROA of companies in the real estate and construction industries listed on the Vietnamese stock market has a positive relationship with the EBT; impact level of ROA variable in real estate industry is greater than that of construction industry. Despite the good financial performance, enterprises tend to adjust the profits to be able to maintain the image and demonstrate the firm value of the enterprise. Research results of the authors group between ROA and EBT are positively correlated, contrary to the previous research of Rahman and Ali (2006), Akram et al (2015); Similar to the study of Lee, Li and Yue (2006).

As the size of the company becomes larger, the evaluation of the efficiency of using assets is essential, especially assets of the industry that do not have a distinct form as the construction industry. It is necessary for investors to evaluate financial performance including ROA before making the final decision. Research results of companies in the real estate and construction industries listed on the Vietnamese stock market show that, even though companies have good financial performance (high ROA), businesses still tend to increase profits to increase investors' confidence in effective business activities in enterprises.

Reject hypothesis 4: Stock prices of real estate and construction companies listed on the Vietnamese stock market have a positive relationship with profits. The level of impact on the earnings management behavior of the PR variable in the real estate industry is greater than in the construction industry. This result is contrary to the research of many authors such as: Cheng and Warfield (2005) that provide evidence of profit management for stock prices boost. In order to receive positive responses from the market, the quality accreditation will be performed to match market expectations. Chen et al (2006), Chen, Cheng and Wang (2010), Charfeddine, Riahi and Omri (2013) proved the hypothesis that inefficient firms are more likely to conduct earnings adjustments. Besides, the research results of Fathi (2013) show that companies with high performance tend to make less adjustments to profits because they want to maintain credibility and show trustworthiness.

On the other hand, the above results are consistent with the research of Lee, Li & Yue (2006) that shows that companies with high performance still tend to keep the stock prices because it is the sign of market reaction to reported profit and this will help administrators maintain their bonus plan. Dyreng, Hanlon & Maydew (2011) believe that companies that operate efficiently but have branches and subsidiaries in low-income tax countries (tax heaven) are more likely to adjust profits than others.

Due to the characteristics and nature of real estate and construction business products with great value, slow capital turnover, the construction and real estate industries always have a large demand for cash flow to serve projects and business activities. Bank loans take a long time and interest costs are quite high, real estate and construction companies will prioritize using their own capital to minimize borrowing costs. One of the ways that real estate and construction enterprises can mobilize capital is to issue shares; however, stocks must be fruitable prospect in the future for funds attraction. Therefore, adjusting the profit on the financial statements is the indispensable behavior to meet the expectations of investors.

The fact has proven that when stock prices grow well, businesses will tend to issue more shares to increase capital when they have potential. From the investor's perspective, when the stock price increases to a certain level, many investors will start to gradually sell their stocks in order to gain profits and avoid risks. This will increase the market supply and the supply-demand balance will return to the equilibrium state before the enterprise issues new shares. Therefore, maintaining stock prices is extremely important for businesses in need of capital, especially businesses in the real estate and construction sectors. Therefore, businesses in these two industries will tend to adjust their profits to maintain the potential of stocks and attract more capital.

6.2. Recommendations

Profit adjustment behavior will greatly affect the quality of financial statements of businesses in general and real estate and construction companies listed on the stock market in particular because it creates non-existent risks, when related parties use inaccurate accounting information to make an economic decision. From those above research results, the authors have a number of recommendations as follows:

** Recommendations for the real estate and construction firms*

Profit adjustment behavior will bring benefits to businesses in the short term, but for terms of long-term goals, regular earnings adjustments will dilute the real value of the stock, leading to many potential risks in the future. So, instead of adjusting the profit, businesses should make business plans to suit the reality or to attract capital such as being able to take advantage of the bond issuance channel; In addition, to ensure a stable cash flow in enterprises, it is necessary to urge debt collection.

** Recommendations for investors*

Profit adjustment behavior not only brings risks to businesses but also great risks to investors. Especially in the current market economy with the increasing need for capital, profit adjustment will be more common. Therefore, investors should be very cautious in finding out information, especially the indicators of profit on financial statements to make appropriate investment decisions.

** Recommendations for the financial ministry.*

Building, supplementing and perfecting Vietnamese accounting standards in the direction of unification, especially in accounting estimates for preparing financial statements, thereby, reducing the profit adjustment behavior over outside issued financial statements. In addition, there should be an audit quality monitoring mechanism to ensure the appropriateness and accuracy of material information on audited financial statements, especially post-audit profit information.

** Recommendations for the Stock Exchange Authority*

Profit adjustment is the risk of damaging the liquidity of Vietnam's stock market. SSC should have measures to limit and detect profit-regulating behaviors, especially to apply verification model to fraud detection and train for staff in quantitative analysis skill in detecting fraud thereby advising the system of departments to promptly handle. For profit adjustment, there should be a form of warning, deterrent, delisting to set an example for other companies.

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APENDIX

Appendix 01: The result of the regression model REM in the construction industry

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-133324.3	30417.84	-4.383096	0.0000
PRICE	5411.243	819.3378	6.604410	0.0000
ROA	425885.8	92419.62	4.608175	0.0000
TAX	-0.315530	0.356513	-0.885046	0.3775
EQUITY	0.156968	0.010801	14.53246	0.0000
Effects Specification				
			S.D.	Rho
Cross-section random			135483.5	0.5214
Idiosyncratic random			129792.0	0.4786
Weighted Statistics				
R-squared	0.705105	Mean dependent var		84750.57
Adjusted R-squared	0.697591	S.D. dependent var		250197.0
S.E. of regression	137773.6	Sum squared resid		2.98E+12
F-statistic	93.84807	Durbin-Watson stat		1.618292
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.784382	Mean dependent var		211594.1
Sum squared resid	6.59E+12	Durbin-Watson stat		0.868572

(Source: Authors group synthesized on Eviews 8.0)

Appendix 02: The result of the regression model FEM in the construction industry

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-202892.3	28439.03	-7.134289	0.0000
PRICE	6563.122	905.6074	7.247205	0.0000
ROA	388103.4	98227.81	3.951054	0.0001
TAX	-0.034003	0.413417	-0.082250	0.9346
EQUITY	0.195579	0.017212	11.36314	0.0000

Effects Specification			
Cross-section fixed (dummy variables)			
R-squared	0.932171	Mean dependent var	211594.1
Adjusted R-squared	0.911216	S.D. dependent var	435591.7
S.E. of regression	129792.0	Akaike info criterion	26.59132
Sum squared resid	2.07E+12	Schwarz criterion	27.33463
Log likelihood	-2114.897	Hannan-Quinn criter.	26.89312
F-statistic	44.48376	Durbin-Watson stat	2.124002
Prob(F-statistic)	0.000000		

(Source: Authors group synthesized on Eviews 8.0)

Appendix 03: The result of the regression model GLS in the construction industry

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-110180.6	28177.92	-3.910173	0.0002
PRICE	3133.480	472.4420	6.632519	0.0000
ROA	378332.3	27707.73	13.65440	0.0000
TAX	1.007903	0.261672	3.851783	0.0002
EQUITY	0.156232	0.021382	7.306661	0.0000

Effects Specification			
Cross-section fixed (dummy variables)			
Weighted Statistics			
R-squared	0.946327	Mean dependent var	280011.0
Adjusted R-squared	0.929745	S.D. dependent var	351818.1
S.E. of regression	108137.6	Sum squared resid	1.44E+12
F-statistic	57.06968	Durbin-Watson stat	2.019447
Prob(F-statistic)	0.000000		
Unweighted Statistics			
R-squared	0.920497	Mean dependent var	211594.1
Sum squared resid	2.43E+12	Durbin-Watson stat	1.782196

(Source: Authors group synthesized on Eviews 8.0)

Appendix 04: Hausman Varification in the construction industry

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	
Cross-section random	24.279371	4	0.0001	
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
PRICE	6563.122448	5411.243311	148810.199261	0.0028
ROA	388103.386295	425885.797096	1107317780.405055	0.2562
TAX	-0.034003	-0.315530	0.043812	0.1786
EQUITY	0.195579	0.156968	0.000180	0.0040

(Source: Authors group synthesized on Eviews 8.0)

Appendix 05: The result of the regression model REM in the real estate industry

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-176939.5	59020.54	-2.997930	0.0031
PRICE	20637.40	2172.450	9.499597	0.0000
ROA	61101.40	49297.75	1.239436	0.2167
TAX	-0.991306	0.137375	-7.216056	0.0000
EQUITY	0.076726	0.011352	6.758546	0.0000

Effects Specification				
			S.D.	Rho
Cross-section random			268878.1	0.5464
Idiosyncratic random			244965.4	0.4536

Weighted Statistics				
R-squared	0.463008	Mean dependent var		102933.3
Adjusted R-squared	0.452104	S.D. dependent var		340822.0
S.E. of regression	252382.2	Sum squared resid		1.25E+13
F-statistic	42.46453	Durbin-Watson stat		1.695795
Prob(F-statistic)	0.000000			

Unweighted Statistics				
R-squared	0.464308	Mean dependent var		272482.6
Sum squared resid	2.99E+13	Durbin-Watson stat		0.804835

(Source: Authors group synthesized on Eviews 8.0)

Appendix 06: The result of regression model FEM in the real estate industry

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-261270.9	61645.78	-4.238260	0.0000
PRICE	17888.75	2787.964	6.416421	0.0000
ROA	54280.78	49525.73	1.096012	0.2748
TAX	-0.863590	0.141306	-6.111486	0.0000
EQUITY	0.119368	0.023934	4.987455	0.0000

Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.831391	Mean dependent var		272482.6
Adjusted R-squared	0.784137	S.D. dependent var		527248.9
S.E. of regression	244965.4	Akaike info criterion		27.84914
Sum squared resid	9.42E+12	Schwarz criterion		28.58613
Log likelihood	-2767.764	Hannan-Quinn criter.		28.14733
F-statistic	17.59424	Durbin-Watson stat		2.446593
Prob(F-statistic)	0.000000			

(Source: Authors group synthesized on Eviews 8.0)

Appendix 07: The result of the regression model GLS in the real estate industry

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-147882.2	33220.21	-4.451572	0.0000
PRICE	7394.576	1451.096	5.095855	0.0000
ROA	67226.93	17426.08	3.857834	0.0002
TAX	0.092542	0.206291	0.448601	0.6543
EQUITY	0.112767	0.011436	9.860551	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
Weighted Statistics				
R-squared	0.926762	Mean dependent var		435881.2
Adjusted R-squared	0.906237	S.D. dependent var		631137.2
S.E. of regression	206266.0	Sum squared resid		6.68E+12
F-statistic	45.15249	Durbin-Watson stat		2.068085
Prob(F-statistic)	0.000000			
Unweighted Statistics				
R-squared	0.772556	Mean dependent var		272482.6
Sum squared resid	1.27E+13	Durbin-Watson stat		2.651298

(Source: Authors group synthesized on Eviews 8.0)

Appendix 08: The result of Hausman accreditation

Test cross-section random effects				
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.	
Cross-section random	16.443821	4	0.0025	
Cross-section random effects test comparisons:				
Variable	Fixed	Random	Var(Diff.)	Prob.
PRICE	17888.753582	20637.402060	3053204.903540	0.1157
ROA	54280.779823	61101.398193	22529785.609099	0.1507
TAX	-0.863590	-0.991306	0.001095	0.0001
EQUITY	0.119368	0.076726	0.000444	0.0430

(Source: Authors group synthesized on Eviews 8.0)

INTERNATIONAL EXPERIENCES ON LOCAL BUDGET EXPENDITURE EFFICIENCY

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Abstract: *The effective use of the local budget in localities is a matter of great concern. The actual use of the local budget in recent years has achieved many impressive results, and still has many problems that need to be adjusted to suit the reality. The problem of improving the efficiency of local budget management is always an issue that needs to be considered. Article researching actual budget spending in some countries around the world and incorporating some experiences in budget management books in Vietnam.*

Key words: *effective, budget, Experience.*

Introduction to local budget spending efficiency

Budgeting relate with successful administration. Ideas of budgeting and using it proficiency are regularly exceptionally within the writing, however is it troublesome to discover the definition of budget effectiveness as one concept that ought to be significantly accentuated, particularly within the open back division, undertakings ought to conduct investigate in this region as well. The conception “budget efficiency” uses with the materials on The Service of Fund site, but within the setting of the efficiency of budget administration or investing. Within the writing, the concepts of effectiveness and budgeting are display as total isolated thoughts. Primarily within the setting of characterizing budgeting as an effective strategy, that means the successful designating of accessible assets. The article uses research methods of collecting data, documents and processing methods, data analysis, documents. From using local budgets in some countries around the world to draw some experiences for using budgets in Vietnam.

Basis for discussion of efficiency in using local budgets

When endeavoring to characterize the idea of local budget efficiently, no doubt that the thought of effectiveness itself ought to be mentioned firstly, however it is not so natural that we break down the perceptions led in the territory just as the vagueness of this thought. The contemplations on the significance of presenting the idea of spending productivity into the general use would be examined in any case, assuming that the proficiency in calculated setting would be synonymous with taking right activities in the correct manner.

When breaking down and keeping track of real currencies, newspapers often report that the spending limit on a particular speculation have been surpassed. When it comes to models from the open account segment, such as the disregarded spending plan for the structured arenas for Euro 2012, overcoming the financial limit for the development of an aircraft terminal in Berlin, etc. In

this unique circumstance, we abandon defining a repeat of the misinterpreted plan of spending, especially given that media normally stay quiet where all the operations performed within financial limits. When building a project in a shorter time period, more capital is needed. It is not fair when we only compare capital.

In the previous reflections mentioned there are perspectives that, in the creators' supposition, should manufacture the significance of the idea of spending proficiency, with no extraordinary sign on the significance of any of them:

- 1) Execution of arranged errands (viability),
- 2) Rightness of assessed consumptions (financial matters),
- 3) Consumption impact (proficiency).

Expounding the previously mentioned viewpoints from the perspective of efficiency measures should prompt deciding the significance of the spending proficiency, the consideration should be paid to different angles too, standard particularly to what we spend accessible assets on, how we utilize the assets that are constantly constrained. Accordingly, it is important to complement the considerations with the pertinence of the caused use, the investigation of the impacts coming about because of spending the accessible assets, and to make it basic, to give an answer whether we do things well. It appears that thoughts on the idea of spending proficiency surpass planning itself. In any case, the compelling technique supporting administration, that would be disrespected from the impacts coming about because of spending the planned assets. Such a noteworthy expansion of the idea of spending proficiency, which can't be restricted to the assessment of the procedure itself, is supported by the points of interest of the open accounts, where planning is a commitment, it shouldn't be used as the device for introducing the consumption, however for its enhancement.

Experiences on increasing the efficiency of some locals budget spending

For Japan, the Government spends budget effectively, in which the major success is due to the flexible budgeting mechanism to regulate resources between fair budget levels, clearly delineating revenues and tasks are very specific for each budgets level. The Japanese state apparatus divide to: central, provincial and city, town and commune levels. Provincial, city, town and commune levels are at the local level direction.

The effect of budget spending has focused on the exploitation of revenue sources and stimulated the beneficiary budget to save, appropriately and ensure the functions and tasks of the application.

Japan has moved from the approval system to the consulting system; then the local government can make a loan without the approval of the local council direction.

Budget decentralization also contributes to improving the efficiency of state budget spending in China. The Chinese government attaches great importance to the reform of the fiscal system, especially the management of state budget revenues and expenditures after shifting from a centrally planned economy to a market economy. From 1980 to 1984, the Chinese government began decentralizing revenue sources for the locality. From 1985 to 1993 was the period of implementing the budget allocation mechanism, allocating revenue among budget levels, strengthening local autonomy in managing the state budget. By 1994, the Chinese government carried out the reform

of the tax regime with the largest scale in Chinese history. This reform creates the first framework for dividing power within the central and local budget management system.

In the process of implementing institutional decentralized institutional reforms, the Chinese government focused on clearly defining the right to budget and the right to build infrastructure between the central and local levels, while clarifying similar responsibilities and interests and correspondence between levels.

In order to make up for the local budget deficit, local governments have to borrow from state-owned commercial banks or the central budget. Chinese's law does not allow local governments to issue bonds to raise capital. However, the issue of delegating the right to decide local loans should take into consideration the reverse of the problem. Some localities use "legal risk" bond issue. Establish a special economic unit that related close with local government and allow this unit to issue bonds business career. The proceeds from the bond issue is used for local government borrowers

According to the assessment of the economic experts, this approach will accumulate a lot of risk, create the mechanism lacks transparency and accountability in the management in debt.

Through the experience of Japan and China, budget decentralization is an indispensable need to improve the efficiency of state budget management in general, in which effective local budget spending. Budget decentralization should determine specific levels and powers. The most important is transparent information and enhanced monitoring to prevent negative events.

Experience in managing state budget expenditure

In Singapore, the Government has tightly controlled spending within the limits of revenue, creating a moderate budget surplus in long time.

From 1989-1996: making budget revenue and expenditure plans according to the votes of representative voters. This method has created more flexibility in reallocating resources. However, many constraints still exist, such: cannot change monetary funds between years, lack of output and outcome information, as well as too much persistence of controlling financial main decisions. From 1989 to now: making plan to spend budget according to output results. With the experience accumulated through state budget management, Singapore has successfully implemented the method of budget expenditure planning according to the outputs. Program tools can: Identify and measure details and report outputs (public goods) created by state agencies; Describing the link between the output of state agencies and the desired results achieved according to the development strategy of the House country; Public key output reports are based on program performance indicators pepper.

In the Federal Republic of Germany: in 2000, Germany has implemented a pilot project that tests the reliability and budget efficiency based on outputs in the role of engine operator, output orientation. Budget Committee of the National Federal Assembly conducts this project. Base Construction building design planning according to the budget. Output bases on the Federal Budget Law, determined by both aspects: quality and number amount.

Related agencies include Press and Information Department, Public Management College, Bureau of Statistics, Road Traffic Bureau, Railway Bureau, Customs Department and Consumption Tax of Hamburg State.

A state organization in Hessen conducts with a results-based allocation mechanism. Details include Decentralizing and associating professional responsibilities with financial responsibility, orientation according to the objectives and activities of administrative agencies, reforming the budget and accounting regime... In the hierarchy of responsibilities, responsibility and authority is available in any application tool within its financial framework and predetermined result volume.

The implementing agency will decide on the use of funds in accordance with the time and nature in principle not to exceed the allowed framework. Three focal points in the plan link to output results including work plans, predetermined results and financial plans.

Experiences in increasing the efficiency of budget spending through legal supervision the law

In the United States, the economy is a free, dynamic market system. The market decides the mobilization of financial resources in the economy. Thus, the US government attaches great importance to the management of state budget revenues and expenditures and balancing budget revenues and expenditures to regulate the economic cycle and boosting the private sector to increase savings and investment in private development.

After the economic crisis (1929-1933) to late 1960s, the US economy grows rapidly, the issue of control revenues and expenditures in Keynes theory was the US government use thoroughly.

During the 1970s and early 1980s, the US economy fell into recession, increasing inflation. In order to restore the economy at this time, the US government continued financial reforms deeply with basic content and tax reform trends tariff reductions, particularly income tax. Besides reforming the tax system, the US government has conducted a reform of expenditure thorough way.

American economy restores in the late 1980s and early 1990s restores, but the budget deficit still increase (1980: 1.3%, 1990: 2.5% and 1995: 2.3 %). Congress and the US government continue to enact legislation for the purpose of control revenues and expenditures more rigorously. Act provisions, which increase revenue, the new increased expenditure. Fiscal policy of the United States has focused on cutting spending unnecessary to proceed to eliminate the budget deficit towards a budget surplus in order to ease the pressure of debt, reduce interest rates, giving background economic growth in the long-term stability.

Lessons learnt for Vietnam budget management

From the experiences of other countries in the world, some lessons learned can apply in accordance with the context of Vietnam Male.

First, it is necessary to define the role and structure of the state to redefine the role of the state in the economy; In the program of local budget spending, public projects need to be strengthened to reduce unemployment and improve people's lives;

Secondly, strengthen decentralization to local authorities, increase financial autonomy for local governments, enhance the openness and transparency of local budget, increase right and blame mission of the Chief who uses cashbook.

Thirdly, state budget management according to outputs, assigning people to be responsible for main expenditure tasks, spending programs or activities; autonomous use of the budget with a wider range. The allocation base on goals, link fruit head out and sign fruit active dynamic of the application history use cashbook;

Allocation base on goals, link input requirement and expected results, using cashbook on automated applications.

Fourth, open and transparent about local budget spending;

Fifthly, strengthen inspection and examination of local budget spending programs to avoid loss and waste; Participation of people in the management and use of spending should be strengthened Local government.

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FINANCIAL MANAGEMENT IN MULTINATIONAL COMPANIES – IMPLICATIONS FOR VIETNAMESE ENTERPRISES

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Abstract: *Today, the world economy is increasingly internationalized and with it the continuous development of the model of multinational companies (Multinational Corporation) - companies that conduct some forms of international business. When it comes to multinational companies and their rapid growth, people often talk about international diversity and change. The administrator of the multinational is the one who must combine diversity and anticipate those changes to create the highest overall value. Therefore, governance in multinational companies is the decisive factor for its success. In which, financial management is considered the most important because the international financial system contains its complexity and unpredictable fluctuations. The article refers to financial management in multinational companies to learn about issues related to financial management of multinational companies, to study the experiences of some typical multinational companies, to analyze of some specific cases and to propose applications in Vietnamese enterprises.*

Keywords: *multinational companies, financial management multinational companies*

1. Financial management in multinational company

1.1. Multinational company

A multinational company, often abbreviated as MNC (Multinational Corporation) is a company engaged in the production and sale of products or services in many countries. It initially consisted of a parent company located in the country and had at least five or six overseas subsidiaries, particularly with a high degree of strategic and mutually supportive cooperation among its subsidiaries. The large multinationals have budgets that exceed the budgets of many countries. These companies can have a great influence on international relationships and play an important role in the globalization process. Some multinational companies have up to 100 overseas subsidiaries around the world. The United Nations predicts that there are at least 35,000 subsidiaries in the world that could be considered multinational.

Multinational companies can be classified into three major groups according to the structure of production vehicles:

- “Horizontal” multinational companies that produce the same or similar products in different countries (eg McDonalds).

- A “vertical” multinational has production facilities in certain countries that produce product as input to its production in some other country (eg Adidas).

- “Multidimensional” multinationals have production facilities in different countries that cooperate both horizontally and vertically (eg Microsoft)

1.2. Financial management in multinational company

Traditionally, financial governance has two basic functions: financing and investment. The first function called funding decisions involves creating funds from internal or external sources for the company at the lowest possible long-term cost. Investment decision is considered to be the distribution of funds over time, in a manner that maximizes shareholder wealth. However, many issues and many multinational financial governance practices cannot be so clearly categorized.

The firm’s internal capital flows, such as loan payments, often have to be secured by the MNC itself to access and use the borrowed funds, at least in theory. Other cash flows such as dividend payments can be made to reduce foreign exchange risk or reduce taxes. Capital structure and other financing decisions are often driven by a desire to reduce investment risk as well as financing costs. More than that, foreign exchange risk management involves both financing and investment decisions. The rational combination of these decisions is the decisive factor in maximizing the value of a business to its shareholders.

Financial executives in multinational companies face many challenges that come from its “multinational” element. These constraints include foreign exchange risks, inflation risks, and differences between countries; international money markets, coupled with limited accessibility; currency controls, and political risks such as gradual and sudden deprivation.

When considering the distinctive characteristics of multinational financial governance, it can be understood that companies often emphasize the economic and political risks faced when going abroad. However, a company must accept those risks if it wants to gain advantage by becoming a multinational.

2. Practice of financial management of some multinational companies in the world

2.1. Development of the multinational company model

A recent United Nations report states that 63/100 of the world’s largest economic organizations are multinational companies. These private companies are richer than any other 120 countries around the world. From just 3,000 companies in 1995, now it has increased to 83,000. Together with 921,000 branches around the world, these companies, although directly employing 90 million workers (of which about 20 million are in developing countries), have created 25% of the total product of the world. World - the top 1,000 firms alone account for 80% of world industrial output. Besides, the multinationals also have negative effects. One of the areas where the strength of multinationals is most clearly seen is culture. For example, oil companies and banks are much more dependent on international business than pre-packaged food companies and car manufacturers. Even within the same industry, companies still have varying degrees of interest in international business.

In 2019, Exxon has up to 60% of assets, 79% of sales and 77% of profits earned from abroad. Meanwhile, the corresponding figures for Atlantic Richfield are 26%, 21% and 8%. Likewise General Motors generates 54% of its income from abroad, contrasting it with 14% for Ford and less than 8% for Chrysler⁵. Multinational companies are associated with globalization. When companies first went global, they sold abroad, but produced and controlled their activities at home.

2.2. Experiences in financial management of some typical multinational companies in the world

2.1.1. Experience of Japanese companies in investment decision making

In 1945, Japan was a country ravaged by bombs and war and was forced to surrender unconditionally. During the 1950s, Japanese exports had many problems due to their low quality image. But nearly 20 years later, Japanese companies such as Sony, Hitachi, Seiko, Canon and Toyota have established an international reputation on par with Zenith, Kodak, Ford, Philips and General Electric. The following are some lessons about investment decisions in international business strategies drawn from Japanese practice, arguably the most successful global expansionist country in history. Investing in product quality First of all, it should be seen that Japan has invested a lot of money and effort into quality since professors W. Edwards Deming and JM Juran flew over the Pacific. 1950s to teach them how to manage quality - a solution commonly known as Total Quality Control (TQC). While very few American companies care about Deming or Juran and China, the Japanese have embraced their ideas. In fact, the Deming Award is Japan's most prestigious award for industrial quality control.

2.1.2. Experience of Nestlé and Novo Industri in funding decision making

Nestlé Nestlé, a Swiss food and beverage group with a total value of \$ 17 billion, is a multinational company. Nestlé is headquartered in Vevey, Switzerland. About 98% of its sales are made abroad and its diversification activities are present in 150 53 countries. Its revenue structure by market is: 32% from Europe, 31% from the Americas (the US alone accounts for 26%), 16% from Asia, 21% from the rest of the region.

Centralized financial control Nestlé's very large subsidiaries (as they are almost wholly owned) are decentralized to operate. However, financial affairs are concentrated in Vevey, Switzerland. There are only 12 people but the finance department performs all the financing decisions, managing risks, determining returns, calculating global debt / equity structures and evaluating the performance of all. Subsidiaries. Nestlé's centralized financial function plays a key role in the complex network that includes the transfer of money from branch to headquarters and investment flows from headquarters to group branches. Profits and idle money are gathered by the Financial Department in Vevey, then poured back to subsidiaries in the form of equity and debt investments. Nestlé believes this is the best possible investment solution for corporate value.

2.1.3. American Express experience in short-term financial decision-making

With millions of companies worldwide, American Express Group of America is considered the leader with all kinds of credit cards and travelers' checks. With over 155 years old, American Express continues to be a leader in the travel and financial services industry. In 2004, the company said it had more than USD 3.4 billion in revenue from travel and financial services including credit cards, monetization, travel insurance, personal loans, online brokers and global banking.

In early 1980 the American Express Company (Amex) completed an eight-month study of the cash cycle of traveler's check and credit card businesses in seven European countries. Based on the results of this research, Amex has developed an international monetary management system with the expectation that monetary returns will be generated, i.e. investment increases or loan

amounts decrease, approximately. USD 35 million for Europe alone. About half of these savings are expected to come from revenues from enhanced disbursement and control. The other half is expected to come from better bank balance controls, lower bank costs, improved timing of interest payments, and better control over foreign currency exchanges.

3. Ability to apply the financial management experiences of multinational companies in Vietnam

3.1. Forecasts about the development of economic groups in Vietnam

Studying the current situation of Vietnamese enterprises as well as their development trends, we can predict and have confidence in a bright future. Vietnam's large enterprises, most of them economic groups, seem to be preparing their own equipment to expand operations and gradually reach the world market.

According to a survey published by Grant Thornton Company, about 30% of Vietnamese businesses plan to grow by acquiring other businesses. The survey also showed that only 3% of businesses said they would sell their businesses within the next three years.

However, compared to the world average, the rate of Vietnamese enterprises wanting to buy back other enterprises is low. According to Grant Thornton, 44% of global businesses intend to buy another company within the next three years because they see an acquisition or merger as a strategic business tool for growth. The survey also showed that 30% of enterprises in Vietnam want to list their shares on the stock market in the next three years. Currently, the establishment of economic groups and the "Parent Company - Subsidiary" model is happening quite actively in our country. Eight state-owned economic groups established by the Government and a series of private enterprises formed according to the blooming economic group model are showing the trend of developing linkages to grow and increase competitiveness in the context of integration. Besides the formation of State economic groups through the arrangement and decision of the Government on the basis of corporations, models of private economic groups appeared.

3.2. Some solutions to improve the applicability of financial management experiences of multinational companies in Vietnam

Firstly, organize the corporate financial management department according to a unified structure.

In multinational companies around the world, financial management is separated from the work of statistical accounting. Financial management in these companies is to synthesize, analyze, evaluate the financial situation and make short and long term financial decisions of the business. That is the method that should be put into use in Vietnamese businesses. The financial management department must rely on accounting reports, reports on revenue, expenses, reports on personnel and wages, ... by the financial accounting department, management accounting, statistics providing, combining with objective factors to conduct classification, synthesis, analysis and evaluation of the financial situation of the business. The ultimate goal is to coordinate with other management departments to make the right investment decisions as well as mobilize the necessary capital for such investment activities.

Second, improve the professional qualifications of finance-accountants

Consolidating the contingent of financial and accounting staff with good expertise and high sense of responsibility is a decisive factor in the quality of organizational management. A team of finance and accounting staff with good skills and high sense of responsibility is seen as a key stage in the development of organizational management in each enterprise.

Third, Approach the goals of financial management appropriately

In a competitive market economy, each enterprise must strive to always “survive and develop” in all economic situations. In which existence is a necessary condition and development is a sufficient condition. Investors in the market, when looking for investment opportunities, often turn to promising businesses - which promise to create stable income streams and continuous growth in the future, ensuring initial benefits. That is, ensuring the ability to produce the rate of return or the expected rate of return. Investors always appreciate businesses with good growth potential and a healthy financial position, and thus profitability is the foundation of its value in the market. The more interested a company is and is willing to invest when the opportunity arises, the higher the market value will be because the share price for investment will increase. Thus, from the perspective of financial management, the business should aim to continuously improve and maximize its market value. In other words, financial managers must constantly improve the efficiency of management and use of investment capital as well as ensure the safety of investment capital to attract investors’ capital in the financial market. ...

Fourth, Appraise projects before making investment decisions

Investing is a risky activity because actual investment results are not a known and certain value. When evaluating a project, we rely on predictive or expected results and actual results are only known for sure once the project has been implemented and completed. Actual results may differ from expected results. Investing in a project means giving up an amount of existing wealth in exchange for the chance to have an uncertain future stream of income. But businesses cannot fail to invest. That is why the appraisal of investment projects is so important to any business.

Fifth, Determine the appropriate discount rate when evaluating the project

In fact, when financial appraisal, the investment projects of companies often use discounts that are not equal to the long-term loan interest rates of banks. As discussed above, this is not correct.

Therefore, in order to improve the quality of investment decisions a company should determine an appropriate discount rate to determine the net present value of the project. If the project has an average level of risk, which means that when investing in this project does not change the current risk situation of the business, the discount rate should be equal to the average cost of capital of the public. The company is determined based on the financing plan for the project.

Sixthly, Mobilize and ensure sufficient and timely capital for the business activities of enterprises

During the operation of the business, there are often short-term and long-term capital requirements for the company’s regular business activities as well as for investment and development. The role of corporate finance is first and foremost in determining the right capital needs needed for the business of the business in each period and then choosing appropriate methods and forms of capital mobilization. from inside and outside to promptly respond to capital needs for business op-

erations. Today, along with the development of the economy, many forms have arisen new allows businesses to mobilize capital from outside. Therefore, the role of corporate finance is becoming more and more important in the proactive selection of capital mobilization forms and methods to ensure continuous and effective operation of businesses at the cost of raising capital lowest.

CONCLUDE

The world economy is developing in the direction of increasingly strong globalization. Along with it is the rapid development of a multinational company model. These companies - operating internationally - succeed with outstanding management that helps them combine diversity and control changes and changes that come from its “multinational” element. Financial management is always the most important area of corporate governance in general. Therefore, in order to improve financial management activities in Vietnamese enterprises, should we learn from the experiences of multinational corporations in the world.

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PUBLIC INVESTMENT AND THE ROLE OF PUBLIC INVESTMENT FOR VIETNAM ECONOMIC DEVELOPMENT PROMOTION

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Abstract: *Currently, public sector obviously plays an important role in the development of national foundation. The increase in the quality of public sector will help to raise the orientation of financial resources in economy. Moreover, Vietnam economy has been gradually integrated into the world economy with many opportunities and challenges related to the economic development promotion. Therefore, the research on the role of public investment for Vietnam economic development promotion has made significant contribution into the development of public sector.*

Keyword: *Investment, Public sector, Economics, Public investment.*

According to Wikipedia: Public investment or government spending refers to the government expenditures to provide public goods such as the investment into the development of roads , schools , the military, etc. ..

Public investment is an important component of aggregate demand. Keynes economics Keynes mentioned that public investment has the effect of boosting aggregate demand through the financial multiplier. Based on that, Keynes emphasized the importance fiscal policy in the government macroeconomic control. Therefore, in order to clearly see the role of public investment in socio-economic development, it is necessary to clarify the impact of government spending on the use of fiscal policies in quite different periods.

To overcome the shortcomings of free market economies, governments need to use tax and government spending tools to stabilize and develop macroeconomics, Keynes said. Since then, the theory of Fiscal Policy has been studied and widely applied all over the world to this day

The use of government spending to stimulate the economy stems from two important theories of Keynesian theory.

Firstly, the economic recession stems from an economy with redundant production capacity, inputs for production are not used at full capacity, unemployment increases. Oversupply causes prices to tend to fall in all markets, therefore, the more discouraging buyers are, and the further the demand is from the actual supply. As a result, the economy has been caught in a recession trap that cannot escape on its own.

Secondly, the government can spend all, even more than its income. Meanwhile, households and the private sector often spend less than their total income because they want to save and save. Under normal circumstances, savings are transferred to the corporate sector for investment (forming a component of aggregate demand), but during a recession, firms do not want to invest anymore because they cannot get profit

On that basis, Keynes proposed a plan: to shift purchasing power from the residential and business sectors into the hands of the government to increase demand effectively, to bring the economy out of the trap of stagnation due to lack of purchasing power.

This basic ideology of Keynesian theory gradually became a guide to the economic activities of states around the world. Over time, along with a host of other instruments, it becomes the basic vehicle of government intervention policies in socioeconomic development.

The mechanism of impact of fiscal policy on socio-economic development can be generalized on the following basic features:

Fiscal policy is an important macroeconomic policy that enables the state to solve macroeconomic problems. In which, economic growth is a macroeconomic goal that the State is particularly interested in, adjusted by many different policies. Fiscal policy has the effect of adjusting economic growth in both cases: when the economy falls into recession or the economy grows too hot.

The influence of fiscal policy on economic growth targets is through the effect of economic output. This mechanism of action is intended to ensure that the output of the economy reaches its potential output level. And so the fiscal policy instruments will be used to deal with two contradictory scenarios: real output is higher than potential output (economic overheating) and low real output. than the potential output level (the economy fell into a state of recession, crisis). The government will use the policy tools of government spending (G) and tax (T) to bring output to potential output.

Theoretically the impact of proactive fiscal policy on production potential has been analyzed as follows:

In a market economy, fiscal policy is used by the Government as a tool to regulate the macro economy. When the Government changes tax policies and spending policies, it will affect all production and business activities of enterprises, thereby affecting aggregate demand and changing output, prices and employment in economy. That change, in turn, made a comeback for businesses. Thus, the fiscal policy is mainly the adjustment of the Government's income and expenditure to impact on the economy in the short term as well as in the long term.

In the short term, those adjustments are aimed at achieving economic stability.

In the long run, the function of structural adjustment and economic growth is more important. According to Keynesian theory, when the economy cannot adjust itself to equilibrium, the Government will use fiscal policy to influence the economy.

Case 1: When the output of the economy is low compared to the potential output level, the impact of fiscal policy is required to bring the economy back to its potential output level. The level

of potential output is understood as the highest level of output that the economy can achieve in the condition that all of the workers are fully employed (full employment) without causing inflation.

Assuming the economy goes into recession, businesses fall into a state of stagnation, they do not want to invest more, households do not want to spend more for consumption so the aggregate demand of The economy is low compared to the potential output, workers are pushed into a state of job loss and unemployment increases. The Government's goal in this case is to reduce unemployment and expand aggregate demand by:

Suppose that the Government increases spending (ΔG) then causes aggregate demand (AD) to increase from AD_0 to AD_1 . The equilibrium output of the economy increases from Y_0 to Y_1 , the price increases from P_0 to P_1 (equilibrium price of the market). Due to the increase in market prices, enterprises invest more to develop production to seek profits, thus creating many jobs, contributing to the reduction of unemployment. This is shown in Figure 1

Figure 1 shows that: When the Government increases spending by an amount of ΔG , aggregate demand will increase from $AD_0 \rightarrow AD_1$; hence the overall price and equilibrium output of the economy also increase.

Or, when the Government cuts taxes (T) then it encourages people's consumption and the investment of businesses increases, causing aggregate demand (AD) to increase from AD_0 to AD_1 , leading to an increase in prices from P_0 to P_1 , equilibrium output will increase from Y_0 to Y_1 , unemployment decreases.

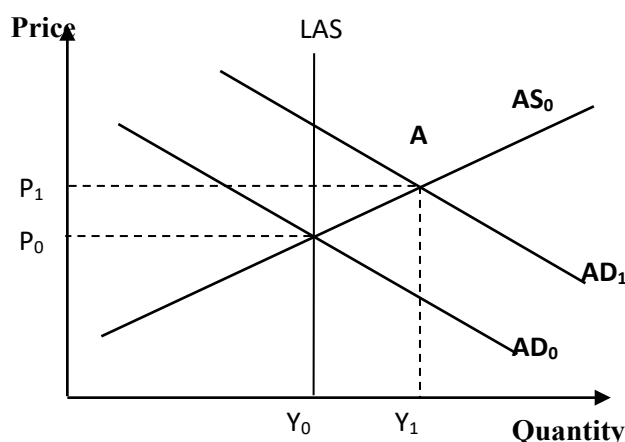


Figure 1: Impact of fiscal policy

Case 2:

When the economy grows “too hot”, the output of the economy exceeds its potential output (Y_0), the supply is limited, the total demand increases sharply, the inflation increases rapidly, causing disadvantages for economy in general and all production and business activities of enterprises in particular. In this case, the government's goal is to reduce inflation by either cutting spending or raising taxes, so that overall spending (aggregate demand) falls, output falls and inflation slows.

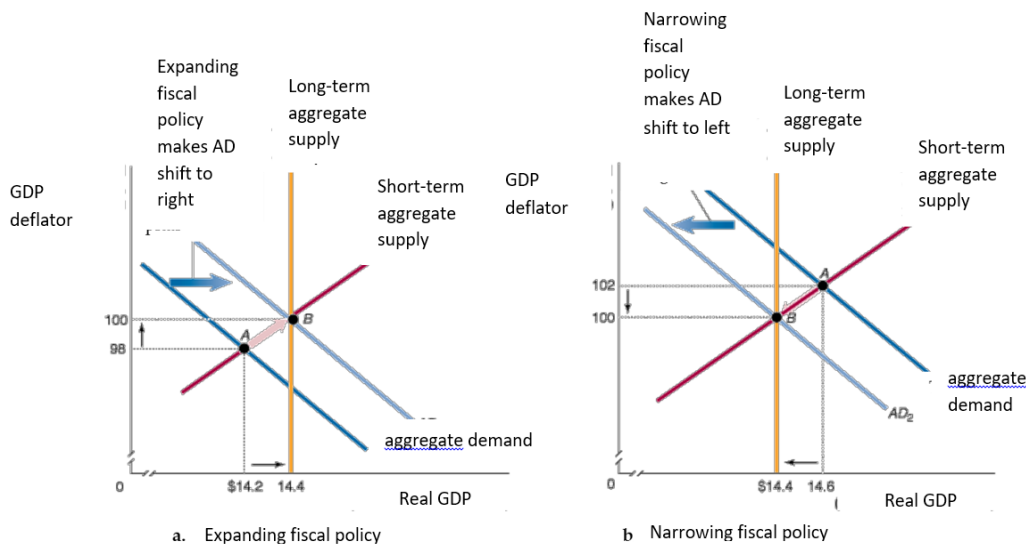


Figure 2: Expanding fiscal policy and narrowing fiscal policy

Tightening fiscal policy, decreasing government spending (decreasing G) reducing aggregate demand; general prices and equilibrium output also decrease. As the graph shows, as the aggregate demand of the economy increases from AD₀ to AD₁, output Y exceeds the potential output Y₀, so the price rises from P₀ to P₁ and causes inflation. To curb inflation, the Government can use fiscal policy to intervene in the economy by cutting spending (G) or increasing taxes (T). Thus the aggregate demand of the economy decreases from AD₁ to AD₀ equilibrium shifts from E₁ to E₀, equilibrium output falls from Y₁ to Y₀, price falls from P₁ to P₀, inflation also slowdown the economy reaches a long-term equilibrium.

Figure 2 depicts the impact of open fiscal policy and narrowed fiscal policy on economic growth.

Summary:

+ When the economy is in recession, the Government can use easing fiscal policy through two tools G and T:

- Or increase spending.
- Or tax reduction.
- Or increase spending and reduce taxes.

+ When the economy is having high inflation, the Government can use tight fiscal policy through two tools G and T:

- Or reduce spending.
- Or raise taxes.

Or both reduce spending and increase taxes.

The theoretical and practical issues has resulted in the important roles of public investment in economic development:

- Public investment plays an important role for the State's intervention and the economy, ensuring economic stability and sustainable development. In fact, when the world economy fell into a state of crisis, recession in 2008, or the current Covid-19 pandemic, most countries use economic stimulus packages to fight recession and recover the economy. : America spent 1500 billion USD, China 600 billion USD, Japan 265 billion USD, Europe 267 billion USD, UK 88 billion USD, Vietnam 8 billion USD; ... With the current covid-19 epidemic, countries have aggressively spent against the epidemic: the US \$ 2,000 billion, Germany \$ 608 billion, the UK £ 330 billion, France \$ 49.42 billion, Australia \$ 10.4 billion, Thailand spread 12.7 billion USD, Italy 28 billion USD, Japan 4 billion USD; ... And in general, the stimulus packages of the governments of the countries have quickly brought into play efficiency, countries' economies gradually got out of crisis and recession. , economic recovery and growth.

- Public investment has been contributed into national economic and technical infrastructure and the promotion of socio-economic development. In general, basically the technical and economic infrastructure of the developed countries has been raised mostly from public investment, the transport and telecommunications infrastructure systems, education culture of Vietnam so far has mainly come from the state budget, government bonds, and ODA. Currently there is some basis built from the capital of enterprises, but overall, this capital flow is still occupied density nh o in total social investment, public investment still accounts for over 40% of capital investment society.

- Public investment has been contributed into the economic restructuring of industrialization and modernization. The practice of Vietnam, China and some other countries showed that state investment spending has been contributed into the formation and development of key economic sectors such as oil and gas, electricity, chemicals, construction materials, electronics, agriculture, forestry, and fisheries, Moreover, the development of economic and technical infrastructure have helped to attracted a large amount of capital from domestic investors and help to develop industry and services towards industrialization.

- Public investment has been contributed into socio-cultural development and people's living standards. With great investments in culture, education, health and society, the country's education has been raised to new heights. Moreover, the activities of scientific and technical activities, culture and sports has been also developed and achieved remarkable achievements in recent years.

Especially, public spending with the national commercial infrastructure, infrastructure investment has gradually changed people's lives, the material and spiritual standard of living of all strata of the people has been improved.

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FACTOR AFFECTING THE LEVEL OF ENVIRONMENTAL ACCOUNTING INFORMATION DISCLOSURE IN VIETNAM MINING INDUSTRY

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Abstract: *The research is to evaluate factors affecting the disclosure level of environmental accounting information. Data were collected from 63 mining companies listed on the Vietnam stock market for five consecutive years from 2015 to 2019. Quantitative research methods are used to explore the impact factors and evaluate the influence level of each factor to environmental accounting information disclosure. The results indicate that the level of environmental accounting information disclosure is influenced by the following factors: Business size, Financial leverage, Market to book ratio, Return on assets and independent audit. Basing on the results, the authors make recommendations to improve the environmental accounting activities of Vietnamese mining companies to increase the competitiveness in the context of global integration.*

Keywords: *Environment accounting, information, information disclosure, mining industry.*

JEL code: A14, G33, M41.

1. Introduction

The mining industry in Vietnam has made important contributions to the country's development in recent years. However, due to the specific activities of the industry, the activities of mining companies have had and are having significant impacts on the community, such as: smoke, pollution of water, air, lack of accommodation... makes the social responsibility problem of mining enterprises hotter. In this situation, the practice and disclosure environmental accounting information of mining enterprises is really necessary, is a measure for mining companies to improve their reputation and image. of the company with domestic and foreign partners. Recognizing the importance of this activity, Vietnamese mining companies have been paying more attention to the implementation of environmental accounting. However, the level of environmental accounting information disclosure by mining companies listed on the Vietnamese stock market has not really met the expectations of related parties. Therefore, the research team carried out the topic with the aim of examining and evaluating the factors affecting the level of environmental accounting information disclosure in the mining companies listed on the stock market of Vietnam. The study contributes to propose directions and effective solutions to promote the implementation and transparency of environmental accounting information by mining companies in the coming time.

2. Literature Review

The world is experiencing a serious imbalance between economic development and environmental protection. Therefore, the enterprise disclosing information related to the environment in the annual report has been and will receive the attention of stakeholders, as well as researchers in particular. In the world, there are quite a lot of studies on environmental accounting practices, as well as environmental accounting information disclosure (Brammer & Pavelin, 2006). The related studies are summarized as follows:

Research on factors affecting the level of voluntary disclosure of information related to the environment and society in annual reports of different types of enterprises such as: Banks, SMEs, and public Listed companies, automobile manufacturing enterprises ... These studies can be mentioned as the research of (Dube & Maroun, 2017; El Ghoul, Guedhami, Kim, & Park, 2018). (Fuzi, Habidin, Janudin, & Ong, 2019b), The research results show that factors such as years of service, annual profitability, firm size, profitability, debt management coefficient and ISO14001 certificates have a significant impact on the degree of publication. Voluntary information related to the environment and society of the business.

Research on factors and barriers affecting environmental accounting practices and disclosure of (Salama, Anderson, & Toms, 2011) has shown that compulsivity is a key factor leading to the practice of environmental math. Financial constraints and lack of guidance are the main barriers affecting the degree of environmental accounting practices in firms.

Comparative study of environmental and social responsibility disclosures between different groups of companies. The study of (Zhang & Chen, 2017) explained that the difference in the degree of disclosure between companies is due to the legal system, the company's performance characteristics, the characteristics of the audit firm. independence, corporate governance characteristics.

Recent studies in Vietnam related to environmental accounting are mainly researches on solutions to applying environmental accounting to different types of businesses, such as: (S. L. NGUYEN, PHAM, & NGUYEN, 2020). indicates that the degree of adoption of environmental accounting in brick manufacturing enterprises is relatively low and there is a close relationship between the level of environmental cost management accounting and the performance of the business. enterprise. However, the study just stopped at the results of the application evaluation but did not go into depth analysis of the influencing factors.

Research by (N. Nguyen, 2018) on assessing the impact of environmental accounting information disclosure and accounting on the ability of Vietnamese enterprises to access foreign finance. The release of environmental accounting information has a strong impact on the decisions of foreign investors. From there, it affects the ability of enterprises to access foreign capital.

Research by (B. T. N. Nguyen et al., 2015) has identified the factors that affect the degree of corporate social responsibility disclosure including: firm size, financial leverage, size Board of Directors, the independence of the executive director and the independent audit. However, research was conducted for all businesses in different sectors without taking into account the effects of business lines. Moreover, the study did not mention much about environmental accounting information to propose recommendations for improvement in the future.

(L. Nguyen & Tran, 2019) have pointed out the factors affecting environmental accounting in construction enterprises listed on the Vietnamese stock market, or research (N. Nguyen, 2018) has pointed out the factors affecting the environmental accounting of listed companies which are organized according to the parent company - subsidiary model. However, these studies are done for different types of businesses in terms of industries and organizational characteristics compared to mining companies. Mining companies in Vietnam with their own characteristics of the characteristics of the organization and management, the characteristics of the business and production organization, the level of environmental impact in the business process, production and business activities. Business activities and business activities of mining companies have a great impact on the environment. Therefore, the improvement of environmental accounting in these enterprises is really urgent. Therefore, this study is really necessary to improve the transparency of environmental accounting information of the company in the coming time and completely does not overlap with previous studies.

3. Theoretical background and Research Hypotheses

3.1. Theoretical Background

The research views on environmental accounting all say that environmental accounting is evaluated under two angles, about accounting and environmental management. In addition to the function of supporting internal decision-making in the business activities of enterprises to aim at improving financial performance and environmental performance, environmental accounting also has the function of providing providing information outside the enterprise's scope to stakeholders such as banks, financial institutions, environmental management agencies, residential communities, ... thereby helping businesses (1) increase their competitiveness due to the trend of using green and clean products; (2) change and increase the level of awareness and action of organizations and stakeholders on environmental issues in each business and the entire economy. Thus, the complete, timely and accurate disclosure of environmental accounting information by the construction and installation enterprises listed on the Vietnamese stock market is important not only for enterprises and investors but also for investors and state management agencies. To explain the environmental accounting information disclosure of enterprises, the research applies the following theories:

The legalization theory and the responsibility to disclose environmental accounting information - The Legitimacy theory is defined by (Miles & Covin, 2000) as follows: "An entity can exist when its value system is consistent with the value system of the larger social system in which the entity resides. Inheriting and developing the theory of legalization, (Bebbington, Larrinaga-González, & Moneva-Abadía, 2008)) argued that legalization theory is related to the power of society. The authors believe that business enterprises in society must sign a social contract that the managers agree to perform. The terms of this contract can be clearly expressed, it is the provisions of the law, or there are terms that are not clearly expressed, depending on the expectations of the social community. The legalization theory explains the responsibilities of enterprises to implement environmental accounting as follows: (1) The necessity of implementing environmental accounting comes from the society, from the dissatisfaction of the Government, but pressure from the requirements of workers, consumers and stakeholders (Guthrie & Parker, 1989) (2) Disclosure of environmental information is the driving force for businesses to achieve their desire to legalize their activities, thereby promoting the corporate image to bring benefits to the business (Lanis &

Richardson, 2013). As such, disclosing environmental information publicly in annual reports is one way of presenting corporate strategy. This strategy implies that the business is operating legally and is socially responsible.

Stakeholder theory is derived from the view of economic interest in all actions of economist Freeman (Guthrie & Parker, 1989). Accordingly, all stakeholders are affected by all corporate behavior, including shareholders, suppliers, customers, employees, competitors, activists, the media, legislators, scholars, indigenous peoples, labor organizations, local governments and Government. Based on the theory of stakeholders, (Roberts, 1992) explains: If the stakeholders control the important resources of the business, the business will find ways to satisfy their needs. Environmental Disclosure is considered to be an effective governance strategy to address relationships and satisfy needs with stakeholders. On the other hand, research by (Bebbington & Thomson, 2007) and (Zhang & Chen, 2017) shows that return on equity (ROE) has a positive effect and that the debt to equity ratio affects the opposite of information disclosure. about environment.

Cost benefit theory and environmental accounting information disclosure: Cost benefit theory shows that benefits are gained from accounting information disclosure the environment must be considered in relation to the cost of generating and providing that information (Sun & Cui, 2014) As such, the extent to which environmental accounting information is disclosed must be considered between the added benefits of disclosing the information to the business and the society and the additional costs that the enterprise and society will do this task.

3.2. Research Hypotheses

On the basis of an overview of empirical studies in the world and in the country on the factors affecting the degree of environmental accounting information disclosure, and the research of background theories related to the degree of disclosure. Environmental accounting information. The researchs team has summarized the factors affecting the level of environmental accounting information disclosure as follows:

Business size (SIZE)

The larger the enterprise size, the more likely it is the tendency to disclose environmental accounting information. Large businesses are always confident in their prospects, so they are often willing to spend the cost of publishing more voluntary information to differentiate from competitors and increase corporate value (Gupta & Krishnamurti, 2018). On the other hand, the bigger the enterprises, the more they want to maintain and enhance the image, confidence and reputation in the eyes of investors and state agencies. Therefore, they are willing to spend money to disclose information to meet the needs of stakeholders (Fuzi, Habidin, Janudin, & Ong, 2019a) Moreover, for large enterprises, the accounting apparatus is relatively good, the accounting information system relatively meets the needs of information both in quality and quantity, so the publication of more accounting information. It is also less expensive than small businesses.

Financial leverage (LEV)

According to stakeholder theory, the higher financial leverage an enterprise has, the higher the debt-to-equity ratio, the greater the conflict of interest between related parties such as credi-

tors, shareholders and managers the higher the need to provide information to satisfy stakeholders. However, businesses with higher debt ratios often face financial difficulties and solvency. Therefore, according to cost benefit theory, it is very difficult for them to decide to spend costs on environmental and social issues. The empirical study of (Lin & Dong, 2018) has also shown that the debt to equity ratio has the opposite effect with the level of environmental disclosure.

Market to book ratio (MTB)

The market price of a stock represents the level of assessment of stakeholders and especially investors of the value and profitability of the business. The more appreciated businesses are, the more they tend to satisfy stakeholders in order to maintain their reputation and brand. Therefore, enterprises with higher market prices of shares are more likely to disclose environmental accounting information to satisfy investors' needs.

Return on assets (ROA)

According to the theory of stakeholders, the more profitable enterprises are, the more they have the ambition to satisfy and satisfy the information needs of related parties, especially related parties who hold control. Control important resources of the business. That is an opportunity for businesses to increase the value of their shares in the market. The higher the financial efficiency, the more willing they are to devote their financial resources to the development of a sustainable environment in which they operate.

Independent audit (AUD)

The more reputable the independent auditing firms are, the more likely it is that they will require a degree of disclosure from their customers. Therefore, the fact that enterprises actively choose reputable independent auditing firms is considered a good signal in ensuring transparency and corporate information disclosure.

From the above analysis, the author synthesizes the hypotheses about the factors affecting the level of environmental accounting information disclosure by mining companies listed on Vietnam's stock market as Table 1.

Table 1: Research hypotheses

Hypothesis	Description	Expectations for the sign
H ₁	Company size and environmental accounting information disclosure	+
H ₂	Financial leverage and environmental accounting information disclosure	-
H ₃	Market to book ratio and environmental accounting information disclosure	+
H ₄	Return on assets and environmental accounting information disclosure	+
H ₅	Independent audit and environmental accounting information disclosure	+

Source: Synthesis of the researchs team.

4. Research Methodology

4.1. Data collection

The research sample includes 63 mining companies listed on the Ho Chi Minh City Stock Exchange (HOSE), Hanoi Stock Exchange (HNX), decentralized exchange (OTC), UPCOM out of 87. company as of December 31, 2019, accounting for 72.41% of the total. Figures are collected from 2015-2019. Financial information of listed companies is obtained from <http://finance.vietstock.vn>. Environmental accounting information is published and taken from annual reports, sustainability reports and corporate governance reports published on the website of 57 companies in the sample. Data used for analysis includes 271 observed variables in 63 companies for 5 consecutive years from 2015 to 2019

4.2. Variable Measurement

Level of environmental accounting information disclosure (LEAD)

According to the Global Reporting Initiative’s (2016) (“Global standards for sustainability reporting,” Gri Standards, 2013), Sustainable Development Report Guidelines, the total number of items for disclosure of mandatory environmental accounting information is 34 items in the 12 relevant fields as Table 2:

Table 2. Items for Mandatory Environmental Information Disclosure

No.	Field	Number of items	No.	Field	Number of items
1	Employment	3	11	Rights of Indigenous Peoples	1
2	Labor/Management Relation	1	12	Human Right Assessment	3
3	Occupational Health and Safety	10	13	Local Communities	2
4	Training and Education	3	14	Supplier Social Assessment	2
5	Diversity and Equal Opportunity	2	15	Public Policy	1
6	Non - Discrimination	1	16	Rights of Indigenous Peoples	2
7	Freedom of Association and Collective Bargaining	1	17	Marketing and Labeling	3
8	Child Labor	1	18	Customer Privacy	1
9	Forced or Compulsory Labor	1	19	Socioeconomic Compliance	1
10	Security Practices	1			

Source: Composer from Gri Standards, 2016

Depends on how the company has published relevant information on the annual report for assessing the scored for the level of corporate social responsibility disclosures (LEAD) according the Table 3.

Table 3. Method to Assess the levels of environmental financial accounting practices

Level of information disclosure	Score
Publication information is both quantitative and qualitative form	4
Only qualitative, non - quantitative disclosure	3
Quantitative information both in object and value, no qualitative information	2
Quantitative information on the value, no object and no qualitative information	1
No information disclosure	0

LEAD is calculated according to the weighted approach, depending on the quality of the information provided to assess the score for each item, then averaged for each category and calculated LEAD. The formula is as follows: The level of corporate social responsibility of firms $X = \frac{1}{n} \sum_{i=1}^n Y_i$ (Y_i is the score of information item *i* published by firm X).

Measure the independent variables

Table 4: The way to evaluated the Control Variables

Code	Control Variable	How to evaluate
SIZE	Business Size	Log (Total Assets)
LEV	Financial leverage	Total long-term debt divided by total assets
MTB	Market to book ratio	Market equity divided by book equity
ROA	Return on assets	Net income before extraordinary items divided by total assets
AUD	Independent audit	= 1, if the independent auditor belongs to Big 4; = 0, remainder

4.3. Analytical method

To achieve the research goal of the factors affecting the level of environmental accounting information disclosure, the study to test hypotheses from H1 to H6 with the support of data analysis software Stata Multivariate linear regression method is applied with the following model:

$$\text{LEAD} = \beta_0 + \beta_1 \text{SIZE} + \beta_2 \text{LEV} + \beta_3 \text{MTB} + \beta_4 \text{ROA} + \beta_5 \text{AUD} + e$$

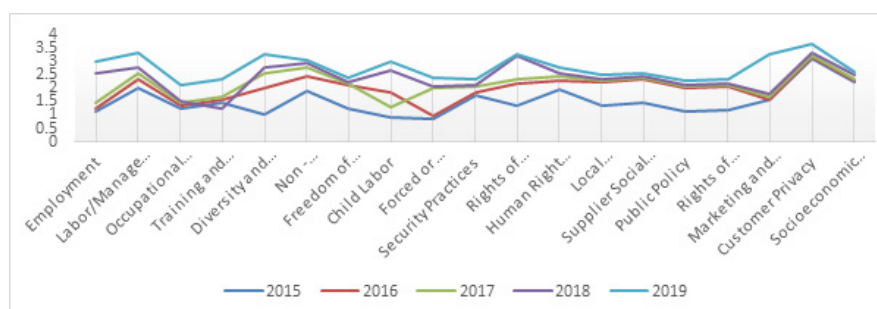
In addition, the Hausman test and F_{test} test are used to choose the optimal results between 3 models of Fixed-effects, random-effects and the least squares method.

5. Results and discussion

5.1. Descriptive statistics

Figure 1 depicts the level of environmental accounting disclosures of mining companies listed on the stock market for the period 2015-2019. This result shows that the average value of the environmental accounting disclosure index by each field has been increasing over time over the years 2015-2019. It is also a good sign that mining companies in Vietnam are gradually focusing on disclosing information on environmental indicators, especially during the time with detailed guidance of the circular. 155/2015 / TT-BTC dated October 6, 2015 (Ministry of Finance, 2015). However, with the highest score calculated for each item is 4, but the average value of this index by sector only fluctuated from 0,843 to the highest of 3,298, a figure that was not as expected. its important.

Figure 1: The LEAD performance of mining companies for the period 2015 – 2019



Source: Synthesis of the researchs team.

Table 5 presents the basic descriptive statistics of the independent and dependent variables. According to (Tauchen, 1986) for reliable estimation when performing regression analysis is $n > 200$. According to (Jamail, 2011) with 15 - 20 observations for a variable need to be estimated. The minimum sample size for the study is 120. Combining these principles, the sample size selected by the author is 271 observations of 63 enterprises, accounting for 71,41% of the overall reliability. Table 5 shows that the average score for disclosure of environmental accounting information is 2,167, and ranges from 0,843 to 3,298. Firm size is from 10,165 to 19,825, proving that the size of enterprises in the sample is quite diverse. From the quiz numbers, it shows that the sample is quite broad enough to infer the overall results.

Table 5: Statistical Analysis

	LEAD	SIZE	LEV	MTB	ROA	CFO
Number of observations	271	271	271	271	271	271
The average value	2,167	10,213	0,398	3,280	0,867	0,376
Standard deviation	2,048	9,678	0,278	3,301	0,717	0,423
Minimum value	0,843	10,165	0,286	0,217	-0,756	0
Maximum value	3,298	19,825	0,806	15,810	0,948	1

Source: Synthesis of the researchs team.

5.2. Evaluation of Correlation between Variables

Table 6 presents the results of testing the correlation coefficients between the variables and the multicollinearity test. The results show that there is a correlation between the independent and dependent variables of the model, the level of environmental accounting information disclosure is positively related or positively correlated with the variables: Business size, Market to book ratio, Return on assets, and cash flow from operation and negative relationship (negative correlation) with the variable of financial leverage. At the same time, the correlation pairs of variables are less than 0.8 and the variance magnification coefficient (VIF) of the independent variables are all < 5 , which proves that the pattern does not exist in the phenomenon of variance.

Table 6: Correlation and Muti – Collinearity Test

	LEAD	SIZE	LEV	MTB	ROA	AUD	Hệ số VIF
LEAD	1,000						-
SIZE	0,413	1,000					3,154
LEV	0,389	0,315	1,000				2,647
MTB	-0,319	0,167	0,316	1,000			1,548
ROA	0,649	0,309	0,185	-0,317	1,000		2,034
AUD	0,327	0,305	0,209	0,156	0,427	1,000	1,325

Source: Synthesis of the researchs team.

5.3. Discussions

Table 7 presents the regression results using the least squares method (OLS), the Fixed effects model (FEM) and the Random effects model (Ciegis, Ramanauskiene, & Martinkus). The results show that there are differences between the 3 methods above. Therefore, in order to conclude which result should be used, the author conducted the following 2 tests:

Step 1: Use the Hausman test to make a decision whether to choose the FEM or REM method. Hausman test results with the value $p = 0.000$; therefore, the FEM model is more appropriate.

Step 2: Use F-test to choose the result between FEM or OLS method. F-test result with $p = 0.000$ value; therefore, the FEM model is more appropriate.

Thus, it is concluded that in this case using the regression results of the FEM method is the most appropriate. The results according to this model show that variables of Business size, Market to book ratio, return on assets, Cash flow from operation and financial leverage all affect the extent of environmental accounting information disclosure of listed mining enterprises on the Vietnamese stock market. The volatility of these variables explains 47,154% of the variation of the dependent variable, which is the degree of disclosure of environmental accounting information, the regression equation is rewritten as follows:

$$\text{LEAD} = 0,141 + 0,318 * \text{SIZE} - 0,510 * \text{LEV} + 0,518 * \text{MTB} + 0,286 * \text{ROA} + 0,198 * \text{AUD} + e$$

Table 7: Results from regression

	Constant	SIZE	LEV	MTB	ROA	AUD	R – Squared
OLS	0,298	0,439 (,0021)	-0,718 (,0058)	0,218 (,0039)	0,410 (,0021)	0,318 (,0048)	0,43264
FEM	0,141	0,318 (,0027)	-0,510 (,000)	0,286 (,0023)	0,518 (,000)	0,198 (,0028)	0,47154
REM	0,319	0,410 (,0065)	-0,521 (,0026)	0,517 (,0026)	0,539 (,0037)	0,287 (,0019)	0,13482

Of which: The values of the 1st row in each cell are taken from the column Coefficient. Values in parentheses are taken from the p_value column of the variable

Source: Synthesis of the researchs team.

6. Conclusion and recommendation

The research results show that the mining industry in Vietnam has made positive changes in awareness of the implementation of social responsibility and the disclosure of environmental accounting information. The fact that mining enterprises with high economic efficiency is often in the top of enterprises with good environmental responsibility assessment is shown through full and detailed disclosure of information. information related to the environment. Environmental accounting information disclosure is a way for mining businesses to improve their image and reputation with related parties. However, research data on the level of environmental accounting information disclosure of mining enterprises from 2015-2019 shows that such level has not really met the information needs of stakeholders. Therefore, in the coming time, businesses need to strengthen solutions to perfecting environmental accounting to support the disclosure of environmental information is really necessary. From the research results, the research team proposes some of the following recommendations:

Firstly, the research results show that profitability and financial leverage have a relatively large impact on the level of environmental accounting information disclosure with the coefficient 0.518 and -0.510. Profitability has a positive impact on the level of environmental accounting

information disclosure, financial leverage has a negative impact on the level of environmental accounting information disclosure. This shows that one of the measures to promote environmental accounting information disclosure is to improve profitability and reduce financial leverage. However, doing both of these things at the same time is not easy for businesses. Therefore, depending on the business strategy of each period, the enterprise should have a reasonable adjustment of financial leverage, ensure high profitability but still ensure sustainable development, and at the same time need to pay attention. It is important to devote resources to implementation and disclosure of environmental accounting information.

Secondly, firm size and market share price also have a positive impact on the level of environmental accounting information disclosure. The larger enterprises are, the higher the stock price on the stock market, the higher the level of environmental accounting information disclosure. This also shows that stakeholders have greater expectations and requirements for large firms and high market share prices, which is an opportunity but also a pressure on this firm. Therefore, in order to attract and maintain the advantage and position of the business, managers need to focus on investing appropriate resources for accounting and disclosure of information related to environmental accounting. In particular, it is necessary to propagate and raise awareness of environmental protection and social responsibility for the managers at all levels in the enterprise as well as the entire employees. Responsible to the society and community is the best way for businesses to improve their image, reputation and bring economic efficiency to the business.

Thirdly, the choice of any auditing firm also affects the degree of environmental accounting information disclosure of the enterprise. The enterprise is audited by large enterprises in the group of four leading auditing firms in the world, including: Pricewaterhouse Coopers (PwC), Ernst and Young (E&Y), Klynveld Peat Marwick Geordeler (KPMG) and Deloitte Touche Tohmatsu Limited (Deloitte) often have a higher degree of environmental accounting disclosures than other firms. Therefore, the selection of an independent auditor is also an important factor that the Board of Directors and the Board of Directors need to consider, it is also a list to enhance the reputation and image of the company. related parties. This is also considered as a measure to contribute to improving environmental accounting in the business.

On the basis of applying qualitative and quantitative research methods, the research team has assessed the factors that affect the level of environmental accounting information disclosure. The results show that the level of environmental accounting information disclosure tends to increase over the years and is influenced by factors: profitability leverage, financial leverage, enterprise size, listing time. and independent audit. From this result, the research team also gave some recommendations to improve the level of environmental accounting information disclosure in listed mining companies in the future. The article contributes to richer studies on environmental accounting, as well as contributes to promoting the release of environmental accounting information in mining enterprises in the future. However, there are some shortcomings such as: (1) Unrealized research examines the significance of environmental accounting information disclosure on the economic efficiency of enterprises, in order to improve the science of proposed solutions. (2) The degree of factors in the research model explaining the variation in the level of environmental accounting information disclosure is not high, which shows that there are other factors affecting the degree

of disclosure. Environmental accounting information. However, the authors consider these as suggestions for further research in the future.

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APPLYING DEA MODEL TO EVALUATE AUTONOMY MECHANISMS IN HO CHI MINH CITY'S HOSPITALS

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Abstract: *Public hospital autonomy has been a necessary trend in the reform process towards improving efficiency in public hospitals in Vietnam in general and public hospitals in Ho Chi Minh City in particular. Therefore, this article focuses on evaluating the performance of hospitals in city blocks belonging to two groups of self-guaranteeing regular operating expenses and part of regular operating expenses. These evaluations will be applied to assess Effects of the autonomy mechanism on hospital operation. Accordingly, we will assess using data envelopment Analysis method to compare the performance of hospitals against each other during the process of autonomous implementation of these hospitals from 2012 to 2017. From there, we found that the autonomy mechanism significantly increases the service revenue of the unit leading to an increase in revenue, and at the same time, most of the units themselves ensure that all regular operating expenses are operating efficiently.*

Keywords: *DEA model; Financial Autonomous mechanism; Hospital efficiency;*

1. Introduction

Ho Chi Minh City (HCM) is the largest city in Vietnam and mentioned as Vietnamese economic leader. With the rapid growth from the mechanical population as well as the increasing demand for quality of public services, the network of public service agencies in Ho Chi Minh City is undergoing many changes, including quantity, size and way of organizing and operating in all sectors. As of 2018, the city has 1,892 public non-business units, including 352 city block units and 1,540 district block units. As the leading economy of Vietnam, HCM demands to establish a specific mechanism of autonomy, especially financial autonomy in public non-business units. From there, the city will become the lead in improving the quality of public services to be worthy of being the largest city in Vietnam.

The Health sector has always been considered as a specific field that should be promoted toward accelerating autonomy. This is clearly reflected in a number of legal documents related to autonomy that are specifically issued for the health sector, along with the general regulations on autonomy of public service delivery units. However, the real assessment of medical units in Ho Chi Minh City when implementing the autonomy mechanism is still challenge. In this study we focus on investigate realities of HCM 's Hospitals by analyzing data in financial and autonomous reports from 2012 - 2017. Research helps policy-makers, HCM's administrators to take perspectives on qualitative Hospitals.

2. DEA Approach

Data Envelopment Analysis (DEA) is the dominant non-parametric approach to evaluate the efficiency of Decision-Making Units (DMU). From the point of view of assessing the efficiency of healthcare in general and hospital in particular, the efficiency of the DMU represents its distance from the efficiency frontier. The location and shape of the efficiency frontier depend on the user data and the used assumptions (a type of return to scale, input or output orientation). The efficiency frontier arises by plotting the relationship between the number of inputs and outputs achieved in the two-dimensional space. This is a combination of individual tracking relationships between inputs and outputs. The construction of the efficiency frontier is based on the principle of the best estimate, so we only regard it as an approaching reality [1]. From a historical point of view, we consider Farrell and his work in 1957 to lay the foundations of the DEA method. Farrell [2], in his work, starts to measure efficiency by assuming that only one input enters the model and production unit produces only one output. However, as the authors of the first comprehensive model are considered Charnes et al. [3], who extended the original Farrell's model. This basic model is referred to by the initials of its authors, the CCR model, assuming that the production unit operates under the conditions of constant return to scale. The second basic model was developed by Banker et al. [3], named as the BCC model and is based on the assumption of the variable return to scale.

Efficiency calculation using a DEA model can be oriented either to inputs or to outputs. Input-oriented DEA aims at producing the same amount of outputs while reducing the use of resources (Azevedo et al., 2012). Output-oriented DEA aims at maximising output while keeping inputs unchanged (Gomes et al., 2004; Correia et al., 2011).

3. Data acquisition and preprocessing

3.1 Data source:

The processing data is gathered and combined from variant sources and applied several methods including:

1. Financial data group, we use data from the Report on assessment of the implementation of the autonomy mechanism according to Decree 43/2006 / ND-CP - providing data on the revenue sources and additional income and appropriated funds for hospitals in the period 2012 - 2017.
2. Human resources data groups which are provided by Department of Health, including information about the personnel structure by title, job position and professional qualifications of all hospitals in the period 2012 - 2017.
3. Medical examination and treatment data groups that are provided by the Department of Health, including information on number of hospital beds, and situation of medical examination and treatment in hospitals in the period from 2012 – 2017

3.2 Data preprocessing

Data is combined and preprocessed according to several steps 1) Data scandalizing: different data sources is converted into Data frame structure and stored into MS Excel file. 2) Data combination: Using Python program language to merge all data source into unique data frame for hospital. 3) Noise filter: The data will be filtered and removed incomplete data units, specific units.

As a result: A data frame which describes 24 hospitals in 6 years (144 observations) are gathered and become input for econometric model to identify current situations of hospital in investigation period.

3.3 Model selection and feature selection:

In order to evaluate the effectiveness of hospitals in the city to evaluate the role of autonomy and effectiveness, a data envelopment analysis model (DEA) is selected. In this study, we focus on the effectiveness of two aspects of hospital: 1) Financial efficiency 2) Performance. Furthermore, Due to social policy constraints of hospitals, it is appropriate to assume that scaling efficiency (VRS) is appropriate. After that, the rank and inefficient index are grouped by 2 categories of autonomous hospitals

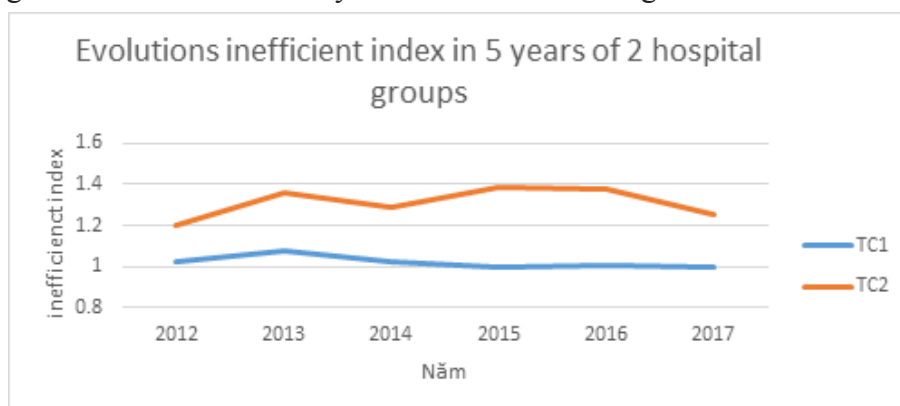
Selected features for each model depend on each model and are extracted from preprocessed data frame. In order to evaluate Financial performance, feature are selected according to Input variables and output variables: Input variables: 1) Expenditure variables (spending on professional expertise, spending on personal payment, and spending on Expenditure for blood, transfusion and medicine payment); 2) Human resources (number of doctors and number of nurse). With the expenditure variables, on the cross-correlation coefficient between the expenditure variables and the correlation between the expenditure variables and the self-control rate, we show that the variable personal payment and professional expenditure have direct influence to the hospital autonomy situation. Output variables: Fee revenue, service revenue, and additional income. Because other sources of income are statistically much smaller than the above sources, they have been eliminated

Efficiency in resource use: Based on previously published studies on resource efficiency in hospitals, we selected input variables including: group of human resource (number of doctors and number of number of nurses) and group of facilities (number of hospital beds). The output group includes number of medical examinations, number of inpatient treatments, and number of outpatient treatments.

4. Result and Discussion

4.1 Result of Financial Efficiency

The changes of Financial Efficiency over time of each categories are show in the line chart



The financial efficiency is shown in Figure 1. In general, the inefficiency index of hospitals with full recurrent expenditure autonomous (TC1) is asymptotic 1. It means that compared to hospital

with partial in recurrent expenditure autonomous (TC2), 100% TC1 hospital are considered to be affective in terms of revenue and income.

Some of the following conclusions about income and income efficiency.

1. In the period 2012 - 2017, most of the TC1 hospitals were recognized as efficient in terms of revenue and income compared to TC2 hospitals.

2. Revenue-efficient hospitals are often hospitals with diversification in revenue structure. Beside to medical examination and treatment, health insurance also develops on-demand medical examination and treatment services and auxiliary services.

3. It is difficult for general hospitals to improve rankings compared to specialty hospitals because of their specificity of expertise

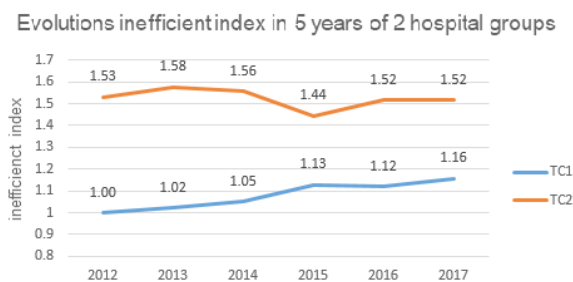
4. As recommended by the model, most of the ineffective hospitals have the opportunity to improve the added income during the year by making the most of the facilities and human resources in the hospital. Special personnel structure is the group of nursing and nursing personnel.

4.2 Resources expenditure Efficiency

DEA model is applied based on input and output resource that is indicated in the previous section. The DEA command is:

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dea yta bs c4 c7= thukephi thudichvu tangthunhap , ort(o) rts(vrs)
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After grouping into 2 hospital categories. The Evolutions inefficient index of resource expenditure of 2 groups in 5 years illustrates in the below line chart.



After analyzing the line chart, the research team find out some conclusions about hospitals in Ho Chi Minh City as follows:

- TC1 hospitals are more resource efficient than TC2 hospitals, most of the TC1 hospitals are in the efficient use group.
- The group of ineffective hospitals is mainly the group of TC2 hospitals, but in 2 years 3, 2015 - 2016, there were also TC 1 hospitals in the group of ineffective operations.
- For ineffective hospital groups, the recommended model should strengthen outpatient treatment activities to increase the diversity of medical examination and treatment types to utilize the hospital's resources.
- In addition, the model also recommends that ineffective hospitals groups also require to change the hospital staff structure in order to improve the quality of human resources.

Conclusion

In our country's economic conditions are still limited, investment resources from the State budget for development of public non-business services are limited, this is unlikely to increase dramatically in the coming time. Therefore, the dramatic implementation of solutions to renovate the operational and financial mechanisms of the SNCL unit combined with the restructuring investment resources from the State budget will contribute to increasing financial resources to invest in the development of quality public non-business services, and associated with fair and efficient goals by the orientation of the Party and State.

In order to effectively implement the innovation requirements, it is necessary to have the active participation of Line Ministries, Localities, and non-business units to create changes in ideology and raise awareness of the community about the need and urgency of renewing the operational mechanism of SNCL units, with aim at providing services to all classes and ensuring social policy beneficiaries, especially, the poor have access to higher basic essential quality services. With determination and with the active participation of the entire political system, the reform of the operating mechanism, the reform of the public financial management mechanism is a breakthrough to implement the national financial strategy, contributing to the sustainable development, ensuring the social security of the country in the future. Completing the legal framework, fundamentally renovating the assignment of budget management according to task performance results; giving comprehensive autonomy to budget-using units and the responsibility for quantity, quality, implementation time; ensuring the roadmap for calculating public non-business service prices in the direction of sufficiently calculating costs; promoting the mechanism of bidding, ordering and assigning tasks; creating a fair and equal competitive environment to attract non-state resources; efficiently renovation of state budget expenditure management. Only when being drastic in implementing and implementing synchronous and powerful solutions, the implementation of public finance reform can achieve the set goals.

SOME ISSUES POSED WITH GREEN ACCOUNTING IN VIETNAM IN THE CONTEXT OF GLOBALIZATION

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Abstract: *Green accounting is considered an important tool related to aspects of the impact of the natural environment on the economy and is seen as a transition towards green economy and sustainable development. This is also a new and long-term approach which is consistent with the general development trend in the world. This new accounting method promises to bring many great benefits for businesses by contributing to providing accurate, transparent, complete and accountable information, thereby helping to improve the company's image with regulatory agencies, shareholders, investors, and business partners. However, green accounting is still a relatively new problem for Vietnamese businesses and regulatory agencies. The article aims to clarify the role and the current situation of green accounting application in Vietnamese enterprises, thereby offering solutions to promote the application of this type of accounting in Vietnamese enterprises.*

Keywords: *enterprises, environmental accounting, green accounting, globalization*

1. Introduction

The current situation shows that many environmental products or services have not been properly assessed and fully accounted into the accounting system, especially the cost of treating environmental pollution. This is very easy to make mistakes in the management and planning. Therefore, green accounting and environmental accounting are indispensable tools in businesses, helping managers control costs and choose the optimal business plan to suit economic and environmental conditions.

Green accounting is a very useful method for businesses to develop sustainably. This accounting method can be applied on many kinds of businesses from small to large scale enterprises. Around the world, many countries and companies have gained a lot of success from the adoption of green accounting.

For Vietnam, green accounting is still a quite new issue with a few studies focusing on the implications of this type of accounting; however, there are very few studies associated with a specific enterprise to point out the conditions and barriers to applying green accounting, and propose solutions for the State, enterprises and stakeholders. Therefore, this article aims to fill the previous research gaps in the direction of further analyzing the current state of green accounting practices in enterprises, and give a number of recommendations to promote the implementation of green accounting through systematizing the basic theory of green accounting and the problems posed with the application of green accounting in Vietnamese enterprises nowadays.

2. Literature review and research methods

2.1. Literature review

i. Foreign literature review

Green accounting has been a relatively common problem for the past two decades around the world, being studied in a diverse range of both methodologies as well as research aspects (e.g. carbon gas accounting, material flow cost accounting, investment appraisal on the environment).

Currently, there are many studies on green accounting in the world. Asheim (1997) said that it is necessary to establish a green or environmental accounting system to prevent pollution or damage (especially in the face of the fact that the power plant process has an increasing impact on natural resources). Lafontaine (2002) examines environmental aspects in terms of the economy such as the cost of services and products; firms can reduce the consumption of natural resources to save to a greater extent, and address consumers' environmental compliance requirements.

Betianu (2008) said that, in the modern business world, the implementation of green accounting is considered an important factor, contributing to limiting the impact on the environment and economic development in developing countries. This study also forecasts that firms from all business sectors implement green accounting to a certain extent in the coming years... Research by Gary Otte (2008) shows that organizations can have certain internal and external interests by implementing a green accounting system.

Heba YM & Yousuf (2010) examined environmental accounting concepts by exploring techniques for developing environmental reports that allow government to use and hold more firms accountable for their external factors. This study also confirms that, in the coming years, businesses will have to face challenges related to establishing and implementing business strategies related to environmental accounting...

ii. Domestic literature review

Through research and fact finding, Vietnam first issued the Environment Law in 1993 and the revised Law on Environmental Protection in 2005, but has not issued an accounting regime related to environmental accounting in the enterprise. The research and application of green accounting in Vietnam are especially new and are taking initial steps. Therefore, the number of domestic researches on this issue is still very limited. Some studies on green accounting have been published such as:

Duong Thi Thanh Hien (2016) introduced the composition of green accounting content consisting of five basic pillars: i) environmental financial accounting, ii) environmental management accounting, iii) environmental finance, iv) environmental legislation, v) ethics and relationships with the social community, and outlined the model of applying green accounting proposed by the United Nations from the beginning to the time of preparing environmental financial and management reports.

Le Kim Ngoc (2011) has researched the green accounting implications and the direction to build the subject of environmental accounting in the accounting profession training in universities and colleges. Accordingly, training institutions need to add in the enterprise accounting curriculum the content of accounting environmental costs such as environmental costs in the process of

production and business activities, environmental costs before and after the process of production and business activities, environmental management costs, costs for environmental social activities.

Mai Thi Hoang Minh (2016) systematically summarizes research on green accounting in the world with current regulations related to green accounting in Vietnam. Accordingly, the contents of green accounting are studied very extensively around the world with typical works such as Asheim (1997), Gary Otte (2008), United Nations Sustainable Development Committee (UNSND) (2001) ... However, in Vietnam so far, the concept of “green accounting” has not been studied in a systematic and extensive way. In general, the financial regulations, standards, accounting regimes and contract practices have not provided and met the required information on environmental costs required for contract decision making and financial reporting.

2.2. Research methods

i. Data collection method

The paper conducted data collection method on the basis of inheriting reports, documents related to the concept of green accounting such as Asheim (1997), Lafontaine (2002), Betianu (2008) Heba YM & Yousuf (2010).

ii. Data analysis method

- The method of synthesizing and analyzing secondary data about the content and related issues of applying green accounting in Vietnam;

- The method of comparing data related to traditional accounting and green accounting to find out the benefits of implementing green accounting in the enterprise; thereby, proposing solutions for businesses and related groups to improve the efficiency of green accounting application in Vietnam.

3. Research results and discussions

3.1. The necessity of implementing environmental accounting in the operations of enterprises

i. The concept of green accounting

According to S. Sudhamathi, S. Kaliyamoorthy (2014), the main objective of green accounting consists of three basic contents: identifying, collecting, calculating and analyzing materials and materials related to energy; internal reporting and use of environmental cost information; providing information related to other costs in the decision-making process, with the aim of making effective decisions and contributing to environmental protection.

The United Nations has required countries and organizations around the world to implement the environmental accounting system to serve the recording of data related to the business operations of enterprises that impact on the environment. In 2014, the United Nations implemented an application program called “System of Environmental Economic Accounting” (SEEA), also known as Green Accounting.

Meanwhile, Sherine & Jacob & Jolly (2012) argued that the calculation of income and expenses from the environment is not easy due to the fact that these expenses are often hidden or difficult to recognize. In addition, revenues and expenditures will be difficult to measure in terms of data aspects of finance and accounting, because it relates to the future and other intangible factors ...

Thus, green accounting can be defined as an accounting method that tries to include the environmental costs in a firm's financial performance; or it can be understood that green accounting is a modern and comprehensive accounting system composed of five main contents including i), environmental financial accounting, ii) environmental management accounting, iii) environmental finance, iv) environmental legislation, and v) ethics and relationships with social communities to record, synthesize data and prepare reports for an organization to fully reflect the contents of assets, liabilities, investment capital, revenues and expenditures for the green environment of a country (Duong Thi Thanh Hien, 2016).

Green accounting or environmental accounting is a crucial part of green growth, towards the benefit of the whole society, contributing to creating stability and sustainability for environmental resources and social development. The purpose of green accounting is to help businesses understand and manage traditional economic and environmental goals, and then towards sustainable development.

ii. Benefit of green accounting

Environmental pollution, environmental degradation, environmental incidents and adverse changes of nature are affecting human life. In that context, economic development associated with environmental protection (environmental protection) has become the top concern of countries in the world. In order to comply with environmental regulations and demonstrate social responsibility, enterprises must invest in environmental assets, incurring a variety of costs related to environmental protection such as waste treatment, air pollution treatment...

In the production process, there are unexpected risks affecting the environment (causing environmental pollution), causing enterprises to face many arising compensations, increasing costs, affecting contingent liabilities, thereby affecting stock prices and shareholders' benefits.

The above fact requires business managers to have accounting information about environmental protection activities arising in the business, in order to manage the business performance. Environmental accounting is an essential tool not only to help businesses meet environmental protection requirements, but also improve business efficiency and competitiveness in the current international integration context.

Green accounting not only brings many benefits for the business itself, but also contributes to environmental protection for society, helping the economy to develop green and sustainable. Specifically:

Firstly, reducing financial costs for enterprises

Experience in developed countries shows that, if enterprises do not use environmental accounting, fines for polluting the environment are not considered as reasonable costs, leading to a decrease in the profitability of the business.

Additionally, if businesses accept to spend money on research on production combined with sustainable development with the environment, it can create greater value (especially intangible values such as the trust of partners and customers). This means that the costs of being punished for causing environmental pollution of the business will be reduced, while the business also reduces another expense when offering environmentally friendly solutions...

Secondly, contributing to cost management, increasing profits towards sustainable development goals

The application of green accounting, especially environmental accounting, contributes to providing accurate, transparent, complete and accountable information about corporate profits, revenue and environmental costs, thereby helping to improve the corporate image in the eyes of regulators, shareholders, investors and business partners. In fact, the application of green accounting demonstrates corporate social responsibility and business ethics, thereby satisfying and reinforcing the trust of stakeholders. If the green accounting is implemented well, the consumption of raw materials, energy, and labor in the process of creating pollution will be limited, increasing the efficiency of resource use, and increasing competitive advantage by reducing production costs.

The good implementation of environmental accounting helps managers make important decisions such as reducing production costs, increasing productivity, investing in machinery and equipment for better, cleaner production, to produce quality products, limiting input factors such as raw materials, energy, and labor consumed in the pollution generation process, increasing efficiency of resource use, increasing competitive advantage by reducing production costs. This helps businesses gain competitive advantages in terms of selling price and higher profit, especially minimizing legal problems (fines, cost of remedial risks...).

Thirdly, creating a firm step for enterprises in the process of economic integration.

According to economic experts, enterprises with good attitude and behavior to the environment will have a great advantage in the development process, improving their positions in domestic and global markets, helping them integrate into the international market more easily.

The good application of environmental accounting to the business will satisfy and reinforce trust with stakeholders. State management agencies and environmental organizations are always concerned about economic development going hand in hand with environmental protection. If environmental protection is done well, it can help enterprises get incentives from these units.

Fourthly, overcoming the limitations of traditional accounting

Unlike traditional accounting, environmental accounting, which is an important content of green accounting, pays clear attention to the environmental impact of business activities, thereby significantly influencing the decisions of external users of accounting information such as customers, investors, state management agencies, citizens... Meanwhile, traditional accounting still has limitations, not to mention the costs related to the environment.

It is difficult for managers to obtain information about environmental costs when needed. In addition, the use of the overhead cost account for environmental costs often leads to confusion when these costs are reallocated back into the product cost at the production stages based on product volumes or working hours... This approach can lead to mistakes when not correctly allocating some types of environmental costs (Huynh Thanh Thuy, 2017).

3.2. Some problems posed with the implementation of green accounting in Vietnam

In the past time, the issue of environmental protection and sustainable development has also been paid attention and implemented by Vietnam. Specifically, the National Assembly enacted the Environment Law for the first time in 1993 and the revised Law on Environmental Protection in 2005.

Then, on November 15, 2010, the Law on Environmental Protection Tax (Law No. 57/2010 / QH12) was passed by the National Assembly at the 8th session of the XIIth National Assembly. On that basis, on August 8, 2011, the Government issued Decree 67/2011 / ND-CP providing for environmental protection taxable subjects, tax bases, tax declaration, tax calculation, tax payment and tax refund.

The Ministry of Finance issued Circular 152/2011 / TT-BTC (11/11/2011) guiding the implementation of Decree 67/2011 / ND-CP. On September 28, 2012, the Ministry of Finance issued Circular 159/2012 / TT-BTC amending and supplementing Circular 152/2011 / TT-BTC; Circular 156/2013 / TT-BTC (dated November 6, 2013) guiding the implementation of a number of articles of the Law on Tax Administration, the Law amending and supplementing a number of articles of the Law on Tax Administration and Decree 83/2013 / ND-CP dated July 22, 2013 of the Government.

Especially, in the new context of globalization, when commitments on environmental protection are getting more and more attention in the new generation of trade liberalization agreements such as CPTPP or EVFTA ..., many large businesses are also starting to pay attention to sustainable development, while taking activities to protect the environment. However, through the fact of research and survey data from 2011 up to now, in the whole country, there are 50 enterprises that have started to apply environmental accounting in enterprises such as cement production companies, garment manufacturing company. The enterprise survey results show that:

Firstly, in terms of the managers and enterprises' awareness related to environmental protection and green accounting

Applying green accounting in general and environmental accounting in particular is a long-term process, requiring careful implementation, research and investment to create sustainable growth. Thus, there should be a clear awareness of the management agencies and enterprises about the role and importance of green accounting in general and environmental accounting in particular to promote the application process of this form of accounting.

i. With management agency

Recognizing environmental protection issues in the context of international economic integration and sustainable development, Vietnam has also issued legal documents related to environmental protection. Specifically, the National Assembly promulgated the Environment Law for the first time in 1993, the Law on Environmental Protection amended in 2005, the Law on Environmental Protection Tax (Law No. 57/2010 / QH12).

The Government promulgated Decree No. 67/2011 / ND-CP dated August 8, 2011 on environmental protection taxable objects, tax bases, tax declaration, tax calculation, tax payment and tax refund; The Ministry of Finance issued Circular No. 152/2011 / TT-BTC dated 11/11/2011 guiding the implementation of Decree 67/2011 / ND-CP; Circular No. 159/2012 / TT-BTC dated September 28, 2012, amending and supplementing Circular No. 152/2011 / TT-BTC ...

However, Vietnam has not yet issued an accounting regime related to environmental accounting in enterprises. The current accounting regimes do not have documents guiding enterprises in separating and monitoring production and business costs, and there are no appropriate accounts to reflect environmental costs...

ii. With enterprises

During the development process, many Vietnamese businesses have identified the right direction, produced products that meet customers' trust in quality, gradually improving the criteria of being friendly with the environment and users. Many businesses have set and implemented measures to prevent pollution such as equipping a large-capacity vacuum system, attaching importance to industrial hygiene in and outside the production area. For all types of solid waste, businesses often contract with the urban environment company to collect every day to avoid pollution.

For wastewater, businesses often invest in wastewater treatment systems. In addition, many businesses also organize planting and planning a green tree belt to contribute to clean the environment. Thus, it can be said that businesses have been paying attention to environmental protection by investing in pollution treatment equipment and machinery, demonstrating their responsibility for the environment and high society.

However, in the accounting work, most businesses do not have the proper attention and monitoring. Most businesses do not arrange a full-time accountant to calculate environmental costs and benefits and still maintain the traditional accounting system, and has not yet integrated the information of environmental accounting into the general accounting system. A lot of costs related to the environment are recorded in general administrative expense accounts, making it difficult for managers to detect the scale and nature of the environmental costs in general and each environmental cost in particular.

Secondly, in terms of collecting environmental cost and benefit information

Vietnam has not established a national environmental database (water resources, minerals, forests; waste treatment technologies; environmental standards sets in each sector, field ...) as a basis for the accounting process ... The currently applied accounting system of accounts, books and vouchers is not eligible for enterprises to perform environmental accounting without recording environmental information separately. The accounting department of the business also does not have separate environmental accountants. Currently, there is not any guidance on environmental accounting.

In addition, businesses use traditional models in collecting information on environmental costs and benefits. This information is mainly presented in monetary form. The environmental costs, according to the enterprise's concept, often assume that the environmental costs are small and insignificant. Some of the clearly visible cost items related to environmental factors are accounted for in a separate category, while other environmental costs are often hidden or included in the production overhead expense or administrative expense. These costs are usually allocated to products and services completed in the period according to the actual production completed volume. The method used to allocate costs is the traditional method with a single allocation criterion, usually direct raw material cost, main material cost or labor cost.

Thirdly, in terms of environmental costs and benefits identification

The current accounting regime's guidance requires Vietnamese enterprises to classify costs and benefits of business activities according to the management requirements of financial accounting. Most enterprises conduct cost classification in two common ways: cost classification by cost factors or cost classification according to cost item.

Thus, businesses often do not monitor separately the content of environmental benefits along with environmental costs. In the opinion of these enterprises, it is often not necessary to separate the environmental costs from the costs of production and business because those costs are to serve their own production and management activities. Therefore, the actual environmental costs that are actually incurred are usually classified into one of the above cost items such as production overheads, corporate management costs (according to the category of costs by item cost calculation), is the depreciation cost of fixed assets, the cost of services purchased from outside or other monetary costs (according to the factor cost classification).

4. Conclusions and Policy Implications

Green accounting or environmental accounting is a part of Green Growth that aims to whole society, contributes to creating stability for environmental resources and social development. Applying green accounting in general and environmental accounting in particular is a long-term process, requiring careful implementation, research and investment to create sustainable growth.

In the context that Vietnam is stepping up the growth model transformation towards the development of a green economy, the application of green accounting and environmental accounting to Vietnamese accounting is very necessary, playing an important role in the sustainable development of businesses in particular and the economy in general. In order to step by step make environmental accounting more and more popular in business operations, in the coming time, it is necessary to pay attention to the following contents:

4.1. For enterprises

Firstly, change awareness of the application of green accounting in production and business activities. In fact, enterprises themselves are not aware of the meaning and benefits of environmental protection in general and the application of green accounting in particular.

The majority of enterprises in Vietnam have not yet carried out the calculation of environmental costs. In addition, many business executives are not aware that the costs spent to calculate the environmental costs are much smaller than the total costs incurred when they have to pay taxes, fees or fines from acts of harming the environment.

Secondly, pay attention to the construction and development of qualified human resources. Currently, because green accounting is not popular in businesses, so the accounting department of the business has almost no accounting staff with knowledge of environmental accounting or specialized environmental accountants. Therefore, in the coming time, businesses need to pay attention to finding, training and building qualified and experienced accounting departments in green accounting ...

To effectively implement environmental accounting activities, businesses need to change their perception and social responsibility for environmental issues. The administrators need to regularly pay attention to updating and implementing environmental accounting in enterprises, especially manufacturing enterprises. At the same time, to attach importance to investing financial resources and human resources in the accounting apparatus, including environmental accounting.

In addition, international experience shows that environmental accounting is often applied to large-scale enterprises with abundant financial resources and strict operating policies. In the

first phase, environmental accounting should be tested in one line or department before applying it to the entire enterprise to suit its operating conditions. Enterprises should develop a long-term business strategy that takes into account the impacts of your products' environmental

4.2. For stakeholders

i. State management agencies

The State should continue to supplement and perfect the legal system related to green accounting. Currently, the applied accounting system does not have enough conditions for businesses to perform environmental accounting. Accounting systems of accounts, books and vouchers do not record environmental information separately.

Significant costs related to the environment, such as repair, compensation, troubleshooting costs and costs for cleaning and handling accidents and destruction, have not been recorded on accounting accounts. ecological environment, living environment. In fact, so far, the factors of "environmental" cost and the income from "environment" are not in any account, and any separate and specific item of accounting.

Many of the costs related to the environment are generally reflected in the administrative expense accounts; the economic managers cannot detect nor see the scale and nature of environmental costs in general and each specific environmental cost in particular. With the policy of sustainable development and "greening the economy" of the Party and State, regulations on green accounting should continue to be added and completed in the coming time.

At the same time, the Government also needs to coordinate with professional associations to promulgate environmental accounting standards, specifying the environmental information presented in the report provided outside the business, to ensure a uniform environmental management. These standards need to study the experience of developed countries that have effectively applied environmental accounting such as the United States, Japan ... in order to approach international standards.

An indicator system in environmental reporting is built on scientific basis, complying with international standards, taking into account the specific conditions of domestic enterprises will be an effective tool for environmental management, creating a level playing field for enterprises to well implement environmental protection activities.

In addition, it is necessary to strengthen sanctions, well implement environmental tax and fee policies for businesses, thereby helping businesses increase their awareness as well as fulfill their responsibility to the environment and protect the environment. On the contrary, there is also a regime of remuneration, encouragement and praise for enterprises to perform their social responsibilities well, thereby propagating widely about the application of green accounting in practical activities.

ii. Professional associations and business associations

It is necessary to raise the awareness and qualifications of managers in enterprises on environmental accounting, raise environmental awareness for enterprises through strengthening communication about the role and importance of environmental accounting, and organize short-term training courses for businesses on environmental protection, environmental accounting.

As environmental accounting is a new field in Vietnam, it is essential to understand the nature, benefits and role of environmental accounting in the sustainable development of society in general and enterprises in particular, study and survey international experience on environmental accounting standards in order to propose authorities to complete and supplement this content.

iii. Education and training institutes

Universities and colleges in the economic sector need to promote the integration of environmental accounting, environmental management accounting into the vocational education system. In addition, training institutions should continue to supplement, revise and update to improve the quality of the curriculum on environmental accounting, in which it is necessary to attach to the new contents related to the new guidelines of the Party and the State on sustainable green development, environmental protection tax...

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EFFICIENTCY OF AUDIT COMMITTEE AFFECTING ON EARNINGS MANAGEMENT AT LISTED COMPANIES IN VIET NAM

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Abstract: *This study examines the effectiveness of some audit committee (AC) characteristics to monitor management behavior with the respect to their incentives to earnings management. Vietnamese listed companies for year 2015 to 2018 have been investigated to analyze the relationship between AC characteristics and earnings management (EM). The AC characteristics examined are AC independence, AC size, AC meeting and AC financial expertise. Regression model estimates least squares is used to examine the relationship between earnings management as dependent variable and AC characteristics independent variables. The result show that discretionary accruals as a proxy for EM is negatively associated with AC size, AC financial expertise. However, the results do not show a significant relationship between AC independence, AC meeting and EM. This study extends the literature on the monitoring function of the AC on EM, and contributes geographically to the financial reporting process and EM literatures by analyzing data from an emerging market and providing useful information for the corporations, accounting profession and the regulators on the effective practice of ACs.*

Keywords: *Audit committee, Earnings Management, VietNam.*

JEL Code: M42

1. Introduction

Corporate scandals such as Enron, WorldCom, Xerox and similar others, emphasize on the effectiveness of corporate governance mechanisms in monitoring the financial reporting process. AC is considered as one of the crucial and influential participants of corporate governance as it assists the board of directors in discharging its responsibilities in overseeing corporate management (Bédard and Gendron, 2010; Li et al., 2012). An AC is a sub-committee of the board that specializes in, and is responsible for, ensuring the accuracy and reliability of the financial statements provided by management. Indeed, much of the blame and criticism for accounting irregularities is aimed at ACs for not fulfilling their financial reporting oversight duties due to independence issues (Pergola, 2005). The effectiveness of ACs has been a subject of increasing interests due to increased concerns about the quality of corporate financial reporting process caused by recent accounting scandals. Therefore, the Sarbanes-Oxley Act (2002) in the U.S. mandates the role of the AC and strengthens its composition to oversee the financial reporting process.

Managers are using earnings management to maximize company's interest or to maximize their own interest. A frequently used description of earnings management is given by Healy and Wahlen (1999) "Earnings management occurs when managers use judgment in financial

reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers". Since earnings management is inherently unobservable, most studies used measures of accruals as proxies for earnings management. The central objective of Corporate Governance Codes (CGC) is to restore the reliability of financial statements by curbing earnings management and accounting fraud (Cohen et al, 2008). Therefore, on the process to restore the confidence to the investors, different laws and codes were put in place, for example, Sarbanes – Oxley Act (2002) in US and Corporate Governance Codes by many countries. In VietNam Corporate Governance Mechanism has been effective on 17th September 2012 issued in accordance with Circular 121 and replaced by Degree 71 effective on 1st August 2017. All VietNam listed companies to which this Code applies should be full compliance by the end of 2014. The VietNam CGC stated that, the AC is established with at least three members of which the majority should be independent including the chairman. The AC shall review the company's accounting and financial practices, review the integrity of the company's financial and internal controls and financial statement, review the company's compliance with legal requirements, and recommend the appointment, compensation and oversight of the company's outside auditor. Also, the Corporate Governance recommends a majority of the AC member should have the financial – accounting literacy qualifications.

There has been growing recognition in recent years of the importance of AC in enhancing financial reporting quality. However, the relationship between AC characteristics and earnings management, has not been paid attention. Given the importance of AC characteristics in enhancing the quality of financial reporting in the region, this study focuses on one of the developing countries, namely VietNam to offer a good opportunity and provides a useful setting for examining the association between ACs and earnings management. Therefore, this study extends the literature on the monitoring function of the AC on earnings management, and contributes geographically to the financial reporting process and earnings management literatures by analyzing data from an emerging market and providing useful information for the corporations, researchers, accounting profession and the regulators on the effective practice of ACs. The main purpose of this study is to examine the relationship between AC characteristics and discretionary accruals as proxy for earnings management in listed companies in VietNam.

2. Literature Review and Hypotheses Development

2.1. Literature Review

Managers are using earnings management to maximize company's interest (shareholders interest) or to maximize their own interest, this causes an agency problem. However, both have different interests and this leads to conflicts (Jensen, 2005 and Leuz et al., 2003). Fama and Jensen (1983) have argued that outside directors with directorships are perceived to be valuable because they are concerned about their reputation damage, litigation risks and possible loss of future board opportunities and therefore will be motivated to perform their monitoring role effectively. Laing and Weir (1999) have argued that the AC is responsible for the external auditing of the firm financial statements. Due to the existence of remuneration and ACs monitor of board performance, it is expected that board will be motivated to improve performance, and investors will gain more confidence in the value of firm's financial statement.

Researchers have identified the role of the AC as being critical in ensuring credibility of the financial statement (e. g. Fama and Jensen, 1983, Abbott , et al., 2000). Therefore, the AC is viewed as a monitoring mechanism intended to reduce information asymmetries between management and stakeholders, since its key functions are to improve the quality and accuracy of financial information through constantly monitoring the management's opportunistic behaviours (e.g., Klein, 2002; Davidson et al., 2005; Dhaliwal et al., 2010; Li et al., 2012). The effectiveness of ACs has been a subject of increasing interests due to increased concerns about the quality of corporate financial reporting process caused by accounting scandals. Dechow and Skinner (2000) note that the border between earnings management and accrual accounting has become ambiguous. It deals with managers choosing accounting policies and accruals, most likely for personal gain. Therefore, managers can opportunistically manipulate accounting reports by managing accruals. However, Kaplan (1985) state that "normal" accruals arising in the ordinary course of business are unlikely to reflect managerial opportunistic behavior. Any manipulation of accounting information will most likely be apparent in "abnormal" accruals.

Literature on AC has suggested that AC effectiveness essentially functions on AC characteristics (Persons, 2009; Dhaliwal et al, 2010; Li et al, 2012). Therefore, the perfect AC size with the right combination of skills and experience are critical in supporting the AC's ability in detecting and preventing earnings management. Several research studies have investigated the relation between AC characteristics and discretionary accruals as a proxy for earnings management. For example, Xie *et al.* (2003) found that accrual-based earnings management is less likely to occur or is less prevalent in the companies whose ACs include greater proportion of independent members with corporate or investment banking background. Previous studies suggested that firms with the higher number of AC meetings experience are less likely to be sanctioned for fraud as well as aggressive accounting (Abbott et al., 2000). Prior research provides evidence suggesting that AC size and the financial expertise of AC members can have a significant effect on the monitoring of earnings management, the empirical evidence also supports the advantages of including independent directors on the AC (Klein, 2002).

2.2. Hypotheses

Audit Committee Size

Menon and Williams (1994) argued that an AC with less than three members is likely to be ineffective. According to Abbott et al. (2004) and Xie et al. (2003) the perfect average of the AC size is between 3 and 4 members. Vafeas (2005) argued that, if the AC size is too small then an insufficient number of directors to serve the committee in occurring and thus decrease its monitoring effectiveness. This perhaps because small committee is not capable of fulfilling its duties efficiently, and when a committee size is too large, the directors' performance may decline because of the coordination and process problems and hence highlight another reason for weak monitoring (Jensen, 1993; Vafeas, 2005).

The literature suggested that the firms with large AC are more effective in monitoring the management, and it may play a crucial role in constraining the occurrence of earnings

management. For example, Yang and Krishnan (2005), Lin et al (2006), Lin and Hwang (2010) found a negative association between the size of ACs and earnings management. However, Xie et al (2003), Bédard et al (2004), Abbott et al (2004), Soliman and Ragab (2014) found no significant relationship between audit committees size and the level of earnings management. Despite the inconsistent findings in the literature reported above, this study proposes a negative association between the size of the AC and earnings management.

H₁: The audit committee size is negatively associated with earning management

Audit committee expertise

The Sarbanes – Oxley Act of (2002) mandates that at least one member of the AC must be a financial expert. It is generally agreed that the key duty of the AC is to review the financial reporting process to ensure the best quality of financial reports, thus the availability of an accounting and financial expertise in the AC would enhance its efficiency and its ability in detecting and preventing earnings management. The literature shows that the effectiveness of the AC is enhanced through the presence of financial experts on the committee (Dhaliwal et al, 2010). The findings of the most of prior reserches such as Xie et al (2003), Bédard et al (2004), Soliman and Ragab (2014). Abbott et al (2004) found a significantly negative association between an AC having at least one member with financial expertise and the incidence of financial restatement, and they found that the financial expertise of the AC is related with a higher financial reporting quality. According to literature, this study proposes a negative associated between the expertise of the AC and earnings management.

H₂: The audit committee expertise is negatively associated with earning management.

Audit Committee Independence

The Sarbanes-Oxley Act of (2002) emphasizes the importance of the independence of the AC for effective monitoring of financial reporting, and requires all AC members to be independent. Klein, (2002) argues that AC independence influences the effectiveness of the committee in monitoring financial reporting. Prior literature argues that less financial misstatements are associated with more independent audit committees (e.g. Abbott et al. 2000). Also, prior literature suggested that a fully independent AC would be better able to protect shareholders' interests and fulfill its monitoring role because of its ability to view issues objectively (e.g., Bédard et al., 2004; Abbott, et al. 2004; Yang and Krishnan, 2005).

The literature provides mixed results on the association between AC independence and the levels of earnings managemet. For example, Klein (2002), Xie et al (2003), Davidson et al (2005), Lin and Hwang (2010) and Soliman and Ragab (2014) reported a negative association between ACs' independence and earnings management practices. Bédard et al (2004) found that aggressive earnings management is negatively associated with fully independent ACs. Abbott et al (2004) fond that there is a negative association between AC independence and financial reporting fraud and misstatement. However, Lin et al (2006), Sirega and Utama (2008) Wareru and Rio (2013) found an insignificant relationship between ACs' independence and earnings management.

Regulations, agency theory, and the governance literature suggest a negative association between the independence of the AC and earnings management. Therefore, and despite the

inconsistent findings in the literature reported above, this study proposes a negative association between the independence of the AC and earnings management.

H₃: The audit committee independence is negatively associated with earning management

Audit Committee Meetings

Lin and Hwang (2010) suggest that, an important objective of the AC is to provide its members with sufficient time to perform their duties of monitoring their firm's financial reporting process. Karamanou and Vafeas (2005) suggest that, AC that meets more frequently is more likely to effectively accomplish its monitoring role. Li et al. (2012) suggest that, an active AC that meets frequently during the year, would provide its members with greater opportunities for discussing and evaluating the issues placed before them concerning the company's financial reporting practices. Xie et al., (2003) suggest that, ACs that meet regularly during the financial year are associated with effective monitoring.

The literature provides mixed results on the association between AC meetings and earnings management. For example, Abbott et al (200) found a negative association between meeting frequency and the occurrence of fraudulent financial reporting. Abbott et al (2004) found ACs that meet at least four times per year demonstrate a significant and negative association with the occurrence of financial reporting restatements. Also, Xie et al (2003), Soliman and Ragab (2014) indicate a significant negative association between AC meetings and earnings management practices. However, Bédard et al (2004) Davidson et al (2005) and Lin et al (2006) found no significant relationship between ACs meetings and the level of earnings management. Despite the inconsistent finding in the literature reported above, this study proposes a negative association between the frequency of AC meetings and earnings management.

H₄: The frequency of audit committee meetings is negatively associated with earning management

3. Methodology

3.1. Study Sample, Data Collection and Data Analysis

The sample is expected to be 745 listed companies on HOSE and HNX in the period of 2015-2018. After excluding companies operating in banking, insurance, real estate, investment funds, securities companies and companies having enough information about AC characteristics, the final sample used in this study includes 216 listed companies from 2015 to 2018 with the total observation of 864. Although data on vietstock.vn site may be collected at any stage; however, in 2015, corporate governance regulations should be applicable to listed companies. Therefore, from 2015, information about listed companies on audit committee is relatively adequate and listed companies also have to apply corporate governance regulations to their companies so this is the most appropriate time to collect data for research. The last point during the study period is 2018 because this is the last fiscal year published by listed companies at the time of the study.

3.2. The Dependent Variable (Earnings Management)

Most of the previous studies used various measures of discretionary accruals as proxies for earnings management. The most popular measures to calculate discretionary accruals are the Jones

and modified – Jones (Dechow et al, 1995; Beniesh and Press, 1998). However, based on prior literatures, it was observed that the modified – Jones model is the most famous and the most frequently used model to detecting discretionary accruals. Thus, it was adopted in this study to estimate discretionary accruals, which is specified as follows:

$$\frac{TA_{it}}{A_{it-1}} = \alpha_i \left[\frac{1}{A_{it-1}} \right] + \beta_{1i} \left[\frac{\Delta REV_{it} - \Delta AR_{it}}{A_{it-1}} \right] + \beta_{2i} \left[\frac{PPE_{it}}{A_{it-1}} \right] + \epsilon_{it} \quad (1)$$

Where:

TA_{it} = total accruals for firm i in the current year t ;

A_{it-1} : total assets for firm i at the end of the previous year;

ΔREV_{it} : The change in receivables for firm i between the current year and previous year;

ΔAR_{it} : The change in revenue for firm i between the current year and previous year;

PPE_{it} : gross property, plant and equipment for firm i in the current year.

Using the cash flow approach (Hribar and Collins, 2002), total accruals (TA) are calculated as the difference between operating income (OI) obtained from the income statement and operating cash flows (OCF) obtained from the statement of cash flows.

$$TA_{it} = OI_{it} - OCF_{it} \quad (2)$$

The predicted values from equation (1) are non-discretionary accruals (NDAC), and the difference between actual total accruals (TAC) and (NDAC) is discretionary accruals (DAC). Discretionary accruals (DA) = $TA_{it} - NDA_{it}$

3.3. Measurement of the Independent Variables and control Variables

Consistent with prior research, the four AC variables and three control variables are identified and measured as shown in table 1

The control variables are selected based on prior studies. This study includes three variables to control for other factors influencing earnings management. Previous studies found a negative relation between company size and EM (Xie et al, 2003). Also, this study control for leverage and proposes a negative association between leverage and EM, it is expected that companies that have high leverage being able likelihood decreasing EM (Bédard et al, 2004). Moreover, this study uses operating cash flow for control variable because lots of research like Moradi et al (2012), Peasnell et al (2005), Bowen et al. (2008) argued that cash flow from operating limited the behavior of earnings management and in this study, CFO can limit earnings management behavior, measured by CFO/ total assets.

Table 1: Variables Definitions and Measurements

Variables	Definitions and Measurements
Dependent variable	
EM	Earnings management, measured by discretionary accruals as a proxy (DA)
Independent variables	

ACIND	Audit committee independence, the number of independent directors on the audit committee;
ACSIZE	Audit committee size, number of members on the audit committee;
ACEXP	Audit committee financial experts, the number of audit committee members having expertise in accounting or financial management
ACMEET	Audit committee meetings, number of audit committee meeting held during the fiscal year.

Control Variables

SIZE	Company size, the companies' natural log of total assets;
LEV	Leverage, measured as the ratio of the companies' total liabilities to the companies' total assets.
OCF	Operating cash Flow, measured as the ratio of the companies' operating cash flow to the companies' total assets

3.4. Regression Model Development

$$EM = \beta_0 + \beta_1 ACIND + \beta_2 ACSIZE + \beta_3 ACMEET + \beta_4 ACEXP + \beta_5 SIZE + \beta_6 LEV + \beta_7 OCF + \epsilon$$

Where:

EM: Earning Management

ACIND, ACSIZE, ACMEET, ACEXP: the independent variables of the ACs

SIZE, LEV, OCF: control variables

ϵ : error term

4. Result

The descriptive statistical test results of all variables for the sample of companies are presented in Table 2, the results show that, the average earnings management (EM) is -0.00026. The number of independent audit committee (ACIND) is 2.604.167 with a minimum value of 1 and a maximum of 5. The average number of members on the audit committee (ACSIZE) is 3.15 with a minimum of 2 and maximum of 5 members. The average number of AC meetings held during the fiscal year (ACMEET) 3.21 with a minimum of 1 and maximum of 9 meetings and AC expertise is with a minimum of 0 and maximum of 3.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
DA	864	-0.00026	0.124567	-0.5922756	0.621249
ACSIZE	864	3.159722	0.54247	2	5
ACIND	864	2.604167	0.730581	1	5
ACEXP	862	0.945476	0.836478	0	3
ACMEET	864	3.216435	1.231362	1	9
SIZE	864	11.8991	0.616884	10.26529	13.52149
LEV	864	0.464309	0.214509	0.0472276	0.966925
OCF	864	0.092547	0.136652	-0.3902872	1.189263

The Pearson correlation coefficients between dependent and independent variables are presented in table 3. The results shown in table indicate that the variables in the regression model have no correlation intact (correlation coefficient <0.8) and not multi – collinear phenomenon ($vif <10$)

Table 3: Pearson Correlations and VIF Values

	DA	ACSIZE	ACIND	ACEXP	ACMEET	SIZE	LEV	OCF	VIF
DA	1								
ACSIZE	-0.0843	1							1.27
ACIND	-0.0177	0.204	1						1.09
ACEXP	-0.0546	0.1241	0.1621	1					1.13
ACMEET	-0.0688	-0.1605	-0.0962	-0.1565	1				1.13
SIZE	0.0554	0.3756	0.0146	0.2271	0.046	1			1.29
LEV	-0.0573	0.1437	-0.0687	0.0016	-0.144	0.1975	1		1.13
OCF	-0.7645	0.0426	0.0145	0.0137	0.169	0.0154	-0.2068	1	1.08
MEAN VIF									1.16

Source: author handling via software Stata 12.

In addition, to base on the regression model to argue, the study conducted to test the variance change and the phenomenon of autocorrelation. Research using two White tests and Woolridge testing with $Prob > \chi^2 = 0.8024$ results and $Prob > F = 0.5711$ are greater than the 5% significance level, meaning the model has constant and non-existent variance at the phenomenon of autocorrelation.

Finally, after implementing F tests, LM tests, the POLS model is the best estimation model with the results shown in Table 4

Table 4: Estimating regression using POLS, FEM, REM

DA	POLS		FEM		REM	
	Coef.	Prob	Coef.	Prob	Coef.	Prob
ACSIZE	-0.01393	0.008***	-0.01423	0.007***	-0.01438	0.008***
ACIND	-0.00303	0.398	-0.00289	0.419	-0.00301	0.432
ACEXP	-0.007781	0.014**	-0.007801	0.014**	-0.007197	0.033**
ACMEET	0.002627	0.228	0.002585	0.233	0.002698	0.23
SIZE	0.025312	0.000***	0.02534	0.000***	0.026822	0.000***
LEV	-0.13947	0.000***	-0.13879	0.000***	-0.14022	0.000***
OCF	-0.74635	0.000***	-0.7452	0.000***	-0.75993	0.000***
_cons	-0.1315	0.01**	-0.13153	0.01**	-0.14618	0.008***
R-Squared	R- squared = 0.6528		within: 0.6531		within: 0.7100	
	Adj R-squared: 0.65		between: 0.7894		between: 0.4889	
			overall: 0.6529		overall: 0.6528	
	F(7, 854): 229.42		F(7, 851): 228.9		wakt $\chi^2(7)$: 1705.97	
	Prob>F: 0.000		Prob>F: 0.000		Prob> χ^2 : 0.000	
F test that all $u_i=0$: F(3, 851) = 1.48 Prob > F = 0.2189						
LM Test: Var(u) = 0, Chibar2(01) = 0; Prob>F: 1.0000						

With: **, *** at 5% significance level; and 1%; Dependent variable is DA according to Dechow et al model (1995)

Source: author handling via software Stata 12

With the regression results in Table 4 shows: Independent variables and control variables explain 65% variation of DA variable, meaning that the change of the earnings management level is explained by 65% of changes of independent variables and variables control. Simultaneously with the coefficient $\text{Prob} > F = 0.000$ means the model is reliable enough to estimate and argue the results.

The results in table 4 indicate a significant negative association at the 1% level between discretionary accruals as a proxy for EM and ACSIZE. This finding supports Hypothesis 1, and suggests that, higher ACSIZE is associated with a significant decrease in earnings management among Vietnam listed companies. Also, the descriptive statistical test results in table 2 revealed a perfect average ACSIZE (3.159) among VietNam listed companies. This results confirms the assumption that the perfect average of the ACSIZE is between 3 and 4 members (Abbot et al, 2004; Xie et al, 2003) and it confirms the assumption that small committee is not capable of fulfilling its duties efficiently as the given assignments is always increasing. Empirical research generally supports these claims and assumptions. ACSIZE is found to be negatively associated with earnings management (e.g. Yang and Krishnan, 2005; Lin et al, 2009; Lin and Hwang, 2010).

The results in Table 4 also show that there is a significant negative association at the 5% level between earnings management and AC financial experts. This finding does supports Hypothesis 2 when given that higher level of AC financial expertise is associated with a significant decrease in earnings management among VietNam listed companies. Empirical research generally supports these arguments and suggestions. AC financial expertise is found to be associated with a significant decrease in earnings management such as: Xie et al (2003); Abbott et al (2004); Bédard et al (2004); Lin et al (2009); Soliman and Ragab (2014).

AC independence and AC meetings variables can play active role in reducing earnings management. However, the results of the regression model show that neither variable has a significant association with the level of earnings management. Accordingly, the third and the last hypotheses are rejected. This finding is consistent with Lin et al. (2006) and Waweru and Riro (2013) who found that independence of the audit committee is not significantly associated with earnings management, also this finding is consistent with Bédard et al., (2004), Davidson et al. (2005), and Lin et al., (2009), who found that number of AC meeting is not significantly associated with earnings management.

With regards to the control variables, the results show a negative relationship between earnings management and leverage, operating cash flow as a control variables are associated with earnings management at 1% level. These results may suggest that levels of financial leverage and OCF are likely tend to decrease earnings management practices. However, the results of the regression model show that there is a significant positive association at the 1% level between earnings management and company size. This result suggests that large firms have a higher level of earnings management and that large firms are more capable of earnings management, similar to some researchs like Xie et al (2003), Alves (2013), Soliman and Ragab (2014).

5. Conclusion

Recent corporate scandals put the spotlight on the effectiveness of AC in detecting material misstatements thus reducing the likelihood of earnings management. This study provides the first evidence on the relation between ACs and earnings management in VietNam listed companies.

Specifically, the study examines the association between earnings management and the following AC characteristics: size of the AC, independence of the AC, frequency of the AC meetings, and expertise of the AC. To achieve the objectives of this study, the annual reports of VietNam listed companies for the period 2015 – 2018 were analyzed.

The results of the regression model show that, there is a significant negative association between discretionary accruals as a proxy for earnings management and AC size. Also, the results show a significant negative association between earnings management and AC financial expertise. These findings suggest that, the level of earnings management of VietNam listed companies is decreased with the increase in the number of members on the ACs. Also it suggest that, the level of earnings management of VietNam listed companies is decreased with the increase in the number of AC members having expertise in accounting or financial management. These results are consistent with the assumptions that, a larger AC is better able to ensure the quality and integrity of reported earnings, and AC's financial or accounting expertise increases the likelihood of detecting material misstatements thus reducing the likelihood of earnings management.

Also, results of the regression model show positive association between earnings management and company size and indicate negative association between leverage, cash flow from operation and earnings management at 1% level. This result along with the result of insignificant association between AC independence and earnings management, support the assumption that, much of the blame and criticism for accounting irregularities is aimed at ACs for not fulfilling their financial reporting oversight duties due to independence issues, also it support the argument that, an audit committee serves as a reinforcing agent to the independence of internal as well as external auditor, audit committees are expected to be more effective in the oversight of financial reporting when they are independent, and it support the suggestion that, the more independent audit committee will provide better governance compared to less independent AC. These findings, arguments and suggestions are supported by the provision in Sarbanes-Oxley Act requiring publicly traded companies to have completely independent ACs.

This study offers several contributions. First, it provides new evidence on the relation between AC characteristics and the level of earnings management. Second, it provides new evidence on the effectiveness of the AC independence to limit the level of earnings management. Third, it may contribute a theoretical background on the relationship between AC characteristics and earnings management. Although the study can contribute to the understanding of the relationship between ACs and earnings management in VietNam, it may not be able to be generalized to other countries. Such relationships could be different from country to country due to business and legal environments; therefore, there is a need to examine these relationships among different countries.

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ANALYSIS FACTORS AFFECTING GOLD PRICE IN VIETNAM- USING THE VECTOR AUTOREGRESSIVE MODEL (VAR)

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Abstract: *The author build and use the vector autoregressive model (VAR) to discover factors affecting the gold price in Vietnam and the impact of each factor. Data research used in this study were monthly data for the period December 2000 to December 2019, including 10 variables. The results show that the current gold price in Vietnam is mostly affected by its historical prices, and is also affected by four other factors: world gold price, investors' expectations, foreign exchange rate, and M2 money supply. In addition, the research also indicates that gold price in Vietnam also has a reverse effect on the money supply, and gold's demand, and doesn't impact on the world gold price.*

Key words: *exchange rate, inflation rate, money supply, oil price, world gold price.*

1. Introduction

Today, along with financial markets developments, gold is one of the main assets for investment or insurance, especially during economic recessions. In addition, the instability in the gold market has left impacts on the overall economy. In recent years, the instability in the world gold market, the changes of the macroeconomic policies, and the participation in global economic integration has significantly affected the domestic gold market. Therefore, there are increasing interest in determining the factors that really affect the gold price in Vietnam and the impact of each factor.

To understand factors affecting gold price in Vietnam and measuring impact degree of the factors achieve the above objectives, the author make the research.

2. Literature review

In the market, the price of any commodity is influenced by supply and demand, and gold is no exception. Therefore, any factor that changes the supply or demand of a product also causes the price of the product to change.

2.1. Impact of gold supply on gold price

Gold supply is the quantity of gold supplied at different prices for a specific period when other factors remain constant. Maintaining other factors constant, as the supply of gold increases, that is, the quantity supplied of gold in the market increases while the market demand is constant, we have a relative excess supply situation. Then, in order to sell all the gold, sellers are forced to reduce prices, and the market adjusts for the new equilibrium price which is lower than the initial

equilibrium price. Conversely, when the supply decreases, the price of gold will increase (Tran, 2013; Mankiw, 2018). So, gold supply has an inverse effect on the price of gold.

Consequently, factors that affect the gold supply will also have an impact on gold price. The world gold market is the main source of gold raw material for the domestic market. When the world gold price increases, the cost of gold raw material will increase and thus reduce the supply of gold, leads to domestic gold price increase (Tran, 2013; Mankiw, 2018; Wang H. et al 2019). Conversely, when the world price of gold falls, the price of gold in Vietnam also decreases.

2.2 Impact of gold demand on gold price

On the gold market, demand for gold includes the demand for gold jewelry, the demand for investment gold, and the demand for production. In particular, demand for gold investment is most important and has a strong impact on gold price. The demand for gold will increase gold prices and vice versa (Tran, 2013; Mankiw, 2018; Panicker et al, 2020).

As the demand for gold changes, the price of gold will change, so factors that change the demand for gold will also affect gold price. Some of the factors analyzed by the author include: stock index, oil price, exchange rate, inflation rate, money supply interest rate, and investor expectations (Wang Y. S. et al, 2013; Qian Y. et al, 2019; Huang et al, 2019; Ansari et al, 2019; Akbar et al, 2019)

Stock index: Akbar M. et al (2019), Ansari et al (2019), Godil et al (2020) said that because gold is considered an investment asset, its price is related to other investment assets, including securities. Increasing investments in the stock market will lead to decreasing investments in other investment assets including gold, many investors will want to convert their portfolio from gold to securities or will no longer want to buy gold. Therefore, the demand for gold will decrease, leading to excess of gold and creating downward pressure on gold price.

Oil price: looking at the overall economy, increase in oil price leads to increases in input costs for most manufacturing sectors, the total supply of the whole economy is reduced, decreases in supply causes increases in prices of goods. This leads to inflation fueled by costs. At that time, money (in local currency) depreciates, people look to gold as a safe haven and gold demand increases, if the supply of gold remains unchanged, the increased demand for gold will push up gold price (Paramitar, 2017; Qian et al, 2019; Ansari et al, 2019; Godil et al, 2020; Wang et al, 2013) .

Exchange Rate: According to Wang et al (2019), Akbar et al (2019), Qian et al (2019) and Paramitar (2017), when the exchange rate increases, the local currency depreciates, people will tend to hold gold or hard currencies instead of keeping the local currency. This increases demand for gold rise. Then the price of gold will rise and vice versa.

Inflation rate: in an economy that has rising inflation and decreasing purchasing power, investors tend to restructure their portfolios to preserve capital and profit. They will sell “bad” assets and buy “good” assets, inflation makes money lose values and locals prefer to hold gold. As a result, demand for gold increases, and gold price increases (Huang et al, 2019; Qian et al, 2019; Wang et al, 2019; Mokni et al, 2019).

Interest rate: earned interest is considered the profit of depositing money into a bank. When interest rates fall, people tend to look for more attractive investment channels besides bank deposits, and one of those investment channels is the gold market, which causes demand for gold to rise and price of gold to increase (Wang & Chuch, 2013; Hassani et al, 2015; Qian et al, 2019; Ansari et al, 2019; Akbar et al, 2019).

Money supply: when money supply increases but there is no corresponding increase in goods and services, then the price of commodities will rise, meaning that the value of the currency decreases, causing inflation. And as analyzed in the previous section, when the inflation rate increases, it will increase the price of gold (Ansari et al, 2019; Godil et al, 2020).

Investor expectations: according to Keynes J. M. (1936, cited in Tran, 2013), the market depends on waves of optimistic and pessimistic investors sentiment, which sounds absurd but does not have a solid basis for measurement. Investments in the gold market as well as other financial markets are mostly done based on beliefs and expectations. Investors will buy the assets they expect to increase in the future and sell the assets they expect to fall in the future. In addition to being considered an investment asset, gold is also considered a hedge for the portfolio. Investors want to hold gold when they perceive more risk from other investment channels. Therefore, when stock prices or USD are expected to fall, they will tend to switch to gold holdings.

3. Research methods

Author use quantitative method, the vector autoregressive model (VAR), to discover factors affecting the gold price in Vietnam and the impact of each factor.

Research assumption and data

To simplify the analysis, the author assumes that the supply of gold in Vietnam depends only on the world price of gold, which is considered as the input cost for the domestic gold production.

Secondary data used in this study were monthly data for the period December 2000 to December 2019. These data was collected through various sources, except for the investor expectation factor which is taken from the author's own calculations with the assumptions presented in the previous section.

Research hypothesis

To analyze the impact of the expectation factor on the gold price in the country, the author assigns dummy variable EI as investor expectations, assuming EI can be quantified. In this study, EI will receive a value of 1 if investor has positive expectation for the gold market or negative expectations about the economy or the stock market. Under other conditions, EI value is 0, which means that there is no good expectation on the gold market. Thus, between October 2007 and December 2011, EI will receive a value of 1 because during this period, the financial crisis broke out, the economy had a downturn and the stock market also retracted; for the remaining months, EI is 0.

In order to predict unclear relationships, the author relies on the theoretical basis of the thesis and the results from the previous studies, which results in the following estimates:

Table 1. Expectation of relationship signs between factors

Variable	Expectation sign	The corresponding hypothesis	Source of data
Vietnam gold price (VGP)	NA	Dependent variable	Sbv.gov.vn
World gold price (WGP)	+	H_1 : World gold price positively impacts country's gold price	Data.okfn.org
World oil price (WOP)	+	H_2 : World oil price positively impacts country's gold price	indexmundi.com
Exchange rate (EX)	+	H_3 : Exchange rate positively impacts country's gold price	tradingeconomics.com
Inflation rate (INF)	+	H_4 : Inflation rate positively impacts country's gold price	gso.gov.vn
Money supply (M2)	+	H_5 : Money supply M2 positively impacts country's gold price	Sbv.gov.vn
Gold demand (GD)	+	H_6 : Gold demand positively impacts country's gold price	cophieu68.com
Investment expectation (EI)	+	H_7 : Investment expectation positively impacts country's gold price	Author's assumption
VN-Index (VNI)	-	H_8 : VN-Index negatively impacts country's gold price	Ssc.gov.vn
Interest rate (R)	-	H_9 : Interest rate negatively impacts country's gold price	ecna.gov.vn

Source: Author

4. Research results and Discussion

4.1. Unit root test

The data used in the VAR model should be break data. Therefore, the author makes a unit root test for each variable to determine the break point.

Table 2. Unit root test

Factors	No trend, No intercept		Intercept		Trend, Intercept	
	t (ADF)	p-value	t (ADF)	p-value	t (ADF)	p-value
EI	-1,239	0,1973	-1,509	0,5267	-1,28	0,8889
EX	3,093	0,9995	0,2863	0,9769	-1,397	0,8584
GD	-1,239	0,1972	-4,252*	0,0008*	-4,5778*	0,0016*
INF	-1,102	0,2446	-2,824	0,057	-3,20	0,08
M2	12,419	1	6,3125	1	-0,399	0,9868
R	-0,759	0,3862	-2,352	0,1574	-3,011	0,1325
VGP	1,1199	0,9316	-0,566	0,8734	-1,539	0,8119
VNI	-0,848	0,3472	-2,313	0,1691	-2,479	0,3383
WGP	1,2192	0,9428	-0,832	0,807	-0,939	0,948
WOP	-0,071	0,6577	-1,73	0,4141	-4,104*	0,01*

Source: Author

The test results in Table 2 show that: the world oil price is break, there is a tendency at 5% level, the demand for gold stopped at a significant level of 5%. Other variables include: investor expectations, exchange rate, inflation, money supply, interest rate, domestic gold price, VN-Index, world gold prices and world oil prices were break at differential at level 1 (additional test results shown in Table 3). Therefore, the data used in subsequent analysis are given in Table 4.

Table 3. Results of unit root tests with the 1st differential level

Factors	No trend, no intercept		Intercept	
	t (ADF)	p-value	t (ADF)	p-value
DEI	-12,409*	0		
DEX	-8,352*	0		
DGD	-6,763*	0		
DINF	-3,070*	0,0023		
DM2	-1,203	0,2091	-9,606*	0,0000*
DR	-8,418*	0		
DVGP	-9,430*	0		
DVNI	-8,879*	0		
DWGP	-10,19*	0		
DWOP	-7,724*	0		

Source: Author

Table 4. Data used in model

Factors	Meaning
EI	Expectations of investors
DEX	1 st differential level of exchange rate
GD	Quantity demanded of domestic gold
DINF	1 st differential level of inflation rate
DM2	1 st differential level of M2
DR	1 st differential level of interest rate
DVGP	1 st differential level of Vietnam gold price
DVNI	1 st differential level of VN-Index
DWGP	1 st differential level of world gold price WGP
DWOP	1 st differential level of world oil price

Source: Author

4.2. Determine optimal number of lags

The optimal latency is determined based on the AIC, SC and HQ standards and is selected so that the values of these statistics are smallest. The results show that the optimum latency meeting all 3 AIC, SC and HQ criteria is 2, the value of these 3 statistics is 84,11; 86,30 and 85,00 (Table 5). Therefore, the author selects 2 as the latency to use in building the VAR model as well as in calculating follow up tests.

Table 5. Selection the optimal number of lags in VAR model

Lags	LogL	LR	FPE	AIC	SC	HQ
0	-6835,82	NA	3,46(10 ²⁶)	89,48788	89,68595	89,56834
1	-6324,77	948,6231	1,61(10 ²⁴)*	84,11463*	86,29337*	84,99967*
2	-6225,13	171.9216*	1,64(10 ²⁴)	84,11938	88,2788	85,80901
3	-6148,53	122,1708	2,32(10 ²⁴)	84,42517	90,56527	86,91938

Source: Author

4.3. Verification of cointegration

To examine the long-term relationship between gold prices in the country and each of the remaining factors, the author verifies cointegration Johansen. The Trace test results and the maximum individual test values are given in Table 6 .

Based on the value of Trace statistic given in Table 6, the author concludes that: there are an equilibrium long-term relationship between VGP and EI, VGP with EX, VGP with GD, VGP with M2, and VGP with WGP. Trace test does not find the long-term relationship between VGP and the remaining variables.

Table 6. Trace Test

Variables	Hypothesis	Trace Test	Expected value	Probability	Results	Conclusion
VGP & EI	$r \leq 0$	43,20259	15,49471	0	Reject	Has 1 vector cointegration
	$r \leq 1$	2,26353	3,841466	0,1325	Accept	
VGP & EX	$r \leq 0$	31,76507	15,49471	0,0001	Reject	Has 1 vector cointegration
	$r \leq 1$	0,555527	3,841466	0,4561	Accept	
VGP & GD	$r \leq 0$	26,05472	15,49471	0,0009	Reject	Has 1 vector cointegration
	$r \leq 1$	0,298432	3,841466	0,5849	Accept	
VGP & INF	$r \leq 0$	14,55689	15,49471	0,0689	Accept	Doesn't have any vector cointegration
	$r \leq 1$	1,529417	3,841466	0,2162	Accept	
VGP & M2	$r \leq 0$	26,01448	15,49471	0,0009	Reject	Has 1 vector cointegration
	$r \leq 1$	0,122435	3,841466	0,7264	Accept	
VGP & R	$r \leq 0$	14,58607	15,49471	0,0682	Accept	Doesn't have any vector cointegration
	$r \leq 1$	0,511038	3,841466	0,4747	Accept	
VGP & VNI	$r \leq 0$	5,069175	15,49471	0,8014	Accept	Doesn't have any vector cointegration
	$r \leq 1$	0,420379	3,841466	0,5167	Accept	
VGP & WGP	$r \leq 0$	26,25126	25,87211	0,0449	Reject	Has 1 vector cointegration
	$r \leq 1$	3,658263	12,51798	0,7908	Accept	
VGP và WOP	$r \leq 0$	11,75907	15,49471	0,1688	Accept	Doesn't have any vector cointegration
	$r \leq 1$	0,36263	3,841466	0,547	Accept	

Source: Author

4.4. Granger causality test

With a number of lags of 2, Granger test results are shown in Table 7. At a 5% significance level, there is a two-way causal relationship between gold price in Vietnam and world gold price, money supply and gold prices in the country; while investor expectations and exchange rate

factors have a one-way effect on DVGP. Demand for gold has no significant impact on DVGP but DVGP has a one-way effect on gold demand. Contrary to initial assumptions and expectations, the remaining variables including interest rate, world oil price, VN-Index, and inflation rate have no causal relationship with domestic gold prices.

Table 7. Results of Granger Causality test

Null Hypothesis	Observations	F- statistic	Probability
DVGP does not Granger Cause DEX	192	2,14864	0,052
DEX does not Granger Cause DVGP		2,72946	0,016
DVGP does not Granger Cause DINF	192	0,72923	0,484
DINF does not Granger Cause DVGP		0,28384	0,753
DVGP does not Granger Cause DM2	192	9,60956	0,002
DM2 does not Granger Cause DVGP		5,05122	0,026
DVGP does not Granger Cause DR	192	1,09026	0,339
DR does not Granger Cause DVGP		0,32039	0,726
DVNI does not Granger Cause DVGP	192	0,2775	0,758
DVGP does not Granger Cause DVNI		1,0122	0,366
DWGP does not Granger Cause DVGP	192	58,3402	0,000
DVGP does not Granger Cause DWGP		5,81953	0,004
DWOP does not Granger Cause DVGP	192	1,71386	0,184
DVGP does not Granger Cause DWOP		0,14454	0,866
EI does not Granger Cause DVGP	192	4,19393	0,017
DVGP does not Granger Cause EI		0,50076	0,607
GD does not Granger Cause DVGP	1924	0,33004	0,719
DVGP does not Granger Cause GD		3,17827	0,045

Source: Author

4.5. Estimation of VAR model

With the optimal number of lags of 2, the VAR model estimation of DVGP, DEX, DWGP, DWOP, DINF, DR, DM2 and DWOP is given in Table 8.

Table 8. Results of estimated VAR Model

	DVGP	EI	GD	DEX	DINF	DM2	DR	DVNI	DWGP	DWOP
DVGP(-1)	-0,487060	7,87E-06	-0,000123	0,016647	-2,79E-05	-10,39753	9,52E-05	0,009524	-0,023653	0,000241
	[-4,51574]	[0,45996]	[-0,62006]	[1,03853]	[-0,23735]	[-2,51423]	[1,03794]	[1,14975]	[-4,19809]	[0,32070]
DVGP(-2)	0,127128	2,41E-05	0,000307	0,003252	-2,73E-05	7,081809	3,39E-05	0,001277	-0,002259	0,000646
	[1,55167]	[1,85864]	[2,03616]	[0,26710]	[-0,30531]	[2,25441]	[0,48642]	[0,20288]	[-0,52787]	[1,13383]
EI(-1)	-71,51184	1,006831	0,180586	70,11333	-0,485352	17596,48	-0,338003	-53,61881	-4,022326	0,940807
	[-0,13407]	[11,9036]	[0,18402]	[0,88448]	[-0,83487]	[0,86039]	[-0,74478]	[-1,30890]	[-0,14436]	[0,25349]
EI(-2)	537,6812	-0,031980	0,438493	34,07149	0,381238	-202,0155	0,533981	24,56100	36,44065	-1,824305
	[1,00702]	[-0,37772]	[0,44640]	[0,42939]	[0,65513]	[-0,00987]	[1,17546]	[0,59898]	[1,30654]	[-0,49105]
GD(-1)	30,06922	-0,004230	0,866435	-0,120703	0,070299	263,3032	0,011421	-0,419849	3,381836	0,359304
	[0,62377]	[-0,55337]	[9,76967]	[-0,01685]	[1,33804]	[0,14246]	[0,27848]	[-0,11341]	[1,34299]	[1,07121]
GD(-2)	-69,83766	0,000977	-0,157195	-4,306265	-0,059747	-1058,396	-0,018638	1,434174	-7,448909	-0,008742
	[-1,51011]	[0,13319]	[-1,84757]	[-0,62656]	[-1,18536]	[-0,59689]	[-0,47369]	[0,40380]	[-3,08342]	[-0,02717]

DEX(-1)	1,278672	-1,74E-05	-0,001151	0,185125	0,000145	-47,17297	0,000985	0,008312	0,047053	0,006961
	[2,27438]	[-0,19558]	[-1,11324]	[2,21573]	[0,23625]	[-2,18839]	[2,05872]	[0,19250]	[1,60217]	[1,77954]
DEX(-2)	-1,677573	-1,09E-05	-0,001737	-0,136063	0,000898	-10,74812	0,000458	0,025428	-0,034764	-0,001509
	[-3,04383]	[-0,12507]	[-1,71326]	[-1,66120]	[1,49551]	[-0,50863]	[0,97656]	[0,60075]	[-1,20751]	[-0,39340]
DINF(-1)	0,759035	0,011038	0,038737	2,639204	0,572944	-2587,731	0,110482	-10,83694	-0,421235	1,025747
	[0,00933]	[0,85540]	[0,25875]	[0,21824]	[6,46016]	[-0,82939]	[1,59577]	[-1,73408]	[-0,09910]	[1,81160]
DINF(-2)	12,31829	0,013170	0,100601	29,30726	0,177108	1991,561	0,090643	-0,181305	1,931063	-0,880429
	[0,15668]	[1,105636]	[0,69550]	[2,50825]	[2,06684]	[0,66065]	[1,35505]	[-0,03003]	[0,47018]	[-1,60937]
DM2(-1)	-0,000246	-2,32E-07	8,28E-06	-0,000185	-1,32E-06	0,169073	-1,76E-06	0,000236	-0,000156	1,71E-05
	[-0,10864]	[-0,64760]	[1,98941]	[-0,55097]	[-0,53407]	[1,95012]	[-0,91483]	[1,36044]	[-1,32324]	[1,08379]
DM2(-2)	0,002211	3,65E-08	-3,60E-06	8,17E-05	-1,30E-06	0,135319	-3,03E-06	-7,03E-05	-6,61E-06	-8,58E-06
	[0,97007]	[0,10096]	[-0,85848]	[0,24114]	[-0,52201]	[1,54814]	[-1,56288]	[-0,40175]	[-0,05550]	[-0,54083]
DR(-1)	-3,554234	-0,009617	-0,453824	-12,92960	-0,151490	2499,396	-0,006954	9,352552	2,009945	-1,136208
	[-0,03313]	[-0,56537]	[-2,29954]	[-0,81103]	[-1,29572]	[0,60768]	[-0,07619]	[1,13524]	[0,35869]	[-1,52222]
DR(-2)	-98,59771	-0,023619	0,104132	-59,09999	0,015899	-5841,679	-0,098929	8,557363	-10,23406	-1,430155
	[-0,96791]	[-1,46220]	[0,55564]	[-3,90390]	[0,14320]	[-1,49566]	[-1,14145]	[1,09384]	[-1,92325]	[-2,01771]
DVNI(-1)	0,469838	0,000466	0,001253	-0,129377	-0,002079	15,77031	-0,000593	0,296598	0,090738	0,009814
	[0,41625]	[2,60232]	[0,60327]	[-0,77128]	[-1,68975]	[0,36440]	[-0,61709]	[3,42155]	[1,53893]	[1,24962]
DVNI(-2)	0,259108	-9,10E-05	-0,003601	0,209976	0,000729	6,408166	0,001575	-0,177224	-0,015099	-0,005357
	[0,22802]	[-0,50496]	[-1,72245]	[1,24341]	[0,58865]	[0,14708]	[1,62889]	[-2,03083]	[-0,25438]	[-0,67756]
DWGP(-1)	21,29555	0,000731	0,000937	-0,544305	0,002011	26,32896	-0,002636	-0,022537	0,383678	-0,005029
	[10,2072]	[2,20839]	[0,24422]	[-1,75552]	[0,88419]	[0,32914]	[-1,48520]	[-0,14066]	[3,52051]	[-0,34646]
DWGP(-2)	3,283118	-0,000833	-0,002196	-0,652043	0,001300	-32,47255	-0,001996	-0,151370	0,287707	-0,005993
	[1,23685]	[-1,97927]	[-0,44961]	[-1,65292]	[0,44944]	[-0,31906]	[-0,88364]	[-0,74253]	[2,07492]	[-0,32448]
DWOP(-1)	6,115166	0,001868	-0,001548	0,287351	0,008107	-574,4596	0,040658	0,256327	1,077225	0,376392
	[0,49168]	[0,94705]	[-0,06767]	[0,15547]	[0,59805]	[-1,20466]	[3,84227]	[0,26836]	[1,65808]	[4,34939]
DWOP(-2)	8,090354	-0,002796	0,010047	1,167337	0,055435	-163,7394	0,030815	0,406572	-0,216309	0,135000
	[0,61545]	[-1,34112]	[0,41542]	[0,59754]	[3,86926]	[-0,32487]	[2,75525]	[0,40273]	[-0,31501]	[1,47594]
C	165,0398	0,028487	1,644628	39,06225	-0,048489	19346,51	-0,004768	-1,713460	25,01117	-2,241007
	[0,82123]	[0,89393]	[4,44823]	[1,30791]	[-0,22138]	[2,51077]	[-0,02788]	[-0,11102]	[2,38249]	[-1,60262]
R-squared	0,561975	0,952349	0,717749	0,337653	0,657456	0,297853	0,428043	0,229204	0,285496	0,324222
Adj. R-squared	0,496107	0,945183	0,675306	0,238052	0,605946	0,192267	0,342034	0,113295	0,178051	0,222602
F-statistic	8,531798	132,9049	16,91061	3,390052	12,76356	2,820947	4,976740	1,977442	2,657150	3,190515
Log likelihood	-1215,470	131,9252	-245,5576	-921,8818	-164,9310	-1777,037	-126,7941	-820,2175	-760,8673	-450,4207
Akaike AIC	16,05805	-1,440587	3,461786	12,24522	2,414688	23,35113	1,919403	10,92490	10,15412	6,122347
Schwarz SC	16,47218	-1,026458	3,875916	12,65935	2,828818	23,76526	2,333533	11,33903	10,56825	6,536477
Mean dependent	190,7331	0,331169	6,422081	42,56136	0,041623	23477,02	0,006494	1,637662	6,249675	0,508117
S.D. dependent	982,1259	0,472169	2,250895	118,6938	1,210431	29742,28	0,731252	56,85886	40,16913	5,501795

Source: Author, Notes: t- test value in []

However, according to the Granger test results and the co-linkage test, some variables have no effect on DVGP, so the author proceeds to eliminate the variables that do not affect: inflation, interest rate, world oil price, gold demand, and VN-Index. The results (Table 9) show that some regression coefficients “zero” are statistically significant. Thus, the author continues to base on the t and p-value statistics to eliminate the non-significant variables from the model, finally obtaining the regression result DVGP as follows (also see Table 9):

Table 9. Regression of DVGP

Dependent Variable: DVGP

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DVGP(-1)	-0,386278	0,079155	-4,880033	0,0000***
DVGP(-2)	0,176011	0,063828	2,757556	0,0066***
EI(-1)	395,3733	136,8255	2,889618	0,0044***
DEX(-1)	0,022911	0,652949	4,017263	0,0001***
DM2(-2)	0,006788	0,002803	2,421836	0,0167***
DWGP(-1)	20,90380	1,862710	11,22225	0,0000***
C	-51,41163	78,25992	-0,656934	0,5123
R-squared	0,524213	Mean dependent var		190,7331
Adjusted R-squared	0,504793	S.D. dependent var		982,1259
S.E. of regression	691,1313	Akaike info criterion		15,95893
Sum squared resid	70216394	Schwarz criterion		16,09697
Log likelihood	-1221,837	Hannan-Quinn criter.		16,01500
F-statistic	26,99361	Durbin-Watson stat		2,131064
Prob(F-statistic)	0,000000			

Source: Author, Note: *** has statistical significance meaning at 1% level

The final result is:

$$DVGP = -0.3863 \cdot DVGP(-1) + 0,1760 \cdot DVGP(-2) + 395,3733 \cdot EI(-1) + 0,0229 \cdot DEX(-1) + 0,0068 \cdot DM2(-2) + 20,9038 \cdot DWGP(-1)$$

This model explains 52.42% of DVGP changes. Estimation coefficients show that the variables investor expectations, exchange rate, money supply and world gold price all have positive effect on domestic gold price.

4.6 Test the stability of the model

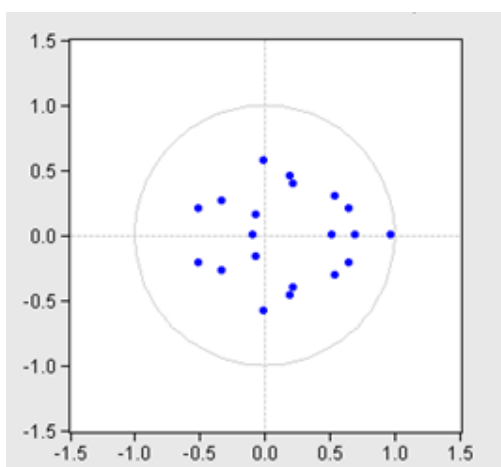
Table 10. Break test of residuals

	t-statistic	Prob.
Dickey-Fuller value	-12,71548	0,00000
Expected value		
1% level	-2,580164	
5% level	-1,942924	
10% level	-1,615325	

Source: Author

A model is considered stable if there is a residue and the solution of the characteristic polynomial lies in the unit circle. Verifying the stopping of the remainder indicates that the remainder is a stop sequence (Table 10). The characteristic polynomials are in the unit circle (Figure 1). Therefore, the VAR model is stable.

Figure 1. Circle unit



Source: Author

4.7. Results of the decomposition of variance and repulsion function

The result of the variance distribution (see Table 11) with a lag of 2 indicates that domestic gold price is mainly influenced by its own prices in the past and the world gold price. In particular, DVGP provides over 58% of information to explain its own fluctuation, the amount of information that the world gold price provides is 40%. The effect of the remaining factors is very low, ranging from 0,01% to 1%.

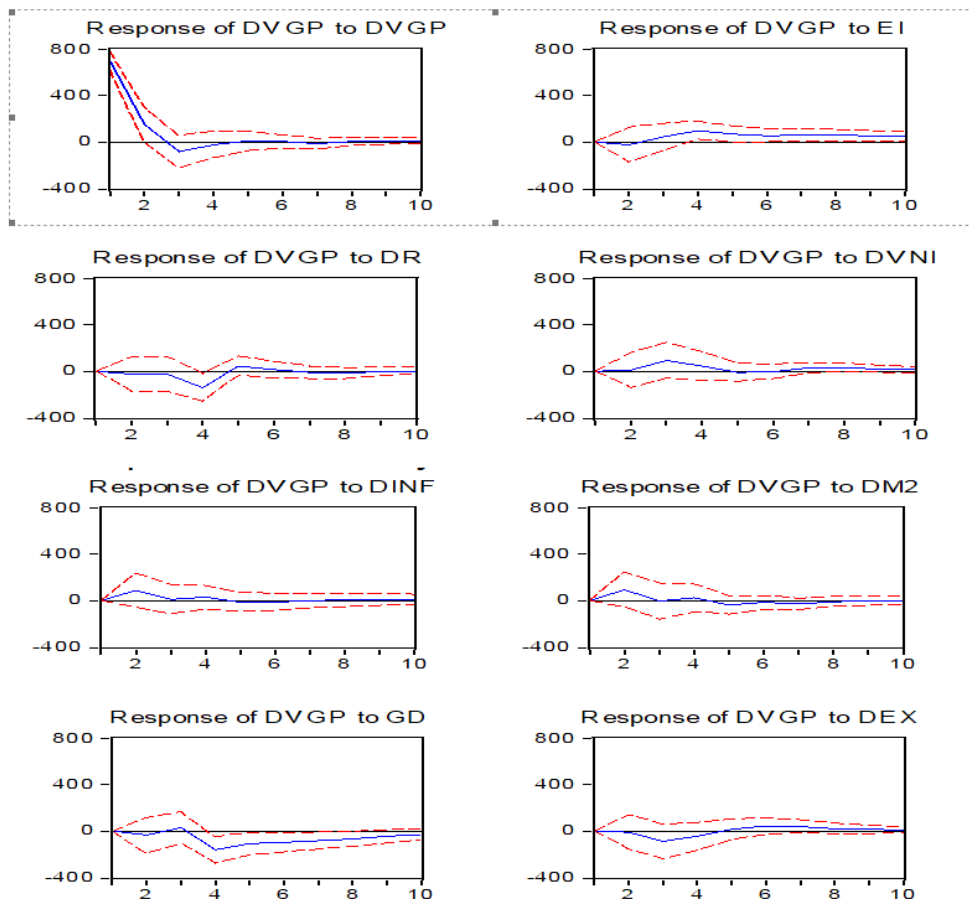
Table 11. Variance Decomposition

Variance Decomposition of DVGP:											
Period	S.E.	DVGP	EI	GD	DEX	DINF	DM2	DR	DVNI	DWGP	DWOP
1	697,17	100,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00
2	937,64	57,84	0,06	0,14	0,01	0,89	1,00	0,05	0,01	39,92	0,09
3	963,30	55,50	0,28	0,22	0,86	0,85	0,95	0,10	0,98	38,04	2,22
4	996,52	51,91	1,27	2,79	1,00	0,88	0,94	2,02	1,09	35,99	2,11
5	1007,19	50,82	1,73	3,81	1,01	0,88	1,06	2,17	1,08	35,32	2,11
6	1014,80	50,07	2,02	4,65	1,18	0,88	1,07	2,16	1,06	34,82	2,09
7	1021,63	49,42	2,34	5,22	1,32	0,87	1,12	2,14	1,14	34,37	2,06
8	1026,70	48,94	2,67	5,59	1,36	0,86	1,12	2,14	1,22	34,05	2,05
9	1029,56	48,67	2,93	5,75	1,37	0,86	1,11	2,13	1,25	33,86	2,05
10	1031,37	48,51	3,16	5,80	1,38	0,87	1,11	2,12	1,27	33,75	2,05

Source: Author

The IRF push function (see Figure 2) also shows that DVGP reacts quickly and sharply to shocks from gold prices in the country and the world. Reacting to the shock of investor expectations, DVGP also has similar reaction but at a milder level. For shocks from the remaining factors, the DVGP's response to shocks is negligible.

Figure 2. Response



Source: Author

6. Research results

Analysis and test results show that there is a relationship between the price of gold in Vietnam and the price of gold in the world. This relationship is in line with the initial expectation. In addition, investor expectations, money supply, and exchange rate have positive impact on domestic gold prices but at a less level. The remaining factors have no impact on gold price.

First, *the price of gold is influenced by its past*. This matches most of the time series data. Previous studies showed similar results: Sujit and Kumar (2011), Huang et al (2019) and Wang et al (2019).

The second factor affecting the domestic gold price is the world gold price. This result was also reported in previous studies by Capie et al (2005) and Huang et al (2019).

The exchange rate: like previous studies by Khaemasunun (2006) or Sjaastad (2008), the author concludes that the exchange rate has positive affect on gold prices. The result is also consistent with studies by Ismail et al (2009), Toraman (2011), Sindhu (2013), Hao et al (2019). But, the result is not the same as recent results of research by Akbar et al (2019), Qian et al (2019).

Similarly, *money supply also has positive impact on gold price*, in line with initial expectations. This is also the result found by Juan Carlos Artigas (2010) and Godil et al (2020). But the research of Akbar et al (2019) shown money supply has negative effect on gold prices.

Comment on *the impact of investment expectations on gold price*. In times of crisis, people are pessimistic about the economy as well as the stock market, leading to the rush to invest in the gold market. This situation was more noticeable during the period 2009-2010, when the gold market in Vietnam and the world witnessed record price increase, investors recognized this trend and expected further upward momentum. Therefore, they increased investment in gold and further increased demand for gold, leading to further sharp increase in gold prices. By the end of 2010, market expectations were not as high as two years before, and by the end of 2012, as the economy showed signs of recovery, expectations for the economy as well as the stock market return went up while expectations for gold market return went down, demand for gold soured and gold prices trended downward.

Unlike original expectations, *the author does not find a relationship between gold price and stock index in Vietnam*. This result contradicts the world studies of Sherman (1982, cited in Deepika et al, 2012), Smith (2002), Chen and Lin (2013), Md. Gyasuddin Ansari et al (2019) and Akbar et al (2019), but is in agreement with studies by Danish Iqba Godil et al (2020).

For inflation factor, although the result is not the same as Ghosh (2002, cited in Chen and Lin, 2013), Deepika et al (2012), Sindhu (2013), Huang et al (2019), Qian et al (2019); but the result is similar to some studies in the world as Blose (2010), Aclan (2012), Wang et al (2019) and Mokni et al (2020).

According to the results, *gold demand does not affect domestic gold prices* but gold prices in the country have an impact on gold demand. The result is similar to Wang et al (2019). This was explained in the analysis of investor expectations. When gold prices rise, investors expect upward price momentum to continue, so they want to invest more into the gold market, leading to increase in the demand for gold. Conversely, when gold prices fall, investors have a psychological fear of holding gold, causing the demand for gold to fall.

For world oil price, the results suggest that oil price is not meaningful in explaining the change in gold prices. This is acceptable because oil price's effect on gold price is primarily through its impact on inflation. But according to the results of testing the relationship between inflation and gold price, inflation is not a meaningful factor in explaining the change in gold prices in the recent years. The result is similar to Wang et al (2019), and Li et al (2020). However, research results by Qian et al (2019), Godil et al (2020) are the world oil price having negative affecting on domestic gold price.

Similarly, *the author does not find the impact of interest rate on gold price*. This finding, although is different from Ghosh (2012), Sindhu (2013), Qian et al (2019) 's global studies, is consistent with Aclan (2012), Wang and Chueh (2013), Akbar et al (2019), Ansari et al (2019).

7. Recommendations to policy makers and market managers

The research results are domestic gold price depending on historical price, expected investors, foreign exchange rate, money supply and world gold price. All these factors have positive impacting to domestic gold price.

Besides, the results show that there are an equilibrium long-term relationship between domestic gold price and gold demanded, expected investors, foreign exchange rate, money supply and world gold price. The author does not find the long-term relationship between domestic gold price and the remaining variables.

According to the results, the author suggest some policy implications as below:

To cope with world gold price changes:

- Vietnam should join the World Gold Council to be able to capture timely information, data and policies related to the gold market.
- Build a team of experts to analyze and forecast the gold market.

To stabilize investor sentiment

- Broadly inform investors and locals about the State Bank of Vietnam's specific management policies for the gold market, the foreign exchange market, promises on stabilizing interest rates and exchange rates as well as controlling inflation, stabilizing the gold and securities markets.
- Develop transparency in market development.
- Continue to strengthen people's confidence in the Vietnamese currency as well as reducing the gold's psychology among the population. Strictly forbid the valuation and sale of assets in gold and foreign currencies.

To manage money supply:

- Enhance the capability of the State Bank of Vietnam especially in collecting information, processing information, and making decisions on the monetary policy.
- Manage closely the supply of money. Carry out research to have a scientific basis to determine the amount of money.
- Manage and limit the ability to "make money" by commercial banks by increasing the required reserve ratio, tightening credit.
- Raise credit interest rates to attract cash in the economy, reduce the amount of money supply while raising the interest rate of credit also reduces the ability of banks to expand their credit.

To stabilize the exchange rate:

- Maintain the floating exchange rate regime managed by the State Bank, through regulations on average inter-bank exchange rate, exchange rate fluctuation.
- Build up a team of experts to forecast, regularly update and analyze the global, regional, and national economic situation, with timely forecasts on exchange rate developments, anticipated by preferential measures suitable for each period.
- To quickly set up and put into operation the exchange rate stabilization fund.

Directly impact the domestic gold market:

- On the gold supplied side, State Bank of Vietnam continues to manage gold import quotas. In case of rising demand, it is possible to increase the amount of imported raw material gold. Establish a gold reserves fund aims to stabilize prices.
- On the gold demanded side, limit borrowing from banks to invest in gold, in urgent circumstances, may prohibit gold loans or completely prohibit the gold bar business.

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FACTORS AFFECTS THE INDIVIDUAL CUSTOMER'S DECISION TO DEPOSIT AT THE BANK FOR INVESTMENT AND DEVELOPMENT OF VIETNAM (BIDV), TAN BINH BRANCH

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Abstract: *The expansion of banking system has given personal customers many opportunities to choose among a great deal of products. Understanding psychology and need of individuals helps banks to have the right policies to attract customers and develop products in a more and more competitive market. Managing the capital size has an important meaning in the growth of commercial banks' activities. The research purpose is to determine factors that affect the individual customer's decision to deposit at BIDV Tan Binh branch, so that the authors suggest solutions to attract deposits of personal customers for the bank branch. We use the quantitative research method through a questionnaire to collect data from customers of BIDV. What we received would be encoded, cleaned, processed and analyzed by using the software SPSS version 20 in the following implementation order: Descriptive statistics, scales assessment with Cronbach's Alpha, Exploratory analysis discovery (EFA), and Ordinary least squares (OLS). Based on analyzing the sample size of 176 personal customers in BIDV Tan Binh branch, the study result shows six factors that affect the decision of depositing money: (1) Reputation and Brand name; (2) Price; (3) Emotional value; (4) Staff pro; (5) Facilities; (6) Products and services quality. Among them, the factor Reputation and Brand name has the strongest impact on the individual customer's decisions at BIDV Tan Binh branch.*

Keywords: bank deposit, BIDV, commercial banks, personal customers, the decision of depositing.

JEL code: M20

Introduction

The fast development of banks in recent years has cause many opportunities and threats for commercial banks in making new products and services, finding proper ways for growth, and committing their positions and brand names in the financial market. To do so, banks must understand their markets and customers' needs. That's the reason why knowing and measuring the factors that affect the decision to deposit money of individuals are very essential. Moreover, the strong participation of foreign banks into the market has made the capital raising of Vietnam commercial banks more and more difficult. The competition among banks is becoming increasingly fierce, especially after Vietnam's economy gradually stabilizes. That the country economy is growing more and more, and the amount of capital needed for production and business is increasing day by day, require commercial banks to have good mobilization. Deposit is the largest source of capital for the banking system. It is the monetary value that the banks can raise from economic organizations and individuals in society through the implementation of deposit operations and other transactions.

Although facing big difficulties, the potential development of our banking system are undeniable. Vietnam's economic growth is relatively high, compared to other countries in the region and the world. Our country has been considered a potential market. Besides, international economic integration brings opportunities to expand the market, so that commercial banks have chances to access and apply new technologies, to learn management experience of foreign banks.

As one of the largest commercial banks of capital, assets, human resources and network in the banking market, Bank for Professional staff estment and Development of Vietnam (BIDV) need to be more aware of its role and make more efforts in bringing modern, convenient, professional and competitive products and services for customers. The raising capital from organizations and residents in 2018 had been planned to increase by 17% compared to 2017, but in practice, it only increased by 11%; the growth rate was suitable and met the demand of the bank. In 2019, the proposed plan had been to strive increasing by 11% compared to 2018, and the practical result was so good, up to 12,7%. Knowing the importance of that issue, and in order to identify factors influencing individual customers' decision to deposit money at BIDV Tan Binh branch, the authors decided to choose the topic: *Factors affects the individual customer's decision to deposit at BIDV Tan Binh branch.*

General view of the study

There were many works on the subject that *which banks should personal customers choose to deposit money.* Among them is the earliest study of Anderson, Cox and Fulcher (1976), which showed that the friends' referral was the most important factor to choose the bank in the U.S; and the fame, prestige and capital were other factors mentioned in this research. The study of Khazenh and Decker (1992-1993) determined these factors as attributes affecting the choice of customers for banks: policies on service fees, fame, interest rate, time for disbursement, and friendliness of bank staff. The work of Zineldin (1996) studied on the banking choice in Sweden; it proved that the qualifications, friendliness of bank staff, accuracy of transactions, ability to fix wrong transactions, and the speed of services had all played important roles. In the study of Chigamba and Fatoki (2001), the factors for banking choice of university students are: services, Professional staff enience of bank location, compelling referrals, marketing activities, and prices; researchers confirmed the coProfessional staff enience of bank location, compelling referrals, marketing activities, and prices, referrals, and prices are the most crucials.

A dosmetic study of Le Minh Duc (2002) in the process of researching the mobilization strategy at the Transaction Center of Bank for Professional staff estment and Development of Vietnam had found that the policy of interest rate is one of the subjective factors affecting the size of capital mobilization in generally, and deposits in particularly of commercial banks; the monthly interest rate should be greater than inflation rate so that depositors can enjoy positive actual rate; commercial banks should offer flexible and reasonable policies to ensure benefits of them. Another study of Pham Thi Tam and Pham Ngoc Thuy surveyed 350 personal customers in Da Lat city to conProducts and services qualityude that the brand-name recognition had the strongest effect on the trend of banking choice; some other factors also had the certian impacts, such as coProfessional staff enience of bank location, the ability to deal with incidents, customers' relatives. Nguyen Thi Thu Huong (2008), in her study about solutions for pushing mobilization in the Bank for Agriculture and Rural Development of Vietnam in the context of high inflation, suggested some factors to affect mobilization; they were the form of mobilization, service quality, networking

of banks, prestige and business strategy. And Le Phan Vi Ai (2013) represented factors affecting banking choice for depositing money of individuals in Ho Chi Minh city: financial benefits, brand-name recognition, services, staff, security, coProfessional staff enience, ATM, referrals....

The studies above, made by many authors in various countries, are the foundation for us to do our reasearch.

The theory foundation and research model

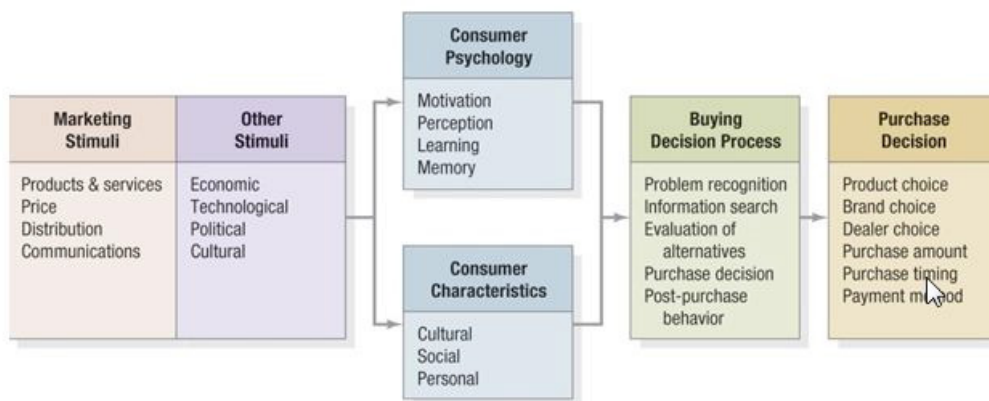
The consumer behavior theories

Deposits are money which organizations and individuals send into credit institutions or other organizations iProfessional staff olving banking activities. They are in the form of demand deposits, term deposits, and others. Deposit operations are a form of mobilization of commercial banks. They accept deposits of organizations and individuals through opening various accounts to meet the demand for using non-cash payment, or getting profit of customers.

The concept of consumer (in this study, it's abbreviated as NTD) was first officially accepted in Vietnam in ArtiProducts and services qualitye 1 of the Ordinance on the protection of consumers' rights in 1999. Accordingly, "Consumers are the buyers, they use goods and services for the purpose of daily life of individuals, families and organizations". Until 2010, when the Law on Protection of Consumer Rights was enacted to replace the Ordinance, this concept continued to be recognized in Products and services qualityause 1, ArtiProducts and services qualitye 3 of this Law, and its content did not change.

According to the American Marketing Association, customer behavior is the interaction between the stimulus of eProfessional staff ironment and human perception and behavior; by interacting, human change their lives. In Bennett DB's opinion (1989), consumer behavior is the dynamic interaction of influencing factors, perception, behavior and eProfessional staff ironment, through which people change their lives. According to Kotler & Levy , customer behaviors are specific behaviors of an individual when making decisions about purchasing, using or disposing of products or services. Philip Kotler said that businessmen studied consumer behavior with the aim of identifying their needs, interests and habits (Kotler, 2013). Kotler has described systematically the proceeding of buyer's behavior in the following picture:

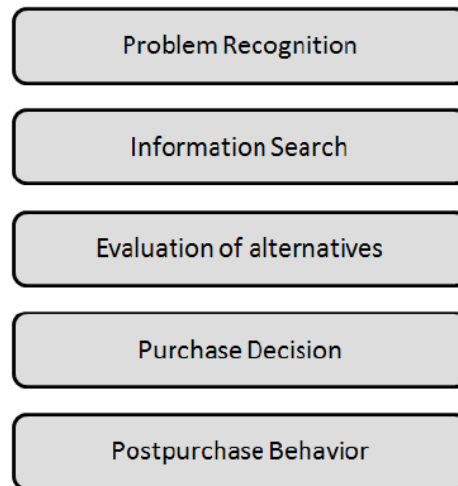
Figure 1: Model of Consumer Behavior



Source: Philip Kotler (2013)

Thus, consumer behavior is the reaction of customers under the impact of external stimulus and the internal psychological process that takes place during the decision process of choosing goods and services. The buying decision process is a series of stages in which consumers go through in deciding to buy a product or service. That process consists of five stages:

Figure 2: The buying decision process



Source: Philip Kotler (2013)

When analyzing these stages, we will understand the factors affecting the consumer behavior in each specific time and context. However, in normal purchases, the consumers may skip a few stages or not follow exactly the order. The buying process usually starts with their awareness of need. It can be realized when they are affected by internal stimulus or external environment. Then people will collect information about products and brand-names by using their personal experiences and external factors, thereby estimating and evaluating whether to buy the products or not.

So consumer trends are often used to analyze consumer behavior. “Consumer trend mean the subjective inProducts and services qualityination of consumers to some product or brand, and it has been proved to be a key factor in predicting consumer behavior.” (Fishbein & Ajzen, 1975). When consumers choose a brand (product, service), they have already experienced the process of attitudes towards the brand and show their opinions.

The Perceived Value Theory

The value which a consumer get is defined by Philip Kotler as the difference between total value received and total cost to pay for a product or ervice. Total value are benefits that a consumer expects to get from products or services, such as: product value, service value, human resources value, and image value. Total costs are all that consumers have to pay for comparing, buying, and using products and services, inProducts and services qualityuding: price, time cost, labor cost, mental cost. When it comes to received value, people always imply that it is perceived value. In the same products and services, perceived value is altogether different for each person . Every people has a different life situation, different opinions about the importance and costs they must pay for products and services.

In shortly saying, every consumer has a different rating for the same product or service, we call that is a perceived value. Philip Kotler said the key factor for the customer value is that companies must make four basic factors which are different from ones of competitors: product, service, human resources, and company's image. Among them are:

- Products: differences on attributes, functions, suitability, product life, reliability, repairability, style, and structure.
- Service: differences on delivery, installation, customer training, advice, repair, and some other services.
- Human resources: differences in ability, attitude, trustworthiness, credit, enthusiasm and communication skill of company's staff
- Company image: differences in symbols, media, atmosphere, and sponsorship events which create pride and delight for customer

In summary, according to Philip Kotler, the factors that influence customers' buying decisions are the main keys to determine the value and satisfaction of customers. They are values of product, service val, human resources, and image.

The researches of domestic and foreign authors

Identificating factors that influence customers' decisions to deposit is very important to this study, because these factors will serve as the basis for building the key factors. Here are some researches by domestic and foreign authors.

Table 1. The studies of the bank choice to deposit of individual customers

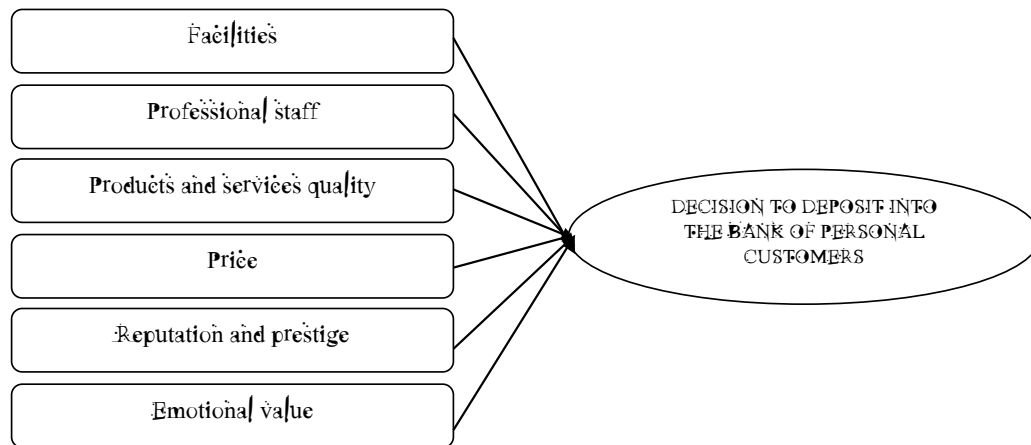
Author(s)	Country	Factors
Khazeh and Decker (1992-1993)	U.S	- Service fee collection policy - Reputation - Interest rates. - Disbursement time. - The friendliness of the bank staff
Zineldin (1996)	Sweden	- Qualifications and friendliness of staff - Accuracy and good error correction. - Service speed - CoProfessional staff enient location - Cost - Advertisement
Thwaites, Brooksbank and Hanson (1997)	NewZealand	- Fast and efficient service. - Friendly and enthusiastic staff. - Bank reputation.

Mylonakis et all (1998)	Greek	<ul style="list-style-type: none"> - CoProfessional staff enience - Bank reputation. - Quality of products / services. - Interest rates and fees. - Qualifications and communication skills of staff - Facilities - The eProfessional staff ironment of transaction points. - Satisfaction on services, after-sales services
Hur and Kar (2000)	Singapore	<ul style="list-style-type: none"> - Price. - Various products and services. - Affection
Chigamba and Fatoki (2011)	Nam Phi	<ul style="list-style-type: none"> - Services - CoProfessional staff enient location - Attraction. - Introduction - Marketing activities - Price
Nguyen Thi Thu Huong (2008)	Vietnam	<ul style="list-style-type: none"> - Forms of mobilization - Quality of banking service provided - Networking system - Prestige and business strategy
Le Phan Vy Ai (2013)	Vietnam	<ul style="list-style-type: none"> - Financial benefits. - Brand awareness. - Products and services - Staff - Safety feeling - CoProfessional staff enience - ATM service - Problem solving - Introduction

Source: Authors collect

The proposed research model

After referencing and considering the above research models, we authors propose the following research model inProducts and services qualityuding 6 main factors: (1) Facilities, (2) Professional staff, (3) Products and services quality, (4) Price, (5) Reputation and prestige (6) Emotional value.

Figure 3: The proposed research model

Source: Authors collect

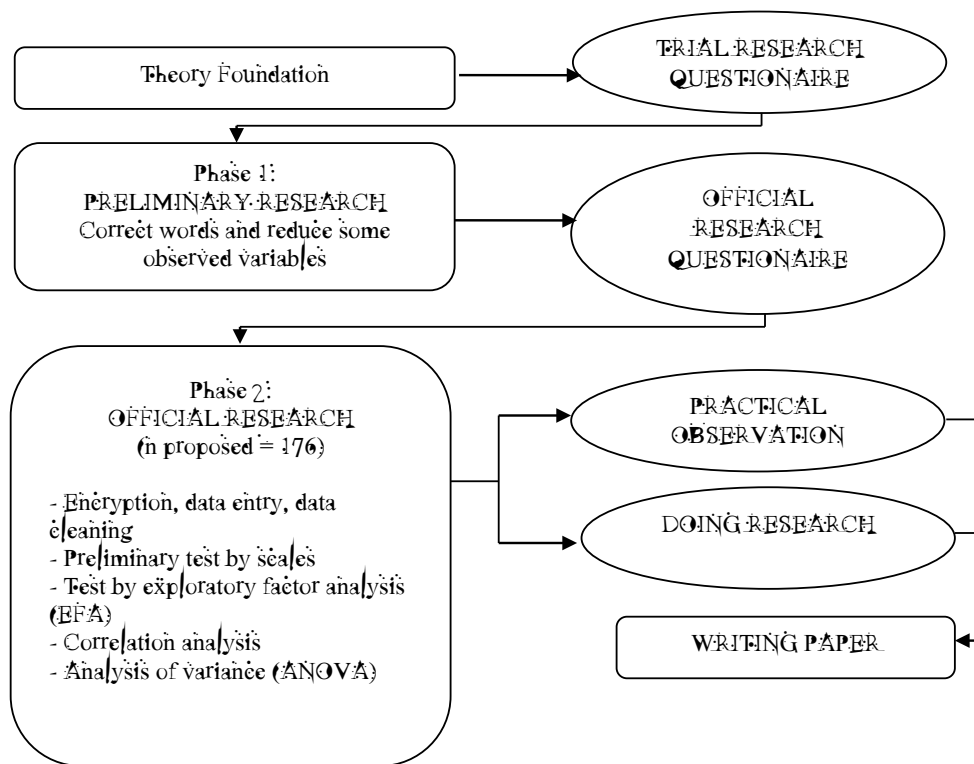
From the research model presented, we authors have identified some research hypotheses:

- (1) Hypothesis H1: The factor "Facilities' affect customer" decision to deposit money into the bank.
- (2) Hypothesis H2: There is a positive relationship between product characteristics and buying behavior of customers
- (3) Hypothesis H3: The factor "Products and services quality' affect customer" decision to deposit money into the bank
- (4) Hypothesis H4: The factor "Price' influences individual customers" decisions to deposit money in the bank
- (5) Hypothesis H5: The factor "Reputation and prestige" influences individual customers' decisions to deposit money in the bank
- (6) Hypothesis H6: The factor "emotional value" customers' decisions to deposit money in the bank

The Research Method

The entire study is described in the figure below. First of all, based on the theoretical basis and practical urgent problems, some main jobs should to be done in the objective and scientific order to help the authors do this research.

Namely, to evaluate the models in this study, quantitative description is the appropriate method. A set of tools and scientific measures are used to test and make a complete set of scales in order to meet the requirements of math statistics in data analysis and processing. The research process is detailed below:

Figure 4: Overview of the research process of the topic

Source: By authors

After having been collected, the data was processed by SPSS software. The work done in the official research in Products and services quality included: Preliminary evaluation on the scales, exploratory factor analysis, correlation analysis, regression analysis, analysis of variance (ANOVA). In the process of analyzing, evaluating and verifying the scale, we continue to remove, group, or Products and services quality classify the component variables into specialized groups; we call variables as appropriate name by using the exploratory factor analysis (EFA).

We authors will perform an inspection to determine the factors affecting the decision of depositing money of individual customers in BIDV Tan Binh branch. This is a quantitative study done in two phases: Phase one - preliminary quantitative research; Phase two - formal quantitative research. Before formulating the exact scale, the authors conducted preliminary research by directly interviewing experts ($n = 5$), and making a general quantitative survey ($n = 50$) in order to explain concepts and meanings Products and services quality early.

From 23 observed variables in the draft scale, after deeply interviewing with experts, we authors removed 2 variables because of unProducts and services quality early meanings, contrary to other observed variables, causing conflicts in the scale. We also add 1 new variable with Products and services quality early and more detailed content. In addition, we corrects words, separates the ideas of 8 observed variables that experts had commented on and requested us to fix. After finishing, the remaining preliminary scale has 22 observed variables belonging to 6 groups of factors (independent variable) and 1 dependent variable.

The formal research uses quantitative methods by directly surveying through questionnaires at BIDV Tan Binh branch of a sample size of 176. This study is used to evaluate the reliability and test the scales in the model by testing Cronbach's alpha coefficient, total variable correlation, EFA analysis.

In this study, the expected survey sample is selected conveniently. The objects of the survey are those who are using the products and services of BIDV Tan Binh branch, whose ages are from 18 to 51 years old.

The statistical information are collected to Products and services quality to identify the factors affecting decisions of depositing money into BIDV Tan Binh branch, and to Products and services quality to identify the effects of demographic characteristics on customers' thoughts and actions.

The Study Results and Discussion

After finishing the survey, we collected 176 samples and removed the unreasonable answer sheets, then we kept 176 valid results. We authors assesses the survey sample through three attributes: gender, age and income. Sample statistics for demographic variables show inequality in those attributes. Most of them are women, aged between 18 and 30, earning less than 6 million one month.

Analysis results show that most of the observed variables met the criteria (Cronbach's $\alpha \geq 0.6$ and total correlation ≥ 0.3). Finally, the research all has 22 observed variables before conducting EFA. After testing Cronbach Alpha, the satisfactory variables continue to be in Products and services quality included in the exploratory factor analysis. The research team decides to bring the observed variables of the scales into the EFA factor analysis.

After the first time for EFA analysis, 22 observed variables of 6 independent variables were grouped into 6 factors. KMO coefficient > 0.5 ; load factor > 0.5 ; difference in load factor of an observed variable among the factors > 0.3 . In the second EFA analysis, the KMO coefficient = $0.854 > 0.5$ which is suitable with the data. The Chi-squared statistic of the Bartlett's test reaches 2325,426 with the significance level Sig. = 0.000, so the observed variables are correlated together. The total variance extracted is 65,622%, showing that the factors more than 50% of the variation of the data. Therefore, the scales drawn are acceptable. Eigenvalue = 1.042, load factors are all greater than 0.5.

According to the original theoretical model, the factors affecting the decision to deposit money in a bank in Products and services quality include six components. However, when analyzing factors, we got have six factors. From the analysis results of Cronbach's alpha, six observed variables are retained and continued to be used to analyze the EFA. Analyzing the dependent variable factors, we have the coefficient KMO = 0.821, and Bartlett's test has significance level Sig = $0.000 < 0.5$, extracted variance is 66.276%, and all variables have load factors that are greater than 0.5. Thus, the factor "decision to deposit money into the bank" in Products and services quality includes five observed variables: QD1, QD2, QD3, QD4 and QD5.

After the phase of conducting EFA, the factors are in Products and services quality included in the test model. The value of factor is the average of observed variables belonging to that factor. Pearson correlation analysis is used to examine the suitability of components in the regression model. The results of regression analysis will be used to test hypotheses from H1 to H6.

That analysis results show that the correlation between the majority of independent variables and dependent variable is high demonstrates a Products and services quality positive relationship. Besides, the correlation coefficients are statistically significant (Sig. < 0.05).

The regression analysis is performed with six independent variables such as: Facilities, Professional staff, Products and services quality, Price, Reputation and prestige, Emotional value

Table 2: Descriptive statistics of regression variables

Factor	Average	Variance
Facilities	3.6535	.85688
Professional staff	3.9760	.81887
Products and services quality	4.1423	.68919
Price	3.7772	.79180
Reputation and prestige	3.8944	.80206
Emotional value	3.6812	.89116
Decision to deposit money	3.6748	.81247

Source: Authors

Values of the independent variables are averaged that based on the observed components of those independent variables. The value of the dependent variable is the mean of the observed variable “the decision to deposit money into a bank”. The results in Table 2 show that the average values of all factors are greater than 3, the factor “Products and services quality” is the highest 4.1423.

The form of the regression model is: $Y = \beta_0 + \beta_i X_i + \varepsilon$ (*)

The equation (*) becomes: Decision to deposit money = β_1 . Facilities + β_2 . Professional staff + β_3 . Products and services quality + β_4 . Price + β_5 . Reputation and prestige + β_6 . Emotional value + ε

From the table above we see all variables are significant (Sig. <0.05). Comparing the first regression analysis with the hypotheses, all variable are accepted.

VIF is such small (VIF <10) shows that we know these independent variables do not have a close relationship together. So there is no multicollinearity here. Therefore, the relationship among these independent variables does not affect the results of the model.

The adjusted R^2 is 0.649. This means that the relevance of the model is 64.9% or the independent variables explain 64.9% about the dependent variable “decision to deposit money in the bank”. Due to Durbin – Watson achieved 2.005 (ranging from 1 to 3), we accept the hypothesis that there is no first-order correlation in the model.

To test the suitability of the multiple regression model, we use F value in ANOVA analysis table. This test shows the linear relationship between dependent variables and independent variables. ANOVA analysis table shows that the regression model has $F = 77.796$, and Sig. <0.05, they represent that the model is suitable for the data set and can be extended to the whole population (Hoang Trong and Chu Nguyen Mong Ngoc, 2005).

Table 3: Result of the regression analysis

Factor	Unstandardized Coefficient		Standardized Coefficient	t	Sig.	Multicollinearity	
	B	Std. Error	Beta			Tolerance	VIF
Hãng số	.865	.371		2.330	0.000		
Facilities	.039	.061	.043	.639	0.000	0.983	1.017
Professional staff	.069	.091	.062	.758	0.000	0.976	1.024
Products and services quality	.028	.066	.031	.428	0.000	0.987	1.013
Price	.215	.096	.198	2.246	0.000	0.980	1.020
Reputation and prestige	.259	.099	.239	2.618	0.000	0.965	1.036
Emotional value	.179	.081	.177	2.176	0.000	0.984	1.016

Source: Authors

After all, the regression model satisfies the conditions for evaluation and testing the suitability. The final regression equation is as follows:

$$QD = 0.865 + 0.043 \text{ Facilities} + 0.062 \text{ Professional staff} + 0.031 \text{ Products and services quality} + 0.198 \text{ Price} + 0.239 \text{ Reputation and prestige} + 0.177 \text{ Emotional value}$$

The results of our research show that the factors affecting the decisions of individual customers to deposit money at BIDV Tan Binh branch include six factors, and their influence levels are arranged in the descending order: Reputation and prestige ($\beta = 0.239$), Price ($\beta = 0.198$), Emotional value ($\beta = 0.177$), Professional staff ($\beta = 0.062$), Facilities ($\beta = 0.043$), Products and services quality ($\beta = 0.031$).

In practice, by discussing the results with participants, we authors focus on the preliminary research phase, from the perspective of those who have been using products of BIDV branch. Most of the opinions agree that the decision to deposit money into BIDV Tan Binh Branch was influenced by factors: Reputation and prestige, Price, Emotional value, Professional staff, Facilities, Products and services quality.

Conclusion and Management Imply

From what's been said, the co-authors draw some conclusions:

About **Scale**: Some scales which previous researchers have successfully applied, but in this study were excluded through qualitative and quantitative research. Some scales are not suitable for Vietnamese culture, some are very good, but only suitable for the developed economies.

About **Hypothesis**: This study has successfully applied the models of factors affecting the decision to deposit money into the bank of individual customers by Anderson, Cox and Fulcher (1976), by Khazeh and Decker (1992), by Zineldin (1996) ... The authors consulted them to build the model of factors influencing decisions of individual customers to deposit money into BIDV Tan Binh branch. In conditions of the banking branch, our initial research model having twenty three observed variables in seven scales, we found that six factors and their influence levels are arranged in this descending order: Reputation and prestige ($\beta = 0.239$), Price ($\beta = 0.198$), Emotional value ($\beta = 0.177$), Professional staff ($\beta = 0.062$), Facilities ($\beta = 0.043$), Products and services quality ($\beta = 0.031$).

About **Factors**: Demographic, considering the influences on the decision to deposit money into the bank, through the test results of six factors, shows that there is no difference for the sex groups, age, education, income, geography in making customers' decisions.

About **Sample**: Because this study use the direct sampling method, the scope of the survey is still limited, so the results are not generalized highly and broadly.

From those above, our research team suggest something in management and finance:

First, "Reputation and prestige" has the greatest influence on customers' decisions to deposit money into commercial banks. It helps customers to minimize transaction costs, and to save time, which customeres are very interested in dealing with banks. The bank's reputation is reflected in commitments that it made to customers, for example: a bank always secure its original commitments on saving services despite of fluctuations in the market. A good reputation is built on a nice image that is well-known and well-received by customers all over the country.

It is said that the reputation and prestige of brand are considered the formal trend in modern banking activities during the past decade. The financial and managment solutions have been made to ensure banking growth through the diversification of products and services.

Second, The factor "Price" has the second strongest impact with $\beta = 0.198$. When the customers' satisfaction on price increase by one unit, the customers' decisions to deposit money go up 0.198, provided that other factors remain constant.

In order to push customers' decisions, BIDV Tan Binh branch needs to keep stable prices for its products. The bank must focus more on products which will give customers opportunities to enjoy higher interest rates, lower service fees, and more suitable payment methods.

Third, The factor "Products and services quality" has the lowest impact with $\beta = 0.031$. As the level of quality awareness increases by one unit, the customer's decisions to deposit money rise up 0.031 units, provided that other factors remain constant.

Although the quality factor has the lowest influence, BIDV needs to focus on investing in product and service qualities. Specifically, the process of making transactions must be easier, faster and more accurate. In addition, it is necessary to add products to meet the needs of customers.

After finishing this topic, with meanings and limitations drawn, the authors will accumulate more knowledge and experiences experienced for the research process. As for our research direction, we will try a specific bank to increase the practical applicability of this research, then will expand the scope and time duration of the survey by selecting in other areas, changing subjects, increasing sample sizes, doing research for foreign commercial banks... We hope that those research results will be the basis for strategic senior managers in the development of banking system.

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OVERVIEW OF METHODOLOGY FOR VERIFYING AND DECISION IN AUDITING

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Abstract: *Judgment and Decision Making (JDM) is an important part of the auditing from customer acceptance to completion of the auditing. Studying aspects related to Judgment and Decision Making of auditing decisions is interesting but no less complicated. In the context of this article, the author introduces an overview of the Judgment and Decision making research in auditing starting with emphasizing the importance of judgments, then the experimental design method and finally a number of major schools of study in Judgment and Decision Making. This paper discusses judgment and decision making research in auditing, research that uses a psychological lens to understand, evaluate, and improve judgments, decisions, or choices in an auditing setting.*

Keywords: judgment and decision making, judgment and decision making in auditing

JEL Code: M42

1. Introduction

In the world Judgment and Decision Making has been studied in accounting and auditing since the 1970s. This research is a combination of two fields of accounting auditing and psychology. The development of psychology provides the theoretical background and research methods for this field. However, this research in Vietnam is still relatively new.

Many studies undertaken in this domain of research also substantiate the significance of JDM in accounting and auditing. The review highlights the progress in the literature over the past three decades and also identifies the methodological limitations of previous research. The identified limitations will be useful for improving the research method of future JDM studies in accounting and auditing. The review also draws inferences on how JDM research in auditing, which is well established, could usefully guide future JDM research in financial accounting. Therefore, a preliminary introduction to the method of Judgment and Decision Making in auditing helps readers have an overview of this research school and will motivate similar studies to be conducted in the Vietnamese context.

2. The importance of Judgment and Decision Making in auditing

Over decades, academic and professional literature on auditing has recognized the importance and extent of Judgment and Decision Making in auditing. (Accountants (1955); Libby & Frederick, 1990) emphasize that “Judgment is the most important factor when conducting audits”. According to Mautz (1959) “Judgment plays an undisputed role in auditing”. Judgment appears in every aspect of the auditing from receipt of the customer to the completion of the auditing. The table below cites some examples of the auditing and judgment necessary for that activity (Bamber et al, 1995).

Table 1. Some judgments used in the audit process (extract)

Auditing operations	Judge the related profession
Determine the critical level	Critical level in the auditing; Business risk is acceptable
Identify auditing objectives and management assertions	Evaluation of critical auditing areas; Importance of businesses, overbalances management assertions
Assess potential risks	Assess the impact of business environment of customers on auditing risks; Assess the impact of potential risks management assertion of financial statements
Evaluation of internal control system	Evaluate the ability to improve efficiency when auditing if the control risk is low; Assess key control risks against management assertion of financial statements

Source: Bamber et al, 1995

According to Trotman (1996), in the field of accounting and auditing, judgment and decision making (Judgment and Decision making research is also known as (Human Information Processing research). The purpose of this study is to understand individual and group judgment and decision making in audits. The main objectives of this type of research include:

- Evaluating the quality of judgment of auditors. For example, the degree of consistency in the judgment of different auditors on the same issue; Accuracy of judgment; Does practical experience lead to bias in judging?

- Describe how the auditors made the decision and the factors that affect it. For example, what information is used when making a decision; What factors (such as the source of evidence) influence the choice of decision making information; What factors determine whether the auditor is affected by the recency bias?

- Judgment and Decision Making (JDM) tests the theory of the cognitive process, which makes judgment. This study focuses on understanding the role of knowledge and ability to remember when making judgments in auditing. For example, what kind of knowledge is needed to complete the various audit procedures; the role of knowledge in the ability of auditors to perceive problems, formulate hypotheses and find information to process; which factors affect the auditor’s ability to remember the audit evidence; How does the ability to remember affect the judgment of the auditor?

With the important role of judgment, judgment and decision making research is necessary because the main objective of this research is to clarify the influencing factors, contributing to improving the quality of audit activities.

3. Experimental design

Judging and decision making research can take many forms such as analytical research, archival research, field study research. This article mainly deals with experimental research for judgment and decision making.

According to Kerlinger (1973), experiment is an investigation in which scientists regulate and control one or more independent variables and observe the fluctuations of variables occurring simultaneously depending on the change of independent variables.

Experiment can be done in laboratory settings or on field settings

Laboratory experiment are the experiments in which the fluctuations of all or almost all independent variables having influence but not related to research issues are kept to a minimum. This is done by manipulating independent variables in tightly controlled situations, isolated from normal practice.

Field experiment are the experiments carried out under real-world conditions in which one or several independent variables are regulated by a scientist under the most controlled conditions allowed by the actual situation. The difference between laboratory experiment and field experiment is not so obvious because it mostly depends on the level of independent variable control.

The advantage of experimental research eliminates the confounding factor that makes research judgments complicated, helping the researcher to focus on certain variables while keeping other variables constant, while also helping they examine situations that do not exist in reality. While databases for judgmental research are often unavailable, review of auditing records may be possible, but judgments presented on papers when working are often influenced by a variety of factors which make it difficult to determine the influence of determinant factors then experimental research is the best option. Firstly, due to its ability to control the independent variable, it is possible to draw a causal relationship between the independent variable and the dependent variable after the test. In addition, it also helps researchers to regulate accurately and deliberately the independent variables that interest them.

Goals of Experimental research

Experimental research is structure, strategy for investigation to answer research questions and error control. Experimental research provides the answers most validly, objectively, accurately and economically as possible.

Types of Experimental research

Post-test Only Control Group Design

The general form of this design is:

R	X1	O1
R	X2	O2

Study subjects were randomly allocated to treatment groups X1 and X2, in which those X are independent variables. Within each group, this independent variable will receive an experiment to some degree. Therefore, the groups will receive different levels of experiments. Depending on the number of test levels, the number of X will be able to increase (X1, X2, X3, X4, ...) according to the number of groups. Besides, there may be the participation of the control group, for example, X1 is the testing group and X2 is the control group (non-test group).

The dependent variable will be measured after the study object is affected by the experiment (O1 and O2). Therefore, this design is called Post-test only design.

If X2 is the control group, a comparison of the O1 value of the test group and the O2 of the non-test group will indicate whether an experiment will actually affect the study subject.

If X1 and X2 are both test groups (each group receives different levels of testing), comparing O1 and O2 will show a different effect of the two tests but there is no difference in the impact of whether tested or not tested is shown as the case above.

Pre-test/Post-test Control Group Design

The general form of this design is:

R	O1	X1	O2
R	O3	X2	O4

Study subjects were randomly assigned to one of two experiments (this could include 2 testing groups or 1 testing group and 1 control group). Each group will perform a task and the results will be measured and recorded (O1 and O3). After that, the groups will receive the experiment (or not if it's the control group). The performance results of each group will be measured and recorded again after the experiment (O2 and O4). The performance before and after the experiments O1 and O2 of group X1 will be compared with the work efficiency of O3 and O4 of group X2 (the group received experiments at a level different from X1 or did not receive experiments if X2 is the control group). This shows whether testing increases work efficiency before and after the test.

This type of design has advantages over Post-test Only Control Group: Helps test whether the study object is randomly allocated. This is shown by comparing work results between the groups before the experiment (comparing O1 and O3).

Factorial Design

This design simultaneously tests two or more independent variables to determine the effect of each variable on the dependent variable and the interaction effect between them on the dependent variable.

The simplest case of Factorial Design is 2x2. Including 2 independent variables, each variable is regulated at 2 experimental levels. Thus, 4 combinations are made up of 2 variables and 2 levels. Test subjects were randomly allocated to 4 combinations. This case is also called "Between subjects design" because each object falls into one combination so it only receives one experimental level.

Advantages of Factorial Design:

- Allows the researcher to evaluate the interaction effect between independent variables on the dependent variable.
- Help control confounding variables by putting them in the test as an independent variable.
- Help increase the external validity of a study. For example, the auditor's experience may be a confounding factor. If the experience is included in the study as an independent variable, a constant research result from different levels of experience will increase the generalization of the study.
- Increase economic efficiency because the number of test subjects is less than doing two or more separate experiments. For example, according to Ismail and Trotman (1995) when

investigating the impact of discussion factors and the rank of reviewer on the effectiveness of the review process. Instead of performing two separate experiments to test each factor (these two factors can be tested separately because there is no interaction between them), the author put both variables into the factorial design. reducing the number of auditors required to participate compared to the case of designing two separate experiments.

Within-subjects design

For Between-subjects Design, each experimental object is involved in only one processing. As with Within-subjects Design, each experimental subject participates in all processing of that experiment. For example, test the effect of feedback on judging the auditor's continuous performance in situations of varying complexity (easy / difficult). According to the factor design, there will be four combinations: feedback / complex situations, feedback / simple situations, no feedback / complex situations, no feedback / simple situations. If the "Between-subject Design" model is used, each test object will be randomly allocated to one of the four combinations. If the "Within-subject Design" model is used, each object will participate in all four combinations.

Some advantages of the "Within-subject Design":

- Requires a few subjects to participate in the experiment because all subjects take part in all experiments. Therefore, the number of objects required for research is also the number of objects required for a treatment in that experiment.

- The results of the study were statistically better because one subject was constant across all treatments of the experiment, so the error was less. In other words, each object is used as a factor to control the experiment results through different treatments.

However, this design also comes with some disadvantages:

- Experimental subjects exposed to all processing in the experiment led to their ability to predict the purpose and hypothesis of the research from which behave differently from what they performed in reality.

- When the test is repeated many times, the test object will get used to it, thereby doing better in subsequent processing, or it may lead to fatigue and boredom.

- Influence at the first handling can be brought to and affect the performance of test subjects in the next processing times.

In conclusion, factorial design is quite popular in the above mentioned research designs. In addition, when designing judgmental research in auditors, researchers need to decide whether to use the "within-subjects" or "between-subjects" test types when considering the pros and cons of these two types.

In the next section, the article discusses some of the key research contents of judgmental research in auditing including Policy Capturing Research, Information Search, Hypothesis Generation and Protocol Analysis in audit. Each type of research will present concepts and a number of mainstream studies. Although there are many theories of judging research in the auditing, within the scope of this article, the author only mentioned the two research directions mentioned above.

4. Some research content in judgmental research in auditing - Theory and method

Policy Capturing Research

Research judgment model in auditing is quite popular research theory. The objective of the study is to develop a mathematical model describing how the auditor conducts judgments to reveal judgment strategy or policy.

Test subjects are provided with a range of critical situations along with a variety of clues. After that, many statistical methods are used to build a judgment model based on the relationship between the suggested and judged information. Each situation contains a number of hint information (independent variables), each hint information has different levels. The auditor’s judgment is a dependent variable in the research model.

For example, a study by Ashton (1974) explores the effect of information on internal control on the auditor’s judgment on the effectiveness of the salary process control system. The situation here is to evaluate the effectiveness of the internal control of the salary process of a hypothetical firm. The suggested information (independent variable) is the six questions of internal control related to this process (for example, are the payroll employees separate from the cashier or direct payroll person?). To answer the above control question, the independent variable can contain either “yes” or “no”. Audit judgment about the effectiveness of salary process control (dependent variable) is measured by a six-point scale from “very weak” to “strong enough”. A similar test is the second test conducted after 43 to 94 days from the first test to test the consistency of the auditor’s judgment over time. The ANOVA method is used to analyze the influence of six information suggesting differences in the judgment of the auditor’s salary control effectiveness.

Table 2. Ezample of an Internal Control Case Used in the Erperiment

Case No.	Yes	No
1. Are the tasks of both timekeeping and payment of employees ndequately separated from the task of payroll preparation?	X	
2. Are the tasks of both payroll preparation and payment of employees adequately separated from the tank of payroll bank account reconciliation?		X
3. Are the names on the payroll checked periodically against the active employee file of the personnel department?		X
4. Are formal procedures established for changing names on the payroll, pay rates, and deductiona?	X	
5. Is the payroll audited periodically by internal auditors?	X	
6. Was the internal control over payroll found to be satisfactory during the previous auditing?	X	

Source: Ashton, 1974

The main reason for judging model research is to check the consistency of judgments among auditors in the same situation, evaluate the importance of each information that suggests the judgment, the stability of the judgment over time and the level of self insight that auditors use when making judgments.

Note, this type of research mainly shows a purely statistical correlation between the independent and dependent variables rather than helping to understand the nature of the auditor’s cognitive

process when making judgments. This statistical relationship has certain meaning, based on which to propose solutions to improve the quality of professional judgment of auditors (Ashton, 1982).

ANOVA was first used in the model of audit judgment by Ashton (1974). ANOVA measures the significance and percentage of variation of the dependent variable caused by the main effect (independent variable) and interaction between the independent variables. A major effect (generated by the hint information independent variable) that is statistically significant between processes indicates that the auditor's judgment is systematically influenced by the change of the suggested information. Similarly, a statistically significant interaction between two suggested information (two independent variables) indicates that the auditor is reacting to this interaction. Regression In addition to ANOVA, Regression and Discriminant Analysis are also used to auditor's judgment model such as business bankruptcy studies by Libby (1975), Kida (1980), Simnett and Trotman (1989). In addition to the above methods, to evaluate the use of suggested information when making audit judgments, it is possible to use conjoint analysis like Ashton (1982). However, this method is uncommon because the results are similar to the simpler method like ANOVA.

Information Search, Hypothesis Generation and Protocol Analysis

Studying the above judgment model often provides the test subjects with clear situations with reliable data to make decisions. However, in practice, the auditor often has to judge in the context of lack of information and unclear situations. Therefore, the need to find information, formulate hypotheses as well as affirm or negate hypotheses is necessary.

Information Search

Kida's (1984) case study examines the hypothesis's influence on the information to be sought and the auditor's use of information. Kida verifies the auditor's confirmatory strategy. The auditor is provided with one of two assumptions as to whether the business continues to exist or goes bankrupt; the auditor is asked whether the enterprise will survive or go bankrupt in the next two years. To answer this question, they were provided with some information, of which half showed the possibility of bankruptcy (for example, the management said the possibility of losing large customers, doubts about the capacity of the management ...), half show the viability (for example, the current technology is competitive, the company's main products are well rated by customers ...). Kida found little evidence of the existence of an auditor's confirmation strategy. In other words, if the auditor receives a potentially bankruptcy business situation does not mean that they are attracted by the information confirming the bankruptcy hypothesis when judging whether the business continues to exist or not. However, Kida found that the auditor in both existent and bankruptcy cases paid attention to bankruptcy information. This shows the caution in the judgment of the auditor.

After Kida, many other studies related to the confirmatory strategy in auditing were conducted. Most research results show that there is no evidence of confirmatory strategy when the auditor is seeking information to judge.

Hypothesis Generation

Most of this type of research involves analytical procedures in the audit, when the auditor detects abnormal fluctuations, then hypothesis generation explaining the cause of the fluctuations, eventually

gathering evidence to justify that hypothesis. The study of hypothesis generation was given and audited by Libby (1985). Libby tests the auditor's prior knowledge of financial reporting errors in the hypothesis generation to explain the fluctuations in the current financial statements. Some studies have also found an important effect of experience on the process of hypothesis generation of auditors (Bedard & Biggs, 1991; Kaplan et al., 1992; Libby & Frederick, 1990). Research by Ismail and Trotman (1995) explores the effect of review process on the development of hypothesis of auditors.

Protocol Analysis

Protocol Analysis studies are concerned with the way in which judgment of the auditing is formed. The most common method used to record this is "Verbal Protocol Analysis". According to this method, the test object is provided with a situation and is required to perform a certain task, for example, showing the scope of the audit procedure, commenting on the audit program, indicating the hypothesis on the cause of a certain fluctuation in financial statements. When doing the above, the subject is asked to speak their thoughts and this is recorded. The researcher then analyzes and encodes the recording to draw conclusions.

The first audit study to use this technique is Biggs and Mock (1983), which explores the auditor's decision-making process when evaluating internal control systems and determining the audit scope.

Some benefits of protocol analysis. Firstly, it helps to understand the judging process, thereby improving the quality of judgment of the auditor. Secondly, it helps to check the process of seeking information to make audit judgments. Accordingly, the order of information collection is revealed and the time the study subject for that information is determined. Third, help test the hypothesis. A theoretical generalization can be affirmed or rejected in the presence or absence of certain information when analyzing the protocol of a research object.

5. Conclusion

This study has provided experimental evidence concerning the extent of judgment inconsistency in the evaluation of internal control. When specific auditors were considered, some inconsistency was found to exist in this relatively simple judgment task. Additional research is needed in order to determine why the judgments of particular auditors are inconsistent. For example, do individual factors, situational factors, or some combination of both account for judgment inconsistency? Research is also needed to determine the effects of inconsistent internal control judgments. If subsequent research provides evidence of deleterious effects of inconsistent internal control judgments, then reduction of such inconsistency may be a worthy objective for public accounting firms to pursue. A prerequisite to the reduction of judgment inconsistency is the recognition of its existence and the identification of its possible reasons. The techniques demonstrated in this paper can be used for both purposes. The correlation technique allows us to identify those auditors who disagree with each other, as well as those auditors whose judgments are relatively inconsistent over time. The analysis of variance technique provides a means for identifying possible reasons for those inconsistencies. The possible reasons would be represented by differential weightings of the various internal control indicators used. The knowledge gained from an application of these techniques could guide firms that wish to influence the extent to which auditors rely on particular

indicators. Since criterion values are generally not available, that is, the “true” state of an internal control subsystem may not be known, it is not possible to derive “true” statistical weights toward which the auditors should strive. It is possible, however, for someone in a position of authority within a firm to prescribe approximate guidelines for statistical weights. Of course, the specification would be made on relative basis and might, initially, involve only a ranking of the indicators. The firm might then undertake training programs to encourage auditors to use the various internal control indicators to the relative extent prescribed for each indicator. This would amount to the adoption of a judgment “strategy” to be promoted by the firm and communicated to the auditors who make such judgments. With the preferred strategy “out in the open,” discussion among those involved might lead to changes in the strategies originally specified. Different strategies would be necessary for different internal control subsystems. This is essential for internal controls in Vietnam. Likewise, the basic strategy might have to be adjusted for the same subsystem clients of different sizes (or perhaps for each client), but such adjustments could be made on the basis of specific client differences, and an entirely new strategy would not have to be developed for each review.

The article summarizes gives readers the most general overview about the method of judging research in auditing. Experimentation is the most common way to understand judgment and decision making in audits. Therefore, the experimental design should be considered when conducting research. There are many options such as posttest only control group design, pre-test/post-test control group design, factorial design, between-subject design, within subject design. The choice of design depends on the purpose of the study, the number of subjects able to participate in the experiment and the time and economic conditions. In addition, a number of key research on audit judgment are also briefly introduced including Policy capturing research to build a statistical model describing the factors that influence the auditor’s judgment. This is the dominant idea for several decades. There is also information search that learns how auditors search and select information to judge; Hypotheses generation is mainly used in auditing studies for analytical procedures; Protocol analysis explores the cognitive process upon which the auditor forms the judgment. Of course, there are many detailed issues related to the aforementioned ideas and there are many other research ideas that the author cannot cover in its entirety, but with the above mentioned contents contributing to help readers get a general picture of the research method to judge audit decisions, a relatively new research content in Vietnam.

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ANALYSIS OF FACTORS AFFECTING NON-INTEREST INCOME OF COMMERCIAL BANK: AN EMPIRICAL CASE IN VIETNAM

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Abstract: *The outbreak of Covid-19 made the socio-economy to become unstable, adversely affecting the income from traditional credit activities of commercial banks. The diversification of non-credit services to create non-interest income of commercial banks is one of the smart solutions of banks. This study aims to determine the impact of factors affecting non-interest income of commercial banks. The research results have provided an empirical evidence that the non-interest income of Vietnamese commercial banks in the period 2009-2019 is influenced by factors including Return on Total Assets, Bank Size, Equity on Total Assets, Bank Loans on Total Deposits and GDP. This research has an important meaning in helping bank administrators and policymakers have more bases to come up with appropriate solutions and orientations towards a safe, stable, and sustainable development.*

Keywords: *Non-interest income, Diversification, Non-credit services*

JEL codes: N1, M20, G21

1. Introduction

In the bank's income structure, if interest income plays a key role (accounting for 80% of total income), non-interest income from non-credit activities becomes the second largest source of profit. On average, it accounts for over 20% to 35% of total bank income (Nguyen, T.N.L., 2016). In fact, credit activities are no longer attractive to banks because their profit margins are easily volatile. It depends on the difference between input costs (deposit rates) and output costs (lending rates), which contains high risks because of the bad debt burden. The bad debts of banks may increase or be uncontrollable, even banks lose their liquidity... The heavy dependence on interest income will make the bank face great risks when a crisis occurs. Hawtrey (2003) has researched and stated that: "Due to being less affected by the health of the economy, as well as a safe, stable and low risk income source, non-interest income has been interested by banks as a solution and orientation for sustainable and long-term development". An empirical study by Sang, N.M, & Linh, T.T.T (2018) on income diversification and total asset size at commercial banks in the ASEAN shows that the size of total assets has a positive impact on diversification income of the commercial banks system in the ASEAN.

Currently, under competitive pressure from the international integration process and the explosion of the 4.0 technology revolution, non-credit products tend to be more and more diversified, innovative, and modern. Cashless payment products are the trend, transactions at

home or online payment on mobile phones, computers, Mobile Banking, Internet Banking, ... A sharp transformation from a model of “credit monoculture” to a diversification model of non-credit services is a smart choice for commercial banks. Diversification of non-credit services will contribute to enhancing the bank’s competitiveness with the quality of products and services and mode of service. The importance of non-interest income from non-credit activities to commercial banks is undeniable. However, to achieve the highest efficiency in the development of non-credit activities, bank administrators and policymakers need to come up with appropriate policies and strategies in each stage. To do this, they need to have sufficient basis and empirical evidence for policy formulation. Therefore, the study examines group of factors that directly affect the non-interest rates of commercial banks to provide more empirical evidence from the Vietnamese banking market over a 10-year period from 2009-2019.

2. Theoretical Framework and Methods

2.1. Theoretical basis and previous empirical studies

Theoretical basis

The hypothesis of Scale effect states that the debt quality of commercial banks is influenced by the bank size. According to this hypothesis, bank size has a negative impact on bad debt. Due to the advantage of size, large banks will bear a lower cost in bank management and supervision. This helps large banks reduce credit risks arising from asymmetric information between lenders and borrowers. Results of empirical studies on this relationship are also inconsistent. Some studies showed a positive relationship between bad debt and bank size, such as: Louzis et al (2010), Das and Gosh (2007), Le (2016), but other studies indicated that bank size is negatively related to bad debt, as Salas and Saurina (2002).

According to the Regulatory Hypothesis, managers often require banks to increase their equity in proportion to the level of credit risk. Therefore, the relationship between bank capital and credit risk is considered to be the same direction, which means that the higher the credit risk, the more bank capital increases. Empirical results of Pettway (1976) support this theory.

Income diversification is an interesting research category in the financial sector. Diversification process through non-credit services is very important for commercial banks, especially in the competitive environment that is getting more and more pressured. According to the theory of Diamond (1991), banks have gathered the customers’ information through the lending process. This facilitates banks in the cross-selling of their products such as insurance services, brokerage services, guarantee services or mutual fund services ... Thus, banks are participated in a variety of non-credit activities to increase their non-interest income.

Previous empirical studies

Non-interest income or income from non-credit activities, is commercial banks’ income that formed from the difference between the sale revenues and the implementation costs of non-credit products and services. This income is called non-interest income or non-credit activity income. Income from non-credit activities includes income from foreign exchange trading, gold, silver and gemstones trading, securities trading and other service activities after deducting relevant expenses for these revenues (Tien, H.N., & Hien, V. T, 2014).

Rogers & Sinkey (1999), Stiroh (2004), Huang & Chen (2006) said that the bank's income is classified by business activities including two main business segments: traditional and non-traditional activities. The difference between these two segments is that non-traditional activities generate income from fees while traditional activities generate interest income. Non-traditional activities include all activities that generate income from fees and charges such as guarantee services, cash management or custodial services, ... According to the authors, non-interest income is a heterogeneous income and generated from many different activities. It is divided into the following main components: trust income, service fees, trading sales, charges, and other income.

Brunnermeier et al (2012) also showed that non-interest income is a mixture of heterogeneous and diversified components. One of the bank's fee revenues comes from the provision of services such as deposit services, credit card services, electronic money transfer services, ... In addition, it also arises from other activities such as securities brokerage, securities issuance guarantee, insurance brokerage, real estate brokerage, ... Bank also generates revenues from off-balance sheet trading activities as letters of credit (L/C), foreign exchange services, derivative securities services... Thus, non-interest income includes income (from fees or investments) associated with a bank's non-credit services.

Hakimi et al (2012) studied the model of non-interest income in Tunisian commercial banks. Their findings show that technology and bank size have a significant impact on non – interest (liquidity, borrowing), meanwhile the macro factors such as real GDP growth, inflation rate have an insignificant impact.

DeYoung, R., & Rice, T. (2004) researched on non-interest income and financial performance in American commercial banks. The research results show that total assets and growth rate have a positive impact on non-interest income of the banks. Meanwhile, loan rates have a negative impact on non-interest income. Non-interest income accounts for 40% of the total income of US banks and tends to coexist with interest income. Many later studies also agree with DeYoung et al (2004). They also find a positive effect of non-interest income on profit volatility (such as Chiorazzo, Milani, & Salvini, 2008; Sang, N. M., 2013; Laeven & Levine, 2007; Stiroh & Rumble, 2006).

Chien-Chiang et al (2014), researched on non-interest income, profit and risk in the banking sector in Asian countries. Their results indicated that non-credit activities reduce risks for the banking sector in Asia's middle and low-income countries. However, this trend is reversed in high middle-income countries. That means non-credit activities increase risks for banks.

Hidayat et al (2012), also studied the relationship between risk and non-interest income of banks in Indonesian. Research results showed that diversification of non-credit products and bank's risk which depend heavily on the size of the bank's assets. For large-scale banks, the diversification of non-credit products is proportional to the bank's risk. On the contrary, for small and medium banks, this diversification reduces the bank's risk.

Stiroh (2004) showed that American banks are gradually increasing their dependence on non-interest income. However, the diversification of non-credit products also increases risks for banks. His findings indicated that the current year's GDP has a positive effect on non-interest income, but GDP has a negative effect on non-interest income at lags 1 and 2.

Engle et al (2014) and Hung, Đ.V. (2019), studied macro factors affecting non-interest income of commercial banks in Vietnam. The research results displayed that GDP, inflation rate, interest rates and national governance performance index are inversely proportional to non-interest income.

Through the above studies, we can see that theoretical determinants of bank performance and financial resilience stem from two broad sources: (i) micro bank-specific factors and (ii) macro-economic factors. In this paper, we will be interested in the macro factors which include real (GDP) growth and inflation rate, interest rate, and consumer price index (CPI). For the micro bank-specific factors, we consider ROA, ROE, bank size, equity, debt, liquidity, total loans to total assets ratio.

2.2. Data and research models

Research data is collected by the author from the annual audited financial statements of 25 Vietnamese commercial banks over a 10-year period from 2009 to 2019. Unlike commercial banks, Vietnam Bank for Social Policies operates not-for-profit, and the bank’s solvency is guaranteed by the Government of Vietnam. This bank’s required reserve ratio is 0%. In addition, Vietnam Bank for Social Policies is not required to participate in deposit insurance and is exempt from taxes and other amounts payable to the state budget. As for 100% foreign owned banks and joint venture banks, in essence, they are just subsidiary banks that are governed by parent banks. These types of banks are not suitable for the purpose of this study, so the data does not include social policy banks, 100% foreign owned banks and joint venture banks. The dependent variable in this study is non-interest income (NII), which calculated from the total income from non-credit activities such as: Net profit / loss from service activities, net profit / loss from foreign exchange, trading, gold trading, securities trading and investment capital contribution. With the independent variables listed in Table 1, the study uses the multivariate regression model to test the factors affecting non-interest income as follows:

$$= + + + + + + +$$

In which:

$i = 1,2,3,\dots,25$: representing i^{th} bank

$t = 1,2,3,\dots,11$: number of years

Intercept coefficient and original coefficients of independent variables do not change over time. The residual measures the difference between different banks over time and space

Table 1. Summary of variables in the proposed model

Variables	Notation	Expectation	Description	Researches
Dependent variables				
Non-interest income	NII		Total income from non-credit activities on total assets	Hakimi et al (2012); DeYoung, R., & Rice, T. (2004); Chien-Chiang et al (2014) Sang, N. M., (2013)
Independent variables				

Return on Asset	ROA	+	Return/total assets	Chien-Chiang et al (2014); Stiroh et al (2006); Sang, N. M., (2013)
Return on Equity	ROE	+	Return/Equity	DeYoung, R., & Rice, T. (2004); Chien-Chiang et al (2014); Stiroh et al (2006); Sang, N. M., (2013)
Bank size	Banksize	+	Natural logarithm of total assets of each bank	Hakimi et al (2012); DeYoung, R., & Rice, T. (2004) Chien-Chiang et al (2014); Stiroh et al (2006); Engle et al (2014); Sang, N. M., (2013)
Bank's capital	CAPITAL	+	Equity/total assets	Hakimi et al (2012); Chien-Chiang et al (2014); Stiroh et al (2006); Engle et al (2014); Sang, N. M., (2013)
Bank loan	LOAN	-	Bank loans /total deposits	Hakimi et al (2012); DeYoung, R., & Rice, T. (2004); Chien-Chiang et al (2014); Stiroh et al (2006); Sang, N. M., (2013)
Bank's liquidity	LIQUIDITY	+	Total deposits / total assets	Hakimi et al (2012); Sang, N. M., (2013)
Lending rate	IR	-	Annual average lending rate	Hakimi et al (2012); Engle et al (2014); Hung, Đ.V. (2019)
Gross Domestic Product	GDP	+	Real GDP	Hakimi et al (2012), Stiroh (2004); Engle et al (2014); Hung, Đ.V. (2019)
Inflation rate	INF	-	(Average price - Price in the previous period) / Price in the previous period * 100%	Hakimi et al (2012); Engle et al (2014); Hung, Đ.V. (2019)

Source: the author's synthesized

2.3. Research Methods

To test the effects of variables in the model as well as test hypotheses mentioned above, the author used multiple regression method on panel data to assess the impact of each independent variable on the dependent variable. Regression techniques applied on the research samples include Pooled OLS, FEM, REM. In addition, estimating regression coefficients by using cross-panel data can lead to a discrepancy due to cointegration phenomenon or variance change phenomenon. Consequently, to ensure that the estimation results are not biased and more accurate, the study used the GLS estimation method of Arellano and Bond (1991) to correct shortcomings of these two models. Breusch & Pagan test and Wooldridge test are used to check the suitability of model as well as the validity of exogenous variables.

3. Results and Discussion

3.1 Results of descriptive statistic

Table 2 shows that the mean of non-interest income to total assets (NII) ratio in the observed sample is 0.66%. In which, the lowest and highest NII ratios are -2.82% and 2.95%, respectively. A standard deviation of 0.54% shows a significant variation between banks over time. Median value indicates that about 50% of the observed banks have non-interest income of 0.63%. The average

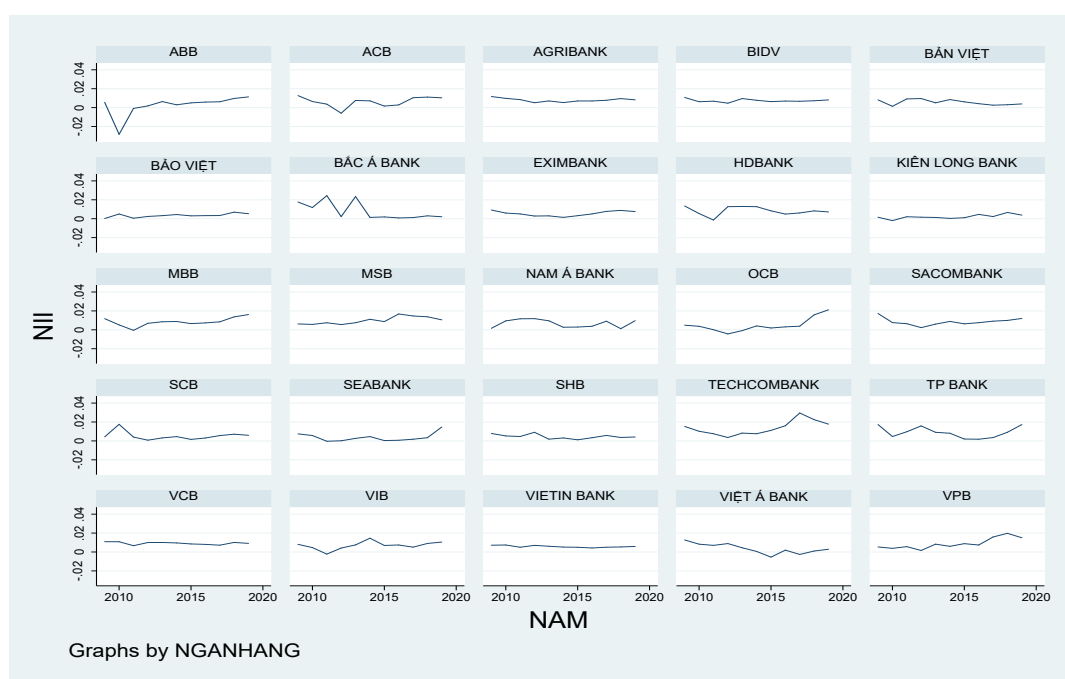
ratio of loan to total deposits (LOAN) of banks is 76.81%. This ratio points that the efficiency of using capital at banks is not high. The lowest bank can only lend 24.15% of the total deposits. Only about 50% of the observed banks have a loan to total deposits ratio of 76.36%. The average value of the rate of return on total assets of banks is 0.79%. There is a large difference between the bank with the highest ratio - 2.68% and the bank with the smallest ratio -0.09%. Up to 50% of banks in the sample are lower than the average value, only 0.67%. Bank size reached an average value of 18.53, of which the largest bank is 21.12 and the smallest bank is 15.01. About 50% of banks have the same size as the average value. This shows that the size of Vietnamese commercial banks in the period 2009-2019 is not too different.

The independent variables in the research sample are listed in detail in the table below:

Table 2: Descriptive statistics of samples

Variables	Mean	Max	Min	S.deviation	Median
NII	0.0066	0.0295	-0.0282	0.0054	0.0063
ROA	0.0079	0.0268	-0.0009	0.0055	0.0067
ROE	0.0931	0.2682	-0.0131	0.0641	0.0804
Banksize	18.5361	21.1220	15.0185	1.2081	18.5361
CAPITAL	0.1270	1.7617	0.0126	0.2034	0.0821
LOAN	0.7681	1.3855	0.2415	0.1757	0.7636
LIQUIDITY	0.7064	0.9034	0.0181	0.1637	0.7301
GDP	6.2288	7.0800	5.2474	0.6261	6.2403
INF	6.2693	18.6755	0.8786	4.6510	4.7100
IR	10.1563	16.9538	6.9600	3.0956	10.0690

Source: the author's calculated



Source: the author's synthesized

The results of detailed analysis of non-interest income (Figure 1) of each bank displayed that most large-scale banks get relatively stable non-interest income rate (including VCB, VIETINBANK, VPB, MSB, BIDV, AGRIBANK, EXIMBANK). Small and medium-sized banks have high volatility in non-interest income (including ABB, BACABANK, VIET A BANK, OCB).

3.2 Research results

The study uses a method of parametric estimator in a linear regression equation. General model applies the Ordinary Least Square model (OLS), Fixed Effects Model (FEM), Random effects Model (REM) to analyze the impact of the independent variables on non-interest income (NII) of the Vietnamese commercial banks. Based on the regression models, the author will gradually eliminate the independent variables which are less statistically significant and choose the model based on analyzing the coefficient R2. By phasing out the highly correlated and statistically insignificant independent variables, the variables that cause the multi-collinearity phenomenon are also excluded (ROE, INF). The regression results are listed in Table 3.

Table 3: Results of full regression estimator

Variables	Expectation	Pooled OLS	FEM	REM	GLS
ROA	+	0.5180*** (0.000)	0.5424*** (0.000)	0.5499*** (0.000)	0.6752*** (0.000)
ROE	+	-0.0116 (0.274)	-0.0149* (0.198)	-0.0140* (0.195)	-0.0208** (0.003)
Banksize	+	0.0073** (0.032)	-0.0005 (0.448)	0.0004 (0.282)	0.0077*** (0.000)
CAPITAL	+	-0.0055 (0.247)	-0.0068* (0.163)	-0.0063* (0.170)	-0.0104* (0.011)
LOAN	-	0.0039 (0.420)	0.0007* (0.108)	0.0005 (0.213)	0.0009** (0.032)
LIQUIDITY	+	-0.0002 (0.899)	-0.0044 (0.216)	-0.0152 (0.559)	0.0013 (0.262)
GDP	+	-0.0003 (0.510)	0.0003 (0.591)	-0.0002 (0.664)	-0.0004* (0.128)
IR	-	-0.0001 (0.540)	-0.0001 (0.533)	-0.0001 (0.518)	-0.0000 (0.532)
INF	-	-0.0000 (0.680)	-0.0014 (0.350)	-0.0000 (0.565)	-0.0000 (0.532)
R square		0.19	0.17	0.16	

Source: the author's calculated

To choose the best method, the author used the Wald test to determine if the OLS or FEM model is more suitable. Wald test results (p-value = 0.000) show that FEM is more suitable. Then, Hausman test was used to choose between FEM and REM. The results of Prob> chi-square = 0.667 > $\alpha = 5\%$, indicated that REM is the better choice in this study. The Breusch and Pagan test results Prob> chi-square = 0.000 < $\alpha = 5\%$. This result points that the model has the variance

change, thus the estimate is no longer be a firm estimate for the nonlinear equation of the research samples. Due to the nature of the dynamic panel data, the GLS method will help us to overcome the above shortcoming and ensure to obtain a firm and efficient estimate. After regression by GLS method, we made a cointegration test. The results of the Arellano-Bond test shows that there is no first order autocorrelation (AR (1), Prob> F = 0.2536). With a significance level of 1% (99% confidence), return on total asset ratio (ROA) and bank size (Banksize) have a strong effect on the bank's non-interest income. With a significance level of 5% (95% confidence), ROE and LOAN have an impact on non-interest income. With a significance level of 10% (90% confidence), GDP and CAPITAL also have an impact on non-interest income. The remaining variables including LIQUIDITY, INF, IR have almost no impact or negligible impact on non-interest income.

4. Conclusions and Policy Implications

Based on the above research results, it can be seen that the ratio of total deposits to total assets (Liquidity), lending rates (IR), inflation rate (INF) do not affect non-interest income (NII) as p_value are greater than the selected significance level of 5%. In the observed period 2009-2019, non-interest income of commercial banks in Vietnam only depends on the ratio of return to total asset (ROA), Bank size, the ratio of equity to total assets (CAPITAL), the ratio of bank loan to total deposits (LOAN) and GDP. Based on the experimental results of this paper, the authors give some notes as follows:

Return on total assets (ROA), is the factor that has the most powerful impact on banks' non-interest income (coef=0.6752). As expected, ROA has a positive impact on non-interest income (NII). This result is similar to the research result of Stiroh et al (2006) and Sang, N. M., (2013). This has an important implication to commercial banks. If banks want to reach a sustainable development and increase profits, it will be necessary to expand non-credit activities to augment non-interest income. Especially credit activities fell into the freeze in the current epidemic.

Bank size (Banksize), is the factor that has the second strong impact on non-interest income. As expected, bank size also has a positive impact on NII. This experimental result is similar to that of Hakimi et al (2012); DeYoung, R., & Rice, T. (2004); Chien-Chiang et al (2014) and Stiroh et al (2006). This means that the larger the size of the bank, the higher the rate of non-interest income.

The ratio of loans to total deposits (LOAN), has a positive effect on non-interest income. In this paper, the empirical result shows that non-interest income of Vietnamese commercial banks tends to coexist with interest income in the period from 2009 to 2019. This result is similar to the research result of Hakimi et al, 2012; Chien-Chiang et al, 2014. Contrary to the findings of this study, DeYoung, R., & Rice, T., 2004; Stiroh et al, 2006; Sang, N. M., 2013 believed that LOAN has a negative impact on non-interest income.

The ratio of equity to total assets (CAPITAL), has a negative effect on non-interest income. This result is completely similar to the study of Hakimi et al (2012), but contrary to the study of Chien-Chiang et al (2014); Stiroh et al (2006); Engle et al (2014) and Sang, N., (2013). With a significant coefficient (coef = - 0.01), this has an important meaning to help banks to come up with appropriate solutions and orientations. This result also shows that banks with a high market capitalization ratio will tend to invest in credit activities and narrow non-credit activities, leading to a decline in non-interest income.

Gross domestic product (GDP), has a negligible opposite effect on non-interest income. The results of this study are similar to those of Hung, Đ.V. (2019), but in contrast to the studies of Hakimi et al (2012), Stiroh (2004); Engle et al (2014). This is also completely consistent with the facts in Vietnam. As a middle-income country, if the economy grows well and inflation is stable, banks tend to invest in credit activities rather than expanding non-credit activities. This also leads to a decline in interest income.

By this empirical study, it can be seen clearly that commercial banks in Vietnam are following the general trend of banks in the world, which is the trend of increasing the rate of non-interest income. This is an inevitable trend towards safe, efficient, and sustainable development of commercial banks. In the context of the socio-economy facing the current epidemic, commercial banks must mobilize themselves to enhance business efficiency. The strategy of diversifying income from non-credit activities is also one of the smart solutions to bring stable profits.

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APPLICATION SCOPE OF STRATEGIC MANAGEMENT ACCOUNTING IN VIETNAMESE ENTERPRISES

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Abstract: *The article's general purpose is to estimate the extent to which strategic management accounting (SMA) is implemented in businesses in Vietnam. With data collected from 659 enterprises located in many different regions of the country as well as operating in a large diversity of industries, together with descriptive statistics method, the results of this research prove the fact that the number of businesses which are applying the complete procedure and other technics of strategic management accounting (applying 100% of the described content) is still moderate, but Vietnamese enterprises now have much interest in applying accounting as an effective tool to get information for their strategy orientation (- all the SMA technics in research are approximately 50 % or more in the described content). The extent to which SMA technics are completely applied is still limited due to many reasons, for example, the scale of businesses is small, accounting management is not organized, inexperienced accounting staff, lack of cooperation in units and departments in businesses, inadequate internal information systems, inefficiency in costs and expenses, some frequent changes in Law and Regulations, ...that cause difficulties for businesses to build their long – term plans. The cooperation and contributions from businesses, governmental organizations and education sector are all required so that we can promote the application of SMA in businesses, making the accounting information better and more useful for the need of its users in such a hard, globally and intensively competitive business environment today.*

Keywords: *Vietnamese Enterprises, Strategic Management Accounting, extent of implementation*

JEL codes: M14, M49

1. Introduction

As the formation and development of Strategic Management grow, the information provided by the Accounting Management System (AMS) gradually becomes inadequate. The application of SMA technics helps enterprises to identify both internal and external factors that affect their competitive positions. In other words, accounting can provide information that meets the requirements of strategic decisions and control, as long as it has the strategic point of view.

Despite the fact that some SMA technics have been introduced and taught in International Accounting Certification programs or Accounting Programs in universities and colleges, researches on the application of SMA in businesses in Vietnam are still very limited.

2. Literature review

2.1. What is SMA?

In 1981, the definition of SMA was first introduced by Simmonds in his article “Strategic Management Accounting” on the Management Accounting Magazine Vol. 59 (Roslender & Hart, 2003; Cinquini & Tenucci, 2010; Langfield-Smith, 2008). After a nearly - 40 – year period of development has passed, though, scholars have never totally agreed on a common definition of SMA in accounting papers.

Simmonds defined SMA as “*the provision and analysis of management accounting data about a business and its competitors, for use in developing and monitoring business strategy.*” (Langfield-Smith 2008, page 205). He assumed that the information about competitors (information related to costs, prices, market shares,...) played an important role in the process of developing and controlling a business strategy. After Simmonds’ definition and concepts, many other scholars continued to accept the role of analysing the information from competitors, especially in the process of identifying and establishing business competitive advantages. (Cinquini & Tenucci, 2010).

In 1988, Simmonds’ concept was repeated by Bromwich (Lord 1996, page 349) and was emphasized that enterprises should focus on external matters, for “*it is in the firm’s markets that profits are made and where competitors challenge the enterprise*”. Bromwich also developed Simmonds’s viewpoint, he assumed that enterprises should not only be compared to their competitors but also be evaluated by “*the benefits of the enterprise’s products both from the customer’s point of view and the firm’s perspective*”.

In this article’s study, using Simmonds and Bromwich’s point of view, the authors assume that SMA is the process of collecting, processing, analysing the Management Accounting Data on the enterprise, the competitors, the customers in order to be used in developing and controlling business strategies.

2.2. SMA application in reality

SMA application, in reality, can be perceived from two prospects: (i) Firstly, SMA can be conceived of as comprising a group of strategically oriented accounting techniques; (ii) Secondly, SMA can be viewed as concerned with the involvement of accountants in corporate strategic decision-making processes (Cadez & Guilding, 2008). In this article, the authors consider the SMA application in reality as the application of particular groups of SMA technics, which is the approach used by many researches before.

Though there are many different definitions and descriptions of SMA, the application of it in real life will always have at least one of these features: (i) environmental or marketing orientation; (ii) focus on competitors; and (iii) long-term, forward-looking orientation (Guilding et al, 2000). From 2000 to 2002, the SMA technics collected and classified by Guilding and partners reached the number of 20 (Guilding et al, 2000; Čadež et al, 2005; Guilding & McManus, 2002) and they were used by scholars in many researches (fully or partially), but still now, the list of uniform, generally accepted of SMA technics has not come into being. The main reason for this is the fact that we have not had a commonly accepted definition of SMA. SMA technics are subjectively identified after all.

With the same criteria used by as Guilding and partners used in listing the SMA technics, together with reference to other researches to adjust some technics to avoid repetition and concentrate on suitable and adaptable technics for Vietnamese enterprises, we bring the following 12 technics into the study:

- (1) **Attribute Costing:** In conformity with this method, products are made up of a package of attributes which constitute commodities that appeal to consumers. Attributes, which include operating performance variables, reliability and warranty arrangements, the degree of finish and trim as well as service factors, differentiate products and the matching of a product's attribute with the consumers' tastes determines a firm's market share (Guilding et al, 2000; Cadez & Guilding, 2008; Ojra, 2014). This technique can be interpreted as externally-oriented because the attributes of services are determined according to customer requirements (Dmitrović-Šaponja & Suljović, 2017).
- (2) **Target Costing:** Target costing refers to the process where a product is designed to satisfy a consumer need and a target cost is determined for the product. This target cost is subsequently strived for in order to earn a target profit level for the product. Target costing is implemented primarily during the development and design phases of the manufacturing process (Guilding et al, 2000). Based on the results of market researches, enterprises will estimate the prices of their products that should be acceptable in the market. With the "acceptable prices", enterprises plan their target profit for the product manufacturing, as well as for deciding on the maximum target cost for each product with reference to its anticipated price and expected profit. In certain circumstances in which the estimated cost of the product surpasses the target cost, the business must adjust its product design and the manufacturing process in order to cut down cost to match the target. (Guilding et al, 2000; Cadez & Guilding, 2008; Cinquini & Tenucci, 2010). This target costing philosophy can be categorised as strategic management accounting as it moves to cost away from a quest for accurate monitoring towards forward-looking costing philosophy aimed for competitive advantage (Guilding et al, 2000)
- (3) **Life – Cycle Costing:** The appraisal of costs based on the length of stages of a product or service's life. These stages may include design, introduction, growth, maturity, decline and eventually abandonment (Guilding et al, 2000; Cadez & Guilding, 2008; Cinquini & Tenucci, 2010). Its clear long-term accounting perspective and market orientation make it part of the group as SMA techniques (Cinquini & Tenucci, 2010). The pressure stemming from a traditional accounting approach that recognises the per annum loss accumulating during the design phase of a product's life may result in the premature market introduction. Management embracing the philosophy of life cycle costing, however, can be expected to recognise the importance that a thoroughly executed research and design phase carries for the product's lifetime profitability (Guiding et al, 2000)
- (4) **Quality Costing:** Quality costs are those costs associated with the creation, identification, repair and prevention of defects. These can be classified into three categories: prevention, appraisal, and internal and external failure costs. Cost of quality reports is produced for the purpose of directing management attention to prioritize quality problems. (Guilding

et al, 2000; Cadez & Guilding, 2008; Cinquini & Tenucci, 2010; Ojra, 2014; Dmitrović-Šaponja & Suljović, 2017). The modern competition also requires the monitoring of safety and environmental costs. In a strategic perspective, the technique must support the pursuit of quality (Cinquini & Tenucci, 2010)

- (5) **Benchmarking:** The technique involves identifying the best practices and comparing the organization's performance to those practices with the goal of improvement (Cadez & Guilding, 2008; Cinquini & Tenucci, 2010; Alnawayseh, 2013; Ojra, 2014; Dmitrović-Šaponja & Suljović, 2017). There are many types of benchmarking but, in general, they underline the external strategic orientation toward competitors (Cinquini & Tenucci, 2010). Using benchmarking increases competitive advantage, profitability and achieves continuous significant improvement in customer satisfaction (Alnawayseh, 2013)
- (6) **Balance Scorecard:** The technique is an integrated performance measurement system, in which financial and non-financial measures were integrated for strategic performance management purpose. It aimed to create a balance by linking the vision and strategy of the business with multi-dimensional perspectives of customers, internal business processes, learning and growth, and financial position (Dmitrović-Šaponja & Suljović, 2017). It belongs to this class, and its role in the strategic management cycle is apparent through the four perspectives (Cinquini & Tenucci, 2010)
- (7) **Strategic Pricing:** The analysis of strategic factors in the pricing decision process. These factors may include competitor price reaction; price elasticity; market growth; economies of scale; and experience. (Guilding et al, 2000; Alnawayseh, 2013; Ojra, 2014; Dmitrović-Šaponja & Suljović, 2017).
- (8) **Competitor Cost Assessment:** The provision of regularly updated estimates of a competitor's costs based on, for example, appraisal of facilities, technology, economies of scale. Sources include direct observation, mutual suppliers, mutual customers and ex-employees (Guilding et al, 2000; Cadez & Guilding, 2008; Cinquini & Tenucci, 2010).
- (9) **Competitive Position Monitoring:** The analysis of competitor positions within the industry by assessing and monitoring trends in competitor sales, market share, volume, unit costs, and return on sales. This information can provide a basis for the assessment of competitor's market strategy (Guilding et al, 2000; Cadez & Guilding, 2008; Cinquini & Tenucci, 2010; Ojra, 2014). According to the information provided, the company is able to assess its own position relative to main competitors and, consequently, control or formulate its strategy (Cinquini & Tenucci, 2010; Dmitrović-Šaponja & Suljović, 2017)
- (10) **Competitor Appraisal Based On Published Financial Statements:** The numerical analysis of a competitor's published statements as a part of an assessment of a competitor's key sources of competitive advantage. (Guilding et al, 2000; Cadez & Guilding, 2008; Cinquini & Tenucci, 2010; Dmitrović-Šaponja & Suljović, 2017). Today's international accounting harmonisation permits a simpler comparison between companies of different countries; (Dmitrović-Šaponja & Suljović, 2017)
- (11) **Customer Profitability Analysis:** This involves calculating profit earned from a specific

customer. The profit calculation is based on costs and sales that can be traced to a particular customer (Guilding và McManus, 2002; Cadez & Guilding, 2008; Ojra, 2014)

- (12) Valuation of customers as assets:** The technique refers to the calculation of the value of customers to the company. For example, this could be undertaken by computing the present value of all future profit streams attributable to a particular customer (Cadez & Guilding, 2008).

In the viewpoint of Cadez & Guilding (2008), the above SMA technics can be classified into five groups (Table 1). Three of them are named according to common practice in Management Accounting books and other materials, as follows: (i) Costing, (ii) Planning, control and performance measurement, (iii) decision-making. The other two groups are named (i) competitor accounting and (ii) customer accounting.

Table 1. SMA technics in research

TT	Groups of SMA technics	SMA technics	Abbr
1	<i>Costing</i>	Attribute Costing	AT
		Target Costing	TC
		Life – Cycle Costing	LCC
		Quality Costing	QC
2	<i>Planning, control and performance measurement</i>	Benchmarking	BENCH
		Balance Scorecard	BCS
3	<i>Decision-making</i>	Strategic Pricing	SP
4	<i>Competitor accounting</i>	Competitor Cost Assessment	CCA
		Competitive Position Monitoring	CPM
		Competitor Appraisal Based On Published Financial Statements	CPFS
5	<i>Customer accounting</i>	Customer Profitability Analysis	CPA
		Valuation of customers as assets	VCA

Source: Collected by the authors

3. Methodology

3.1. Samples:

Data in this research is collected in two forms: personal interviews (interview) and online surveys. The author prepared a questionnaire. In each personal interview, the interviewer asked questions in the questionnaire and wrote the answers in the answer sheet. As the enterprises in this study are in all parts of Vietnam, the authors also had the supports from many accounting lecturers who carried out the personal interviews. With online surveys, the questionnaire was converted into Google Forms. The email list to conduct this survey came from two sources: (i) the official email list of the listed companies and (ii) emails of graduated students of the Faculty. The companies in this research were selected by convenience sampling method. There was only one questionnaire for each company. The people responding to the survey were managers (head of departments) or accounting staff.

As stated by Dinh Phi Ho and partners, the sample size for estimation of population median, in case the population of Vietnamese businesses cannot be identified, is calculated by the formula as follows:

$$n = \frac{Z^2 p(1-p)}{e^2} = \frac{1,96^2 \cdot 0,5(1-0,5)}{0,05^2} = 384,16$$

Where:

n: the sample size to be identified.

Z: the value from *Z* – Score table with the confidence level of 95%.

p: probability of successful estimation of *n*.

e: tolerance

Based on the time and other resources given, the authors decided that the sample size was approximately 650 businesses.

3.2. Scale for SMA Application level

In practice, the names of SMA technics are rarely known in spite of the fact that enterprises have already adapted SMA to a greater or lesser extent (Guilding et al, 2000). Besides, in Vietnam, the authors have the assumption that there is little chance for applying the complete content of each SMA technics, but the provision of management accounting information – externally or market-orientated – is true, in one form or another. As a consequence, the survey questions used according to the scale for SMA Application-level have some changes compared to those of Guilding et al (2000), Cinquini và Tenucci (2010). The changes are: (i) The questions do not list the names of SMA technics, but they give descriptions on the steps of the technic's procedure; (ii) The five-level Likert scale changed from 1 (absolutely no) and 5 (great degree) to 1 (not applicable), 2 (apply less than 50% the described content), 3 (approximately 50%), 4 (more than 50% applied), 5 (apply 100% the described content).

4. Results and discussion

4.1. Statistics of Enterprises in the survey.

The survey was carried out from June 1st, 2019 to October 30th, 2019. The total survey forms collected (online and interview) was 671 (online: 248, interview: 423). In those forms, 12 were omitted due to lack of information and 659 remained. The studied enterprises were located in all parts of the country and the largest number (440; 66.8%) had headquarters in Ho Chi Minh City, the second is in Hanoi (65 enterprises, 9.9%). The answers came mainly from accountants (491, 74.5%) and middle management staff (142, 21.5%).

Based on the companies' tax identification number on the survey forms, the authors defined the main scope of activities of the business and made classification based on the Decision No 27/2018/ QD – Ttg (Table 2). The largest number of forms collected were from the field of Wholesales and retail; automobile and motorbikes and other kinds of motorized vehicles repair (221 companies, 33.5%), the second were companies in the processing and manufacturing industry (154, 23.4%).

Table 2. Main scope of activities of surveyed companies

STT	Scope of activities	Number of companies	Percentage (%)	Accumulative percentage (%)
1	Wholesales and retail; automobile and motobikes and other kinds of motorized vehicles repair	221	33,5	33,5
2	Processing and manufacturing industry	154	23,4	56,9
3	Construction	58	8,8	65,7
4	Transportation and Warehouse	52	7,9	73,6
5	Science, Technology and other specific activities.	52	7,9	81,5
6	Administrative and supporting activities	27	4,1	85,6
7	Real estate activities.	26	3,9	89,5
8	Hospitality, Food and Beverage services.	15	2,3	91,8
9	Information and Communication	15	2,3	94,1
10	Finance, banking and insurance	11	1,7	95,8
11	Education and training	8	1,2	97,0
12	Others	20	3,0	100,0
Tổng		659	100,0	

Source: Processed by SPSS 20.

Table 3. SMA Application in Enterprises

No	SMA technics	SMA Application													
		Mean	Mode	1		2		3		4		5		Total	
				NOE	Pct (%)	NOE	Pct (%)	NOE	Pct (%)	NOE	Pct (%)	NOE	Pct (%)	NOE	Pct (%)
1	AT	2,91	3	102	15,5	142	21,5	189	28,7	164	24,9	62	9,4	659	100,0
2	TC	3,12	4	77	11,7	100	15,2	206	31,3	218	33,1	58	8,8	659	100,0
3	LCC	3,16	4	79	12,0	104	15,8	194	29,4	195	29,6	87	13,2	659	100,0
4	QC	3,20	4	82	12,4	104	15,8	174	26,4	199	30,2	100	15,2	659	100,0
5	Bench	2,96	3	80	12,1	148	22,5	206	31,3	171	25,9	54	8,2	659	100,0
6	BCS	3,18	4	61	9,3	117	17,8	199	30,2	207	31,4	75	11,4	659	100,0
7	SP	3,29	4	49	7,4	110	16,7	193	29,3	215	32,6	92	14,0	659	100,0
8	CCA	3,03	3	70	10,6	125	19,0	243	36,9	160	24,3	61	9,3	659	100,0
9	CPM	3,06	3	64	9,7	134	20,3	227	34,4	167	25,3	67	10,2	659	100,0
10	CPFS	2,83	3	108	16,4	145	22,0	207	31,4	148	22,5	51	7,7	659	100,0
11	CPA	3,23	3	52	7,9	114	17,3	212	32,2	195	29,6	86	13,1	659	100,0
12	VCA	3,41	4	55	8,3	77	11,7	199	30,2	200	30,3	128	19,4	659	100,0

Note: NOE - Number of enterprises; Pct: Percentage

Source: Processed by SPSS 20

The statistics of SMA Application in Enterprises (Table 3) shows that:

- The number of businesses that apply SMA is low (applying 100% of the technics described – level 5 of Likert Scale): Valuation of customers as assets – VCA – has the highest “100% application” rate (19.4 % - 128/659 researched businesses), while Competitor Appraisal Based On Published Financial Statements – CPFS comes last, with the lowest rate of 7.7% - 51/659 businesses.

- Despite of that, the modes of all the technics fluctuates from 3 to 4, the mean levels of application are between the lowest of 2.83 (CPFS) to the highest at 3.41 (VCA), showing that most of the businesses have paid attention to externally oriented information and in those businesses,

information has been provided to managers by accounting staff, though not always in a standardized manner (applying less than 100% of the content of the technics described – level 3 or level 4 of Likert 5 – level scale):

- In comparison with enterprises in developed countries such as Australia (Chenhall & Langfield-Smith, 1998), Finland (Hyvönen, 2005), Italy (Cescon et al, 2019): Although there are differences in time and SMA technics of the research, the SMA technics, if compared one to one, are much less applied in Vietnamese enterprises than those in developed countries. The least SMA application levels in these countries are all over 50%, while the highest level in Vietnam is below 20%.

- In comparison with enterprises in developing countries such as Thailand (Nimtrakoon, 2009), the SMA technics application level in enterprises is also higher (over 20%) than in Vietnamese enterprises (under 20%).

- Comparison with researches on SMA application in Vietnamese enterprises: The results are more satisfactory than the results of Dang Nguyen Manh's (2019), To Minh Thu's (2019), Nguyen Thi Duc Loan's (2019). Considering the target cost technic in particular and generally the SMA technics, the researches listed above have the same result that is "not applied", while in this research, the authors have proved that there is application of SMA technics in enterprises in Vietnam, though the proportion of these is still low.

The difficulties assumed to be the reasons for not applying SMA or for the notion that SMA is not suitable for real business activities are listed in Table 5. The result proves that the low rate of complete implementation of SMA technics is the consequence of many factors, e.g. small business scales, no management accounting established, inexperienced accounting staff, lack of cooperation in different business departments, inadequate internal information technology, inefficiency in cost and expenses, frequent changes in Law and regulations, ... that cause difficulties for long – term business planning.

Table 5. Difficulties in applying SMA in businesses.

No	Notions	Number of businesses	Percentage
1	Business factor (small, low capital, newly established)	34	5,16%
2	Industries, form of business ownership	27	4,10%
3	No management accounting application	13	1,97%
4	Difficulties in human resources (quantity, the experience of staff/SMA not understood correctly, lack of knowledge of technology, lack of responsibility, conservative minds)	96	14,57%
5	Lack of cooperation.	17	2,58%
6	Difficulties in finding competitors' information.	8	1,21%
7	Perpetual changes in laws and regulations, difficulties in long – term planning.	10	1,52%
8	Inadequate Information Technology.	8	1,21%
9	Inadequacy in using costs and expenses.	10	1,52%
10	No ideas.	436	66,16%
Total		659	100%

Source: processed by SPSS 20

5. Conclusion

The results of this research show that the questions without the names of the SMA technics, describing the way to carry out and combined with the scale using the percentage of activities described in the surveyed companies will gather higher results on the SMA application level than former researches, but those levels are still much lower than the technics of traditional management accounting.

In spite of that, the authors assume that the results prove in reality: (i) The level of applying SMA in businesses is still very low, (ii) there is evidence that businesses pay much interest in externally – oriented information and managers are provided with information from business accounting, though the information is not always of high standards.

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INTERNATIONAL EXPERIENCES ON FINANCIAL POLICIES FOR DEVELOPING THE INDIVIDUAL ECONOMIC SECTOR AND EXPERIENCE LEARNED FOR VIETNAM

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Abstract: *Promoting the individual economic sector is one of the goals towards the sustainable development. Therefore, all countries have issued the financial policies to encourage and create favourable conditions for the development of the individual economy. Vietnam has also considered the economic individual sector as driving force or the backbone of the economy. This article uses a meathical approach to study documents on the experiences of countries such as USA, Russia, China, Singapore ... in the planning of financial policies that support and promote individual economic development. The author has pointed out the financial support in countries including direct support from the state budget and indirect support in the form of tax incentives, credit assistance. From the above results, the author draws lessons learned for Vietnam including price support, credit support, tax incentives for the private sector to promote the role of this region in national economic development.*

Keywords: individual economy, direct support from the State budget, tax incentives policy, credit policy.

JEL code: F38

1. Introduction

Financial policies for individual economic development, if classified according to the policy content, will include (i) tax and fee policies; (ii) credit policy, (iii) other policies.

Regarding tax-related policies, fees are a very important group of policies contributing to reducing the burden of taxes and fees for individual economic sectors. The contents of policies related to taxes and fees may include preferential policies (exemption, extension, reduction, deduction) for taxes (CIT, import, and export ...), for all kinds of fees (land rent, water surface rent). Thanks to these policies, businesses, and individuals of the individual economic sector can reduce the burden of taxes and fees to accumulate financial resources for production and business activities to create quality products. Preferential tax rates and fees also contribute to reducing tax evasion, complying with the provisions of law.

Credit policies related to concessional interest loans, guarantees, investment capital support, and reinvestment for individuals, business on the individual sector to solve capital problems with

preferential costs. The individual economic sector is popularly characterized by its small scale and limited capital, but with feasible plans and projects, it is essential to have effective credit policies. Credit policy will be an official and effective capital mobilization channel of the individual sector towards sustainable development.

Besides other policies, including support for site clearance compensation, infrastructure support expands to the fences of industrial parks, export processing zones, legal support, accounting, auditing; support in training costs; support policies on science and technology ... Because business households or individual enterprises are all individually owned, there will be many limitations in understanding laws, accounting regulations, or lack of business fees, information on science and technology, training of human resources, therefore, supporting policies on these issues are indispensable for individual economic development. Together with the policies on taxes, fees, and credit, a complete and synchronous policy framework will be created in many ways to fully support individual economic development.

Vietnam's individual economic sector has made certain progress, but there are still a number of limitations that lead to the fact that individual enterprises in the individual sector operate less efficiently than the other regions. In the remaining sector, the contributions of this sector are not commensurate with the potential. Specifically:

[1] Regarding mechanisms and policies, including financial mechanisms and policies:

Firstly, the legal and policy framework for economic development in general and the individual economy in particular still has shortcomings, is not synchronous, some contents are inconsistent, even contradictory. Some regulations and policies were inappropriately issued, low feasibility; cutting and simplifying business conditions in some ministries and branches have not come into reality, some documents show the division of state management rights of some ministries and branches.

Mechanisms and policies for the individual sector lack long-term stability, which may pose policy risks to businesses. According to Grant Thornton's 2019 Individual Investment Survey, 87% of investors expressed significant concern about the inconsistency in investment regulations and procedures when investing in a Vietnamese enterprise in the individual sector.¹

Besides, the effectiveness and efficiency of law enforcement are also very low. The phenomenon of law violation is quite common, the sanctions lack deterrence and there is still support between law enforcement forces and subjects governed by law provisions.

Second, the financial policies for the development of the individual economy in the period of 2016 until now have not changed much compared to the previous period, the CIT incentives still apply tax incentives according to 3 levels based on industries, domains eligible for investment incentives, geographical areas, and capital size by the Law on Investment.

Third, although it has codified the support for small and medium businesses (in which the individual sector accounts for the main proportion), however, the concretization of mechanisms and policies, including incentives in terms of tax, finance is still slowly being implemented. According to the assessment of the results of 02 years of implementing the SME Support Law of the Ministry

¹ CIEM (2019), "Health" Economic Research Report of the Individual Sector, Draft

of Planning and Investment, some SME support policies have not been implemented in practice, but the reason is due to incomplete legal regulations.

2. International experiences on financial policies for developing the individual economic sector

2.1. Policy on direct support from the State budget

The price support for economic activities have been applied by some countries to support the development of certain sectors and fields.

In the past, the United States¹ had provided the agricultural price support to the farmers affected by the 1929 recession until the 1990s. During 1995 and 2010, agricultural subsidies had increased to an average of US\$52 billion per year in which more than 6% is for products of corn and soybean. In 2012, the Government reduced 22% in agricultural subsidies, including a direct payment program of US\$5 billion. Half of the farmers receiving subsidies earned more than US\$100,000 per year. From 1995 to 2016, 10% of the farmers received 77% of the subsidy. In 2017, large farms developed quite well, generating a revenue of US\$1 million or greater, accounting for two-thirds of the national agricultural output. In field of environmentally-friendly energy: During 1970-2010, the industry specialized in corn processing received US\$20 billion from the federal subsidies. The U.S. Congress would like to shift to the production of ethanol, a material for producing the gasoline. The subsidies are intended to help manufacturers meet the government's target of US\$7.5 billion renewable fuels produced by 2012.

The Japanese government² introduced the stabilization program for farmers planting rice to cope with the fall of rice price in 1998 because the decline had negative effects on farmers. This measure compensated up to 80% of the loss between the market price of the current year and the average price of the past 3 years (standard price). Farmers had to experience 2% of the standard price to help generate the financial source while the government had to pay 6%. This was the first direct support for Japanese farmers at that time. The government has strengthened its subsidy policy specifically for other crops such as wheat and soybeans aiming to increase the rice price to reduce the budget support. The combination of direct support and the expansion of other fields is a progress of Japan.

The policy of direct payment support was further developed in 2007. Accordingly, the Farmers' Income and Management Stabilization Program was introduced. This program includes not only rice but also wheat, soybeans, sugar beets, and potatoes. The payment is calculated by the difference between revenue under international price and the production cost by domestic farmers. This payment is divided into 2 parts: (i) 70% based on production records in the past and the rest 30% based on the volume and quality of current products; (ii) the second part is aimed at minimizing the fluctuations in revenue: 90% of the difference between the current year's revenue and the average revenue of the middle 3 consecutive years of the previous 5 years in case the current revenue declines. Farmers had to pay 1% of the standard revenue to contribute to generate the financial resource while the government had to pay 3%.

¹ <https://www.thebalance.com/government-subsidies-definition-farm-oil-export-etc-3305788>.

² http://ap.iftc.agnet.org/ap_db.php?id=911.

The Cabinet of Thailand¹ has recently approved a budget of THB34.8 billion to support the prices of rice and palm oil for Thai farmers, in which the budget for the rice industry is THB21.5 billion to ensure the reasonable rice prices for farmers. Accordingly, it is estimated that around 892,000 households planting rice who registered with the Ministry of Agriculture and Cooperatives of Thailand will have the benefit. The purpose of the program is to help ensure the favorable rice prices for farmers against fluctuations in prices. This policy is applied within 1 year, starting from October 2019 with 5 types of products, including varieties for white rice, Hom Mali, Pathum Thani, sticky rice, and other varieties of aromatic rice. In particular, the Thailand Government ensures the price for producing the white rice stabilized at THB10,000 per ton (equivalent to about US\$325 per ton); sticky rice THB12,000 per ton (equivalent to about US\$390 per ton), etc.

Direct financial support for startup companies

For startup enterprises in general, the Netherlands government provides the support through “Ambitious Entrepreneurship Action Plan” with the goals making sure that the businesses can access to capital, knowledge, innovation and global market. To achieve the target, the Government has reserve EUR75 million to: (i) Provide finance for the first stage when the companies start studying on a concept or product which is feasible technically and suitable for the market; (ii) Heighten the international position of startup companies, attracting foreign startup enterprises to invest in the Netherlands through start-up initiatives; (iii) Provide temporary residence permits for non-EU businesses, giving them opportunities to start a business in the Netherlands; (iv) Development of initiatives, foundations for innovation and for the highly ambitious companies in order to help them grow faster; (v) Establishing the Eurostars Fund Project, which is an Innovative Technology Development Project including businesses and knowledge partners from at least 2 different European countries². In addition, the Netherlands central government has also increased spending on research and development (R&D) activities up to 2.5% of GDP by 2020 for innovative startup companies.³

The U.S. federal government spend US\$148 billion annually with the ambition to expand activities to promote business capacity, create completely new business fields, and increase the commercialization. The program contains initiatives of the National Association of Small Businesses, including: (i) Impact Fund (US\$1 billion) to support businesses in the new sectors such as environmentally-friendly energy, or for businesses in regions with poorer economic conditions than average, and the capital is provided in a ratio of 2:1 for venture capitals; (ii) The Innovation Fund support for the start-up stage with a value of US\$1 billion for businesses that have difficulties in accessing to capital (especially those who cannot receive the loans from banks because of not having the collateral), for companies with higher growth and higher risk, the ratio compared to the individual investment funds is 1:1.

For entrepreneurial ecosystem in Malaysia, a number of Government agencies have been established to provide financial support for the initial stage (seed funding) of startups enterprises, including the nonprofit investment agency (Cradle) and Malaysia Venture Capital Management

¹ <https://vietnambiz.vn/tro-gia-lua-gao-cua-thai-lan-con-dao-hai-luoi-doi-voi-viet-nam-20190925213407217.htm>

² The Foundation has supported drug initiatives to fight gastrointestinal infections, and funded the European Commission’s program named Horizon 2020 to promote the European research and innovation.

³ <https://www.government.nl/topics/enterprise-and-innovation/contents/the-government-supports-entrepreneurs>

Berhad (MAVCAP), both under the management of the Ministry of Finance¹. Venture Capital companies will make direct investments in various scale, ranging from MYR1 million to MYR20 million and proactively involve in the management and operations of startups enterprises. MAVCAP invests through Outsource Partners Programmes. Thanks to this, the company can allocate the capital to other venture capital management companies to make investment into high-growth businesses. Cradle provides a maximum capital up to MYR500,000 to help technology businesses achieve the commercialization. In addition, the Malaysian government also established a fund of US\$100 million (2010) to invest in startup enterprises and this is part of a 10-year expansion plan towards developing the hi-tech industry² and establish the Malaysian Global Innovation & Creative Center (MaGIC) to create a more favorable ecosystem for startups enterprises³.

The Korean government pledged to support US\$2.93 billion to invest in startup companies, especially businesses operating in the technology sector and US\$89 million to support unsuccessful businesses.⁴

2.2. Policies on indirect support to promote the development of the economic individual economic sector

2.2.1. Tax incentives

Most countries in the world focus on attracting and facilitating economic individual sector development mainly by adjusting the policies on Corporate Income Tax (CIT) and Value Added Tax (VAT).

Countries usually lower the rate of Corporate Income Tax to support the businesses further. The common average tax rate of 176 countries in the world was 24.2%⁵. Over the past decades, the corporate income tax rates of the European OECD countries have fallen sharply, from an average of 31.6% in 2000 to 21.9% in 2019. In which, the tax rate reduction of one the number of countries in recent years such as Belgium⁶: decreased from 33.99% to 29.58% in 2018 and down to 25% in 2020; The U.S. reduced the corporate income tax rate from 35% to 21% from December 31, 2017; France⁷: for businesses with an annual turnover of EUR250 million or greater, CIT rates have been reduced from 33.33% to 31% in 2020, 27.5% in 2021 and 25% from 2022 while for for businesses with annual turnover less than EUR250 million, the respective tax rates have been 31%, 28%, 26.5% and 25%; Greece⁸: reduced from 28% to 24% from 2019. Some ASEAN countries also plan to reduce the corporate income tax rate such as the Philippines⁹ since 2020 has adjusted the CIT rate reduction by 1 point of % within 10 years from the current rate of 30%; Indonesia¹⁰ plans to reduce the tax rate from 25% to 22% in 2021 and 20% in 2022.

¹ <http://www.thestar.com.my/news/community/2014/11/19/govt-incentives-for-startups/>

² <http://www.bloomberg.com/news/articles/2013-02-21/to-fund-a-startup-go-to-malaysia>

³ <http://www.thestar.com.my/news/community/2014/11/19/govt-incentives-for-startups/>

⁴ <http://www.cipe.org/blog/2014/11/21/a-new-entrepreneurial-growth-model-for-south-korea/#.WDauPn3CmM8>

⁵ <https://taxfoundation.org/2020-corporate-tax-rates-in-europe/>

⁶ <https://www.loyensloeff.com/media/69026/the-belgian-corporate-income-tax-reform-2018-2020-loyens-loeff.pdf>

⁷ <https://www.taxathand.com/article/12743/France/2020/2020-finance-bill-becomes-law>

⁸ <https://taxsummaries.pwc.com/greece/corporate/taxes-on-corporate-income>

⁹ <https://www.aseanbriefing.com/news/corporate-taxes-philippines/>

¹⁰ https://www.tax-news.com/news/Indonesia_Tables_Legislation_For_Comprehensive_Tax_Reform___97544.html

Other tax incentives such as tax exemption, reductions of CIT, VAT, and social security, etc. aiming to encourage investment activities in the development of startup enterprises and enterprises in the fields of software, e-commerce, small and medium enterprises (SMEs) producing the digital products to create the spillovers, leading to the development of other industries in economy.

For startup enterprises

Tax exemption: In Singapore, from the tax year 2005¹, the startup enterprises have been entitled to tax incentives specialized for startup enterprises² during the first 3 taxable years. Specifically: tax exemption applied for the first US\$100,000 income; Tax exemption 50% applied for US\$200,000 of subsequent income. (So the maximum tax-free income is $100\% * 100,000 + 50\% * 200,000 = \text{US}\$200,000$). From the fourth taxable year, businesses enjoy a partial tax exemption that applied to all businesses: tax exemptions for 75% of the first US\$10,000 of taxable income and 50% of US\$290,000 subsequent income (the maximum tax-free income of $75\% * 10,000 + 50\% * 290,000 = \text{US}\$152,500$)³. Ireland has applied a tax exemption policy for startup enterprises in the first 3 years since its establishment. Accordingly, in the first three years, if the enterprise has an annual tax rate of EUR40,000 or less, it will be exempted from tax with the exempt tax equal to the amount of social insurance contributions that enterprises have to pay for the employees, the maximum is EUR5,000 per person. In case in those 3 years, the enterprise does not use all the tax exemption limit, the enterprise can transfer the tax exemption to the following years. For enterprises in the first 3 years with annual tax payable from over EUR40,000 to EUR60,000, Ireland had applied the marginal tax exemption policy. Businesses with taxable income greater than EUR60,000 are not exempted⁴. South Korea⁵ has applied an extension of CIT exemption policies for income from dividends and capital transfers and stock exchange tax for direct investments in businesses listed on KONEX. The government of Malaysia⁶ has the tax exempt for “*angel investors*”⁷ when investing in the early stages of startup enterprises. The U.K.⁸ has provided tax exemption for the profits arising from the share transfer, in case of business failure, the enterprises will be supported.

Tax reduction: In Korea, the investments of KRW50 million or less are tax deductible at 50% (formerly 30%), investments over KRW50 million are deducted at 30%; tax deduction at 10% ap-

¹ In Singapore, corporate income tax is determined based on the previous year's income, meaning the 2015 income will be taxed in 2016 and 2016 is called the taxable year.

² This policy is applied to all newly established businesses, except for the following two types of businesses: (1) Enterprises whose main activity is financial investment; (2) Enterprises whose main activity is the real estate development for sale or investment, or for both sale and investment.

³ <https://www.iras.gov.sg/irashome/Businesses/Companies/Learning-the-basics-of-Corporate-Income-Tax/Common-Tax-Reliefs-That-Help-Reduce-The-Tax-Bills/>

⁴ <http://www.revenue.ie/en/practioner/tax-briefing/archive/2013/no-022013.html>

⁵ http://www.tax-news.com/news/South_Korea_Finalizes_StartUp_Tax_Incentive_Package___63264.html

⁶ <http://www.thestar.com.my/news/community/2014/11/19/govt-incentives-for-startups/>

⁷ Angel investors are rich individuals who invest directly in a business with their own money. The venture capital investors use money from calling or borrowing capital to invest in a business (usually through a Venture Capital Fund). Source: OECD Source (2011), “Financing High – Growth Firms”.

http://www.keepeek.com/Digital-Asset-Management/oecd/industry-and-services/financing-high-growth-firms_9789264118782-en#.WD_nAX3CmM8#page31

⁸ <https://www.seedrs.com/learn/guides/uk-tax-relief>

plied M&A activities related to R&D and technology. India¹ allows 100% tax deduction on profits in the first 3 years of start-up from April 2016 to March 2019. For venture capital investments, Malaysia² will deduct 100% of the applicable tax on the investment activities and exempt the import tax on multimedia equipment. The U.K. offers a 50% income tax reduction for individual investors; a 100% reduction in tax payable on investment capital transfers when SEIS³ is introduced in the first budget year 2012 or 2013, after which the reduction is applied at 50%.

For enterprises operating in priority fields such as science and technology, software services, and manufacturing digital products

China⁴: In order to encourage the development of technology/software production, China has implemented tax incentives for this sector, specifically: The income from technology transfer worth below CNY5 million will be exempted from corporate income tax; income exceeding CNY5 is reduced at 50% of corporate income tax; Foreign organizations investing in Science and Technology centers and organization researching on science and technology in China are entitled to VAT refund on machinery and equipment imported for software research (December 31, 2015 is no longer valid); Software companies are exempted from import tax on machinery, equipment and materials, etc. In addition, China also encourages the establishment of incubators and science parks to research and develop the Science and Technology through the exemption of CIT from website rental, providing services to companies etc.

Russia⁵: In order to attract R&D activities in a number of areas to enhance the country's innovation potential, the Russian government has set up the Skolkovo Innovation Center – considered as Russia's Silicon Valley - and applied the tax policy specialised for this center. Businesses operating here are exempted from income tax, VAT, and property tax; reduction of social insurance contribution to 14% for annual income of RUB796,000 (equivalent to US\$10,700) or less and exemption for income exceeding the limit. To entitle the above policies, businesses must meet the following conditions: R&D activities in 5 priority areas (efficient energy technology; nuclear technology; space and telecommunications technology; biomedical technology, information technology); commercialization of research results in the 5 areas above, including intellectual property transfer, R&D consulting services and associated production with results of R&D activities.

Thailand⁶: Thailand Science Park was established in 2002 as a center for the integration of Science & Technology research and development. Tax incentives for businesses operating in this park are: (1) Tax exemption for the machinery and equipment imported; (2) Corporate Income Tax exemption for 8 years; (3) 50% Corporate Income Tax reduction after tax exemption period; (4) Facilitate the issuance of work permits and visas to foreign researchers and experts.

¹ <http://www.dnaindia.com/money/report-budget-2016-start-ups-get-100-tax-exemption-for-3-years-on-profits-2183981>;
<http://indianexpress.com/article/business/budget/budget-2016-tax-sops-give-big-push-for-start-up-india/>

² <http://www.thestar.com.my/news/community/2014/11/19/govt-incentives-for-startups/>

³ The first program named UK Seed Enterprise Investment Scheme - SEIS

⁴ <http://download.pwc.com/ie/pubs/global-rd-incentives.pdf>

⁵ <https://www2.deloitte.com/content/dam/Deloitte/ru/Documents/tax/tax-incentives-in-russia-2016-en.pdf>

⁶ <http://www.sciencepark.or.th/index.php/en/access-to-capital/rad-investment-incentives-a-privileges>

From 1 January 2014, Portugal extended tax incentives for research and development activities until 2020 and reduced tax on profits left for reinvestment¹. Spain expands tax credit deductions² for research, development and hiring the employees with disabilities, imposing lower tax rates on profits earned from patents.

Malaysia³ has implemented tax incentives for important new projects from January 1, 2016, under which 100% CIT exemption for 05 years for newly established companies, companies expanding food production projects; in 10 years for the company implementing a new food production project.

Some countries narrow their tax base by increasing the percentage of deductible expenses to support research and development (R&D), SMEs and investments, or increase depreciation support to reduce the tax burden for enterprise. For instance, Austria increases the rate of deduction on the costs of R&D activities from 10% to 12% in 2015⁴ and from January 1, 2016, there will be no tax on income arising from capital transfer activities of enterprises⁵. Italy increased the depreciation rate to 40% for the purchase of fixed assets from October 15, 2015 to December 31, 2016⁶. Poland implements tax exemptions on venture capital income and income from the commercialization of intellectual property by educational and research institutions, but this provision will expire at the end of 2017⁷. Turkey increases the percentage of deductible expenses for R&D activities to 100%, applying until December 31, 2023⁸. Japan⁹ plans to expand the percentage of deductible expenses for R&D activities between 6% - 14% from October 1, 2017 (current regulation is 8% - 10%) to meet current demand either increase or decrease the R&D costs of businesses and contribute to promoting R&D investment.

For businesses operating in field of e-commerce

The rapid development of e-commerce has had a significant impact on global businesses, so corporate income tax policies have been adjusted in many countries to keep pace with the development of technology and models of digital business. In Singapore¹⁰, effective e-commerce businesses enjoy a preferential CIT rate of 10% in five years on income generated from e-com-

¹ Tax reforms in EU Member States: 2014 Report, working paper N.48 – 2014, European Commission.

² Tax credit means that a taxpayer is entitled to a partial deduction of tax obligations from the total tax payable to the State. Tax credit is considered as a support from the State to encourage investment.

³ <http://www.nst.com.my/news/2016/10/182274/2017-budget-tax-incentives-companies>

⁴ OECD (2016), “*Tax reform in the OECD 2016*”

⁵ <https://www.dlapiper.com/~media/Files/Insights/Publications/2015/04/GuidetoGoingGlobalTax.PDF>

⁶ [http://www.ey.com/Publication/vwLUAssets/Italian_Parliament_issues_budget_law_for_2016_including_Country_by_Country_Reporting_and_other_important_tax_measures/\\$FILE/2015G_CM6111_Italian%20Parliament%20issues%20budget%20law%20for%202016%20including%20CbC%20Reporting%20and%20other%20important%20tax%20measures.pdf](http://www.ey.com/Publication/vwLUAssets/Italian_Parliament_issues_budget_law_for_2016_including_Country_by_Country_Reporting_and_other_important_tax_measures/$FILE/2015G_CM6111_Italian%20Parliament%20issues%20budget%20law%20for%202016%20including%20CbC%20Reporting%20and%20other%20important%20tax%20measures.pdf)

⁷ OECD (2016), “*Tax reform in the OECD 2016*”.

⁸ <http://www.pwc.com/gx/en/tax/corporate-tax/worldwide-tax-summaries/assets/pwc-worldwide-tax-summaries-corporate-2015-16.pdf>

⁹ https://www.eytax.jp/pdf/newsletter/2016/Japan_tax_alert_22_Dec_2016_e.pdf

¹⁰ <https://www.guidemesingapore.com/taxation/corporate-tax/industry-specific-tax-incentives>

merce transactions with partners outside Singapore. In Malaysia¹, foreign companies providing e-commerce services to Malaysian consumers are subject to a withholding tax rate of 10% of the amount the customer pays to the company. However, the rate of withholding tax can be reduced according to tax agreements between Malaysia and other countries. In France², French businesses that buy e-commerce services from foreign businesses (with or without business establishment in France) have to keep 1/3 of the payable amount and fully pay this amount (by nature of withholding income tax) to the tax collector. This kind of withholding tax may be reduced in accordance with the existing tax agreements. However, if the French enterprise does not deduct the withhold tax, it is subject to a fine equal to 50% of the amount payable to the service providers abroad. Hungary reduced VAT rate for internet access service from 18% to 5%. In Switzerland, the VAT rate applicable to e-books is reduced from 7.7% (common tax rate) to 2.5%.

For small and medium enterprises

Most countries have applied CIT rates to SMEs at a level lower than the common CIT rates (common at 10%, 15%, 17%, 19% and 20%). In addition, tax exemption and reduction forms are also commonly applied. In Thailand³, the Government offers CIT incentives for new investment projects of small and medium enterprises under the „*Strategy to promote new investment for the period 2015-2021*” in order to enhance competitiveness and their new investments in the international market⁴. As a rule, in addition to CIT incentives, the implementation of new investment projects will be exempted from corporate income tax for 2 to 8 years (depending on the importance of the production sector that the project performs⁵) and exempt from import tax (effective from January 1, 2015). Enterprises with new investment projects are entitled to incentives if they invest in one of 06 groups of production sectors and 02 groups of services (including 38 production and service activities), including: (1) Manufacturing of bio-fertilizers and organic fertilizers; (2) Manufacturing of glass or ceramic products; (3) Manufacturing of musical instruments; (4) Manufacturing of metal products or metal parts; (4) Manufacturing of rubber tires; (5) Manufacturing of electrical products or electrical components; (6) Pharmaceutical production; (7) Operation of logistics service centers; (8) Providing cinema support services. In Cambodia⁶, Decree No. 124 R.N.Cr.BK, which came into force on October 2, 2018, provides important tax incentives for small and medium enterprises that operate in prioritized sectors in Cambodia⁷. Accordingly, the decree stipulates:

¹ <http://ebiz.pwc.com/2013/04/malaysia-guidelines-on-taxation-of-ecommerce/>

² http://www.tax-in-france.com/xws189_e-commerce-corporate-income-tax-withholding-tax.asp

³ OECD (2018), “*Financing SMEs and Entrepreneurs 2018*”.

⁴ <http://www2.deloitte.com/content/dam/Deloitte/global/Documents/Tax/dttl-tax-thailandguide-2015.pdf>

⁵ http://www.boi.go.th/tir/issue/201412_24_12/cover.htm

⁶ <https://www.dfdl.com/resources/legal-and-tax-updates/cambodia-tax-update-sme-tax-incentives-announced/>

⁷ The priority sectors identified in Cambodia are: (1) New industries or manufacturing joint ventures with the possibility to enter new markets, with innovative, high value-added, and competitive products, not only consuming products but also equipment manufacturing and assembling machinery, mechanical/electronic/transport assembly and resource processing, etc.; (2) Small and medium enterprises in all sectors, especially those involved in the manufacture of drugs and medical equipment, construction materials, export packaging equipment, furniture and industrial equipment; (3) Agricultural-industrial production for export and domestic markets; (4) Supporting industries for agriculture, tourism and textiles as well as industries serving regional production chains linked to global markets or global value chains as linkages forwarding and for industries that are linked with raw material

- Income tax exemption for 03 years for newly registered businesses or from the date of tax registration update for existing businesses.

- Income tax exemption for 05 years for newly registered businesses or from the date of tax registration update for existing businesses, meeting one of the following criteria:

- + Enterprises using at least 60% of local materials; or
- + Enterprise increases 20% of the number of employees; or
- + Enterprise located in the area of small and medium enterprise clusters

- Exemption of 1% of income tax paid in advance every month and minimum annual tax during the period of income tax exemption.

- Incentives for deductible expenses, including:

+ The rate of 200% deducting expenses for accounting software, training based on information technology and technical training for employees.

+ The cost deduction rate of 150% for new equipment or technology that increases efficiency.

2.2.2. Credit policy supports individual sector

For startup enterprises

Governments of countries implement the credit policies to support the startup enterprises in many different forms, for example based on the model of Micro-Loan Scheme (MLS) and model of Loan Insurance Scheme (LIS) such as in Singapore either through a specific program (Malaysia, Japan) or an investment credit in an incubator (the U.S.).

The Malaysian Government has established the SME Investment Partner Program to provide investment capital during the start-up stage in the forms of loans or equity¹. Similar to Malaysia, the Japanese government initiated a special finance program for startup enterprises in December 2001, entitled „*New Startup Loan Program*”, under which the The National Life Finance Corporation lends to startup enterprises up to JPY10 million with no collateral or guarantee required for a period of up to 5 years for working capital loans and up to 7 years for capital used to buy equipment².

For small and medium enterprises

Japan: 03 government credit institutions specializing in providing credit to SMEs: (1) People's Finance Institutions with the main function of lending to SMEs, especially for small businesses with family nature; (2) The Japanese financial institution for SMEs mainly provides necessary long-term capital supplementation for SMEs, and also provides management consulting services, intermediary services on partners ...; (3) Industrial and commercial banks mainly provide addi-

supply networks (in the form of backlinks, especially for the apparel industry) for the manufacturing of parts and the assembly of other semi-finished products; (5) industries serving the regional production chain and those of strategic future importance such as information technology, telecommunications, energy, heavy industry, culture/history/craft traditional technology and green technology.

¹ <http://www.bloomberg.com/news/articles/2013-02-21/to-fund-a-startup-go-to-malaysia>. To accomplish this goal, the initial fund size was RM375 million provided within the first 5 years. In addition, RM10 million was allocated to the Business Accelerator Programme.

² http://www.chusho.meti.go.jp/sme_english/bestpractice/04/outline.htm

tional credit for SMEs in order to implement local policies in SME development. Thailand: Four banks for SMEs: SME Development Bank; Bank for Agriculture and Rural Development, Government Savings Bank, and Export-Import Bank. The banks' responsibility is to promote and help SMEs to establish, expand and enhance businesses by offering loans, insurance, project financing, consulting and other necessary services. China: Supporting through funds: SME Development Fund, SME Support Fund to develop service system, Fund for promoting and expanding international market for SMEs, SME Technical Patent Fund; The Fund calls for investment in small and medium enterprises in field of science and technology.

3. Experience learned for Vietnam

Firstly, policies on direct support from the state budget to businesses is also applied in some countries, and often focuses on product price support (food, foodstuff, renewable fuels etc.) to help businesses deal with difficulties when market prices drop. It is necessary for Vietnam to review price support policies aimed at promoting areas prioritized for development.

Secondly, Corporate Income Tax incentives are always the first chosen by many countries in order to promote individual sector development. Policies on Tax exemption and reduction are also commonly used. These are also considered indirect support from the state budget to the individual sector. Tax incentives are creating inequality among businesses from the level of preferential access. Specifically, according to many experts, although the tax incentives are uniformly applied to all economic sectors, the foreign-invested economic sector is enjoying more. According to the Ministry of Finance, the amount of tax incentives is increasingly large, about the 2016 CIT incentives, the State has reached over 46,800 billion VND (about 2 billion USD), the FDI sector is 35,500 billion VND. Generally, for 3 years (2014-2016), the amount of tax incentives for businesses has reached over 117,000 billion VND. On average, the FDI sector is enjoying an exemption or reduction, receiving a total of 91.9% of the total CIT payable. Meanwhile, Vietnam's individual enterprises are only entitled to 17.8% of tax incentives, while the state-owned enterprises are only 4.8%. In the coming time, Vietnam should review the tax incentive policies to further attract the resources from the individual sector and create favorable conditions for individual enterprises to have opportunities and time to accumulate resources for development.

Thirdly, accessing to the capital has been one of the important issues for individual sector that governments of other countries have paid attention to create favorable credit policies. According to the assessment of the results of 02 years of implementing the SME Support Law of the Ministry of Planning and Investment, some SME support policies have not been implemented in practice, but the reason is due to incomplete legal regulations. It is a mechanism to support access to capital for SMEs through the guarantee of the Credit Guarantee Fund; capital support for SMEs from the SME Development Fund... Besides, although the institutional framework for the stock market, the corporate bond market has been completed, contributing to diversifying mobilization capital channels, especially medium and long-term capital for businesses. However, some issues such as the supply of the market, the variety of products as well as the lack of professional investors in the stock market are issues that need to be further studied and completed to increase the attractive to the market. Vietnam should have credit policies suitable to the context and conditions of the individual sector in the coming time.

4. Conclusion

Inheriting and developing logically acknowledging the “multi-sector economy” of the 6th Congress (1986), at the XII Congress, the Communist Party of Vietnam continues to affirm “Individual economy is an important driving force of economy”. Based on this point of view, the 5th Conference of the 12th Party Central Committee issued Resolution No. 10-NQ / TW on Individual economic development to become an important driving force of a market-oriented economy. Socialist with the general goal of “Healthy, efficient and sustainable individual economic development has become an important driving force of the socialist-oriented market economy, contributing to rapid and sustainable socio-economic development, constantly improving people’s lives, implementing social progress and equity, ensuring national defense and security, and making our country soon become an industrial country. modern direction ”and specific orientations for the individual sector’s development have brought a new impetus to the strong development of the individual sector. On that basis, the Government issued Resolution No. 98 / NQ-CP on the action plan for the implementation of Resolution 10, the resolution’s propaganda message is to build the “State for creation of development” and “Government action ”with the main goal is to properly position the role of each sector in the economy, promoting the role of” an important driving force of individual sector “.

Therefore, 2016 is considered an important milestone in the rebooting of the individual sector with a series of policies of the State as well as ministries and sectors promulgated towards the individual sector... The spirit of “tectonic state” with the main axis of “action government” has become a guideline for all actions from the central to local levels. In particular, the financial policies continued to be revised and supplemented to create a complete legal framework, creating equality among economic sectors, giving businesses in the individual sector many opportunities and advantages, beneficial to develop. The highlight in this period is shown through the two things that are (1) the enactment of the Law on SME Support - in order to legalize the specific support for SMEs, specifying specific supports in tax, finance, and regime accounting for small and medium-sized enterprises, micro-enterprises, enterprises transformed from individual business households, innovation enterprises, enterprises participating in chain links; (2) reforming administrative procedures, reducing business conditions, and specialized inspection in all sectors, especially tax and customs.

Efforts in perfecting financial mechanisms and policies have contributed to creating new dynamics for the individual sector to excel in quantity and increase in quality. However, financial policy institutions are bound and related to many sectors, so a number of amendments, including amendments to the reduction of SME support tax rates, have been proposed but have not been approved; Tax and customs reforms are appreciated but there are still shortcomings that need further reforms, ... also create certain barriers to the development of the individual sector.

In the coming period, continue to create, act, and financial policies in the next period to continue to amend, supplement, and improve.

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EXAMINE THE EFFECT OF INTERNAL CONTROL ON VIETNAMESE BANKS' PERFORMANCE: CASE AT STATE-OWNED COMMERCIAL BANKS

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Abstract: *This paper aims to analyze the effect of internal control on Vietnamese banks' performance, especially at State-owned commercial banks. By using the qualitative research methods (discuss and interview the experts in those banks) and quantitative research method (multiple linear regression method), the authors have identified four factors that affect banks' performance including (1) Credit environment; (2) Risk assessment; (3) Control activities; and (4) Monitoring. Besides, the large extent of each statistically significant factor of internal control has been estimated and explored. Based on the research results, the authors have given some discussion and evaluation of those components role in managing, improving, and maximizing banks' performance.*

Keywords: *internal control, banks' performance, State-owned commercial banks*

JEL codes: G21, L2

1. Introduction

The banking system in any country will have a large contribution to the development of its economy. Currently, the function of a bank is not limited to the same geographical boundaries of any country. Banking system is considered as an important source to finance the operations and activities of the businesses (Nimalathasan, 2008). The primary purpose of a bank is to maximize the returns and minimize the level of risk based on its own financial capacity (Hempel et al., 1996). It can be said that the banks' performance refers to the capital and assets in generating sustainable profitability. There are some criteria to measure banks' performance, such as return on equity (ROE), return on assets (ROA), net interest margin (NIM), earning per share (EPS)... These ratios can evaluate the effectiveness and efficiency of the banks in their operations (Rozanni & Rahman, 2013). Besides, there are other researchers used non-financial indicators to measure banks' performance, such as Robert & Norton, 1996; Kaplan & Norton, 2001; Hussain & Hoque, 2002; Stede, Wim, Chow & Lin, 2006.

The main purpose of this paper is to examine the relationship between the internal control and Vietnamese state-owned commercial banks. In order to solve the research objective, the authors aim to answer the question "to what extent each component of internal control affect banks' performance?".

2. Literature Review and Previous Research Studies

2.1. Literature Review

The banking system plays a very important role in the economy of each country in the world and it also acts as an intermediary for all sectors such as agriculture, construction, textiles, manu-

facturing. The banking sector thus contributes directly to national income and overall economic growth (Dash & Das, 2009). When the banking sector has a major impact on the economy in general, it is important and necessary for all banks to assess, analyze and monitor their assets, equity, and especially performance (Dash & Das, 2009). In this research, the bank's performance can be defined as a reflection of how a bank's resources are used in a variety of ways that enable the bank to achieve its own goals. In addition, the term banking efficiency means the application of a set of indicators that shows the current state of the bank and the extent to which the bank's ability to achieve its desired objectives, for example, profit maximization is equivalent to cost minimization. As the banking sector is considered an important segment of the modern economy, its effectiveness is becoming more and more significant. To ensure a sound financial system and an efficient economy, banks must be carefully assessed and analyzed.

Recent failures and the collapse of high-profit institutions around the world such as Barings Bank, Tyco in New Jersey, Bernie Madoff, Freddie Mac... have shown the evidence of the weakness or lack of implementation of internal control. Internal control covers the entire range of procedures, methods, and controls established by an organization in all industry fields to increase the probability to achieve its business goals (Institute of Internal Auditors, 2012; Umar & Dikko, 2018).

The banking sector today also has scoped with the relationship between the principal (the owners) and the agent (managers), also the conflicts in financial operations that happen as usual (Shah, 2014). This theory is called the Agency theory. This theory was recognized by Jensen & Meckling (1976) and later by Fama & Jensen (1983). The core idea of this theory is the arrangement of conflicting interests through the separation of ownership and management within the organization. The agents of the banks have more information than the principals because the agents directly manage and control all the main activities of banks. This leads to the creation of information asymmetry between the owners and the managers. Therefore, the interests and the ability of owners to monitor could be affected by the powers of the agents.

These issues can be minimized by using the appropriate mechanisms to limit the conflict of interest between the two parties, by establishing appropriate remedies for managers, and setting up effective monitoring mechanisms to limit the abnormal behaviours, the self-interest of the banks' managers. In this context, internal control is a crucial aspect of any organization's governance system and the ability to manage as well as remove the conflict to ensure the banks' performance.

COSO (1992) defines internal control as being influenced by the board of directors, managers, and other staff of the organization designed to provide a reasonable assurance of achievements, efficient operations, reliable financial reporting, and compliance with laws and regulations. The COSO definition of internal control extends to all objectives of an entity from financial reporting to proficiency and effectiveness of operations and compliance with applicable laws and regulations (COSO, 2013).

In 1992, COSO issued the original Internal control. In May 2013, this framework was revised and developed with the definition of internal control and guidance for application. In 2002, the Sarbanes-Oxley Act (SOX) was established and mandated into U.S. listed companies' adoption. The SOX has required these companies to set up their internal control efficiently over the financial

report. It means that applying a suitable framework and requiring a separate internal control to achieve the organizational objectives. In addition, many organizations use this framework voluntarily to improve their organizations create, develop, mature, and advance not only their financial reporting but also performance and profitability.

Also, according to Basel (2010), internal control is to ensure that top management establishes and maintains effective and efficient internal control systems. Systems and processes should be designed to ensure that the areas covered include financial and operational reporting compliance monitoring, internal and external regulations and policies, efficiency and effectiveness, and property protection. Lakis & Giriunas (2012) has identified internal control as part of corporate governance systems to ensure the organization's performance. At the same time, internal controls allow the organization to minimize the number of intentional and fraudulent errors during its business. Supporting this argument, Gamage et al. (2014) has also proved that a system of effective internal control can support and ensure the goals and objectives of banks will be met. It means that the bank may attain long-term profitability targets and maintain reliable financial and managerial reporting in case internal control is established and implemented in a synchronous and an effective way. Five components are presented by COSO: control environment; risk assessment; control activities; information and communication; and monitoring. According to Ayagre et al. (2014), in order for an organization to achieve its objectives, then the five control components must be integrated into management procedures in the banks, including their subsidiaries, branches, divisions, departments.

2.2. Previous Research Studies

Table 1. Previous research studies

No.	Author(s)	Research method	Research result(s)
1	Hayali et al., 2012	Content analysis	The internal control activities of the banks are adapted in Turkey and effective control procedures existed in the banking system. Internal control mechanisms have great impact on the strong and stable performance of banks in this country
2	Mahadeen, 2016	Using a structured questionnaire survey for objective target that is different managerial levels	Impact of the internal control system to organizational performance base on internal and external effects. So, the corporation emphasizes and improves awareness of the importance of content inspection system components and modes for improvement procedures and processes to improve the organization's effectiveness using different approaches
3	Nguyen Tuan, 2016	Quantitative methods	Analyze the impacts of Internal Control (IC) to IC objectives of Vietnamese commercial banks (performance and risk of bankruptcy). The statistically significant variables include information & communication; control environment; risk assessment; monitoring.

4	Umar & Dikko, 2018	Theoretically reviewing the relationship between internal control, and bank performance	Review the effectiveness of internal control systems on the performance of commercial banks in Nigeria. Also, banks' performance is measured by financial and non-financial dimensions
5	Negash, 2018	Descriptive research design, using a structured questionnaire survey	Company's internal control is effective because this company has a clear code of conduct related to management, procedures; risk assessment; adequate and strong dual control and separation of duties
6	Kabuye et al., 2019	Theoretically reviewing the relationship between internal control, working capital management and financial performance. Using qualitative methods and quantitative methods	Results suggest that working capital management is a significant predictor of financial performance. Contrary to previous thinking internal control systems do not significantly predict financial performance
7	Ahmed & Nganga, 2019	Using descriptive research design and multiple regressions	Positive and significant effect between risk assessment, monitoring, control environment, information and communication on financial performance.

Source: authors' collection

From table 1, internal control is considered the best way to achieve the performance of banks and each component of internal control also is an effective mechanism and tool in detecting, preventing, and monitoring errors and frauds occurring in banking activities. The previous research studies have used the Content analysis; Quantitative method by using a multiple linear regression; Theoretically reviewing, or Descriptive research design while in this study the authors will combine the qualitative method and quantitative method.

3. Methodology and Proposed Model

3.1. Methodology

As mentioned above, both the qualitative method and quantitative method will be carried out to achieve the objective of the study. Regarding qualitative research methods, the authors will discuss and interview the experts in State-owned commercial banks (4 banks are included in Appendix 1). The total number of experts included in the study was 400 staff members (for 100 members/bank), including customer service managers, senior branch controller, and controller/ supervisors/ header of departments. This study aims to explore the factors, at the same time supplement and adjust the observed variables used to measure concepts in the model. From there, building a scale will serve as a basis for reference and qualitative research to survey questionnaires corresponding to observed variables, used to measure research concepts in the model.

In this study, the research is applied a five-point Likert response scale, specified as following: 1= Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5= Strongly Agree, scale to describe the effect of internal control variables into the banks' performance for both dependent and independent variables.

On the collected and synthesized survey database, the authors coded the scales and used SPSS20 software to evaluate the reliability of the scales, exploratory factor analysis (EFA), and using multiple linear regression model.

3.2. Proposed Model

Based on the previous research studies and literature review, the proposed model is built as followed:

Table 2. Factors in model 1

No.	Factors	Explain	Hypothesis	Source
1	Performance	Banks' performance that is measured by non-financial indicators		Umar & Dikko, 2018; Negash, 2018
2	Internal control	Internal control includes 5 components		Hayali et al., 2012; Muthusi, 2017; Umar & Dikko, 2018; Negash, 2018; Mahadeen, 2016
	CE	c o n t r o l environment	H1: Factor control environment has positive effect on banks' performance	
	RA	risk assessment	H2: Factor risk assessment has positive effect on banks' performance	
	CA	control activity	H3: Factor control activity has positive effect on banks' performance	
	IC	information & communication	H4: Factor information & communication has positive effect on banks' performance	
	MO	monitoring	H5: Factor monitoring has positive effect on banks' performance	
3	β_0 : constant β_1 : coefficient μ : residual			

Source: authors' collection

3.2. Research Results

Cronbach's alpha is a measure of internal consistency, that is, how closely related a set of items are as a group. Also, it is used to measure of scale reliability. In the research, all of the scales are reliable because they are satisfied with the principles: Cronbach's Alpha is higher than 0.6; Cronbach's Alpha if Item Deleted is smaller than Cronbach's Alpha and also Corrected item-total Correlation is higher than 0.3.

KMO and Bartlett's Test for dependent and independent factors are both higher than 0.5 and the significance of the Bartlett test has Sig. is 0.000 less than 0.05. This means the data is suitable for EFA that is one method of checking dimensionality.

Performing the tests on the defects of the model, the authors found that the model does not exist multi-collinearity phenomenon; the autocorrelation phenomenon and the residuals of the regression are followed a normal distribution. Therefore, the regression model result is shown in the below table:

Table 3: Research results

Hypothesis	Factor	Standardized Coefficients Beta	Sig.	Evaluate
H1	CE	0.887	0.036	Accept
H2	RA	0.965	0.005	Accept
H3	CA	1.255	0.018	Accept
H4	IC	0.521	0.589	Reject
H5	MO	0.793	0.000	Accept

Source: Results from SPSS20

From table 3, the model is presented as:

Hypothesis H1 to H3 and H5 have sig. less than 5% so all the hypotheses are accepted, so all 4 factors of internal control such as control activities, risk assessment, control activities and monitoring have a positive effect on the banks performance significantly. While the component “information and communication” is not statistically significant factor because its sig. is higher than 5%.

4. Discussion and Conclusion

The results of the study show control activities, risk assessment, control activities, and monitoring have a positive relationship to banks' performance while information and communication have no impact on banks' performance. With a 95% confidence interval, all components of internal control, except information and communication, are statistically significant because of their Sig. (p-value) are less than 5%.

Depending on the characteristics and size of each bank, each factor of internal control may be more focused than other factors and has a different extent to which financial performance is affected. This research paper has outlined the importance of the implementation of internal control and how internal control components enforced in the banks. Because of internal control efficiently established, the board of directors, head of departments, and management of banks can formulate policies and make appropriate economic decisions correctly. Moreover, from a managers' perspective, this study provides a different approach to developing and approaching the influence of internal control components on banks' performance.

Besides, for internal control working effectively, all members in banks at state-owned commercial banks in Vietnam must focus the control activities component because to large extent, this component has a positive effect on banks' performance. Control Activities is also considered as control procedures. That means when the banks have strict control procedures, they can minimize their loss of revenue, waste of resources, and unforeseen losses of performance. Control activities will reduce the information asymmetry, promote the transparency of information to protect stakeholders against the power of managers. It is obvious that control procedures require compliance with specific and strict regulations issued by the banks and the Vietnam State Bank. In conclusion, that internal control helps banks to ensure that individuals and departments involved in banks should follow the control procedures, regulations to drive accountability for performance.

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APPENDICES

APPENDIX 1: LIST OF STATE-OWNED COMMERCIAL BANKS

No.	Short name	Name of bank
1	Agribank	Vietnam Bank for Agriculture and Rural Development
2	GP Bank	Global Petro Sole Member Limited Commercial Bank
3	Ocean Bank	Ocean Commercial One Member Limited Liability Bank
4	CB	Construction Commercial One Member Limited Liability Bank

APPENDIX 2: KMO AND BARTLETT'S TEST FOR INDEPENDENT FACTOR

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.711
Bartlett's Test of Sphericity	Approx. Chi-Square	2492.415
	df	453
	Sig.	0.000

APPENDIX 3: KMO AND BARTLETT'S TEST FOR DEPENDENT FACTOR

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		0.688
Bartlett's Test of Sphericity	Approx. Chi-Square	288.341
	df	4
	Sig.	0.000

MODEL OF JOB TRESS ON TURNOVER INTENTION, A CRITICAL STUDY AT LOGISTICS INDUSTRY, EVIDENCE FROM VIETNAM

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Abstract: *This paper's purposes are to recognize relations of job stress, dissatisfaction together intention to quit job of employees at Logistics enterprises in Vietnam (VLE). The job stress's determinants have been tested by this research including roles of leadership, work relationship, work pressure and time pressure. To conduct this study, the author has used qualitative and quantitative research methods in order to adjustment and inspecting the scales, models of theory showing its relations and impacting factors. This study is examined on a valid sample of 331 among 378 employees currently working in VLE. Using Confirm Factor Analysis, Model of Structural Equation with AMOS to affirmative the relationships of variables. Research findings disclosure a closely connections between constructs of the model. The findings strongly confirm three scales of the variables: "job stress", "job dissatisfaction" and "turnover intention" remain validity and reliability. And there has significant relationship between them. From the research results, managers in VLEs have to aware of realize factors affecting stress of employees, from that prevent them from quitting the job. If there is a timely and appropriate solution, it would support in decreasing job dissatisfaction and improving their commitment.*

Key words: *Job stress, turnover intention, Logistics industry, Vietnam*

1. INTRODUCTION

Estimated over 300,000 logistics' enterprises in which 54% are in HCMC with great demand for their workforce. With over 2 millions employees in this sector will be required by 2030 while the supply. In recent years, thanks to development of logistics service, VLEs have made dramatic progress and show remarkable potential for growth (VLA, 2019). In 2016, being ranked 39 among 160 investigated countries, Vietnam has moved up by 25 rankings by 2019. Thanks to effective policies and strategies of Government as well as the persistent efforts of VLEs, Logistics industry has such achievement. To enhance workforce and continue to face huge challenges, it has to evaluate the quality and quantity of this workforce, improve strategies in order to develop sustainably. However, the problem of employees intending to quit their job due to working pressure currently increasing (VLA, 2019). In 2019, according to the latest survey of Mercer-Talentnet on the quit rate in Vietnam, the 3 industries with the highest proportion of employees are retail sector (32.2%), real estate sector (18.8%), consumer goods sector (17.3%). Although not belong to high rate on quit the job, logistics sector has faced many challenges such as information technology (IT) and computer skills are also vital given that new IT is increasingly being applied. Therefore, the significant number of employees leaving a job has increased rapidly. In fact, the most matter

causing is work tress which has increased popularly nowadays (Bashir & Ramay, 2010) and last decades. To logistics sector, work conditions have changed remarkably. Most of them are concerning technology and methodology changes. In fact, these changes made employees tressfull. Previous researchers supposed amost stress of job caused by the shortage of managerial supports and suffered from the stuffy working atmosphere, consequences of such conditions may have harmful effects on employee's behaviour and organizational performance (Arshadi & Damiri, 2013). Staffs who endure such pressure will not feel happy, motivated, productive and safe at work. The most important impact is it has direct effect to employees's dissatisfaction. Similar to other industries, the aim of VLEs is to focus on increasing productivities, loyalty and improving their human resources by providing good working environment by innovated leaders. To accomplish this important activities, VLEs are facing challenges, most of them are job leaving and workforce's skill improving whether they mach requirements of competitive business sector. Due to increasingly fierce competition environment, VLEs have much requirements for their staff. In fact,. The industry's soft skills span over a wide list, including negotiation for logistics contract finalization, drafting of documents, working in groups, problem-solving. This challenge leads to pressure for employees, and accumulates into job stresses. Thus, if there is no suitable method, it will negatively affect the operation of the business and more than anyone else, managers at VLEs must identify these challenges, from that, having suitable solutions.

2. OVERVIEW OF THEORIES

Job stress

Stress is assumed to be an individual's psychological status which employees have feelings of the work environment and the emotional experience of it (Yang & Carayon, 2007). In other words, a status of extreme difficulty, pressure, or offense it is called as greatest stress and danger, or stress is a feeling experienced, when a person thinks that "the demands exceed the personal and social resources, the individual is able to mobilize". Stress as a process of response of behavioral, emotional, mental, and physical caused by prolonged, increasing, or new pressures that are significantly greater than the availability of coping strategies (Robbins & Stephen, 2004). Stress is also the result of an employee who faces requirements, pressures and negative reactions that cannot match their level of knowledge, raising challenges and threats to the viability of employees at this workplace. Bashir & Ramay (2010), stress is thought to be a psychological form of individuals when faced with chaos, conflicts between personal needs, responsibilities, opportunities and demands. Concerning to this research, it will be focused on stress of working, especially employees' stress while working for their organization.

At work, many people blame high anxiety levels because of bosses, jobs, deadlines, or other tasks that also want to take up their time. However, there are colleagues who themselves face the same challenges without any stress. In my opion, pressure is not stress, however, pressure can become stressful if there are additional factors including reflection which is a tendency to think back and forth over past or future events, while attaching negative emotions to those thoughts. In other words, one problem can be stressful for one person but not a big deal for others. This view leads to prevention strategies aimed at workers and how to support them to cope with working conditions.

By some estimates, “work-related stress” costs the national economy a staggering amount in sick pay, lost productivity, health care, and litigation costs (Palmer et al., 2004). Job stress is concluded of anxiety or nervousness relating to the work which had impacts on employees emotional and working behavior (Lu & Kuo, 2016). This conclude implies that employees react in different ways whenever subjected to certain stressors. The employee must perceive the stressor to be excessive for stress whether it is psychosocial or physical. components belong to job stress including Work pressure, Time pressure, Relationships pressure, Relationships pressure

Work pressure

Considered one of the top stress factors, it occurs when the workload is too much, the targets are assigned at a high level, jobs with high risk of responsibility are likely to be paying money or going to prison makes the staff always stressed. Work pressure concerns to aspects of demands in terms of the pace and amount of work (Pisanti et al., 2015; van Woerkom et al., 2016). Work pressure is certain positively associated with physical and psychological (Pisanti et al., 2015), and absenteeism (Trybou et al., 2014; van Woerkom et al., 2016). Moreover, it is usually launch to modern technology has changed the method of working. It requires employees to constantly adjust in order to match new working conditions. Most employees supposed they are suffering pressure from those changes. Like overworked work, employees have so many tasks to fullfil on time, usually this is a real stress factor because they are expected to do their jobs for a set amount of time but failed to achieve (Bashir and Ramay, 2010).

Time pressure

Arnold, Robertson & Cooper (1992), working shifts and jobs that require them to work long hours, affecting physical. Houtman & Jettinghoff (2007), cited factors such as working time, inflexible work time, too overload and unpredictable working hours. Perlow (1999) revealed an evidence of time shortage which remains a feeling of not enough times so that they could complete their working requirements for creativity. While some employees hold that it spurs them on to their best work, others say that it is almost impossible with such high performance. Therefore, this study examines the relations of time pressure and job dissatisfaction. The author suggests that time pressure, may contain precisely the type of needed to do creatively, however, it is created by satisfaction.

Relationships pressure

Working relationship means there has multi-relations in the environment that contains lots of interaction within the work group. People desperately need relationships, to understand each other and be able to work best with each other in groups. To my view, if the working environment is “hard”, “cold” and lacks the support or assistance of colleagues and supervisors, employees will feel stifled and stressed. In fact, employees who suffer poor working relationships from his supervisor, coworker and subordinate, they will be increased their stress level. In relation with bosses, colleagues, and subordinates can significantly impact on the way employees feel. The superiors always pressurize to complete the work, the targets, or do not support employees when having difficulties, or unfairly evaluate employees. Randall, Cox & Griffiths (2007), showed that the poor management, working environment without the support of colleagues also contributes to

stress. On the other hand, the fact that VLEs currently has fierce competition, so the superiors always put pressure on employees to meet the set targets. Interpersonal relationships are inadequate, unreliable or unsupported by management, poor relationships with coworkers, working alone or isolated established, failed to agree on a method for resolving a problem or complaint. It is this that increases the stress for employees.

Job dissatisfaction

Many previous scholars have revealed that job dissatisfaction is strongly related to negative emotion of employees. Manifestations of dissatisfaction include depression, anxiety and avoidance, withdraw, bladder and indifferent feeling (Faragher et al., 2005). Dissatisfaction is a negative attitude of persons who are working for any organization. To my opion, job dissatisfaction is measured by basic indicators cover working condition, compensation and benefit, training and development opportunities. There are poor working conditions, overload of work, low pay, no oppotunity of promotion or career development and lack of recognition (based on Tett and Meyer, 1993). It is certainly approved that dissatisfaction is negative attitude in accordance with turnover intention. To employees, when they are dissatisfied, they may quit the organization, or keep stay at the organization but passively respond or have no contributions and ideas in order to develop their organizations. Therefore, employees are usually neglect instead of passive attitude while working.

Intention to leave or turnover intention

Chen, Lin & Lien (2010) supposed that a critical and challenging matter for personnel management is turnover intention. It is considered as conscious wilfulness to seek for other alternatives in other organizations (Applebaum, Fowler, Fiedler, Osinubi, & Robson, 2010). Turnover intention is concerned with dissatisfaction, in fact, once employees have bad feeling, they have no commiment and loyalty (Chen & Lin, 2011). In my opion, some behaviors are considered to be quite obvious such as stop paying attention to appearance, being aggressive with colleagues, being less willing to do special projects or often absent from staff meetings, working lately or try to avoid meetings, duties, often absent at working time. They even deciding to take a day off without any good reason. What should an personnel manager does when employees begin to exhibit these behaviors? Having to focus on investing in the maintenance of bright employees in the short term. Organizations often deal with large-scale personnel changes to improve departmental or enterprise commitment, job satisfaction and engagement. This strategy may work, but it takes time to design and implement. Keep thinking about employee instability and a specific employee allows to invest time and resources in those who create the most value and in fact are also at the most risk of leaving.

Relations of job stress, job dissatisfaction and intention to leave the job

There are many researchers who found that the greater the amount of stress, the higher the turnover intention of employees will be (Chen et al., 2010; Applebaum et al., 2010). Noor and Maad (2008), Arshadi & Damiri (2013) revealed in their study there is a positive relationship was also found between stress and turnover intentions. Dahmodharan & Arumugasamy (2011) confirmed job stress has effected positively and directly to job dissatisfaction, as consequence, it lead to reduce engagement to their organizations. It was remarkable that almost immediate determinants of turnover intentions came from lacking of both satisfaction and commitment (Yang

& Carayon, 2007). Joseph & Stacy (2004) confirmed there is a negative relations of dissatisfaction and intention to leave. In general, to verify relationship of three components in which the mediating role of dissatisfaction. In accordance with the concerning literature, the author has expected to find out effects for connections between job dissatisfaction and job stress as well as turnover intention. Therefore, the following hypotheses have been developed for the current research:

H1: Work stress has a positive impact on job dissatisfaction (H1+)

H2: Timely tress has a positive impact on job dissatisfaction (H2+)

H3: Relationship tress has a positive impact on job dissatisfaction (H3+)

H4: Job dissatisfaction has a positive impact on turnover intention (H4+)

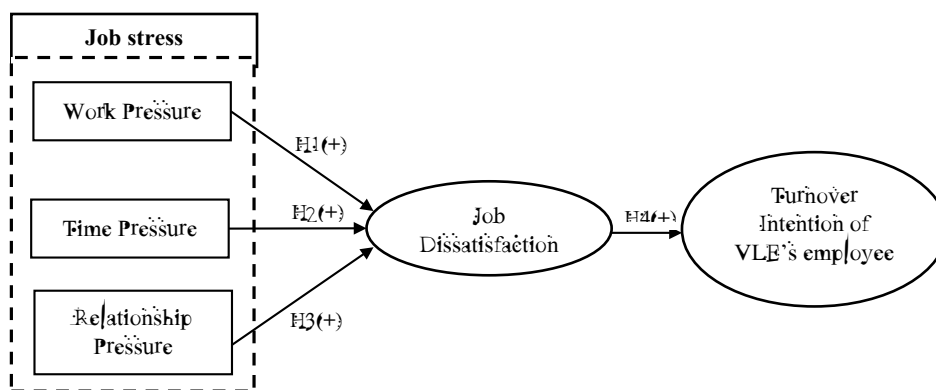


Figure 1. Initial model of the Effecting of job stress to intention leaving job of VLE's employees

Source: The results of qualitative research by Author (2020)

3. RESEARCH METHODOLOGY

3.1. Research data

This study conducted the survey on staffs who are currently working at VLEs with following description enterprises: 31.7% respondents surveyed of businesses with less than 50 employees; 19.5% of businesses from 50 to 100 employees and 17.1% of businesses from 101 to 200 employees, respectively rest of 9.8%, for businesses more than 1000 employees. Incordance with the real situation of this industry, this statistic sample reflected exactly. Among logistics enterprises participated in the survey contains logistics service providers including freight forwarding agents. To administer the stressor subscales of the Job Stress Index (JSI) (Sharma & Devi, 2011), the Intent to Quit scale (Mobley, Horner, & Hollingsworth, 1978 quoted by Tett & Meyer, 1993). Measuring scale of job stress by likert form 1 to 5 indicated level of disagree to agree on each statement. To enhance the reliability of responses, behaviour intention should be measured within a reasonable timeframe after accepting a position within a company.

3.2 Research methodology

This study uses qualitative and quantitative methods, these methods are used to test the veracity of a hypothesis that is carried out through data collection in the sector. To preliminary

research is designed both quality and quantity method. This research was conducted basing on two methods: (1) Qualitative research aims to realise, modify the components of scale; (2) Quantitative research aims to collect, analysis primary data, testing the components of scale, accrediting the initial model and the hypothesis. Preliminary research is built and calibrated by scale and added the observation variables through qualitative and quantitative methods. Preliminary qualitative research is done by expert with great consideration and group discussions with Logistics enterprises. The content of the discussion related to the factors that influence turnover intention of employees at VLEs; comment on; give out the research model for the discussion group to comment on the factors that affect the turnover intention and the draft scale built up by the author group and corrected by the discussion group. After exchanging of ideas, the discussion group agreed with the proposed model. The discussion group is also recommended to calibrate some of the names in the scale components, and proposed to amend the scale, modify some observed variables. From that, the research group has agreed about the initial model of this research. Official research is developed by following techniques “Cronbach’s Alpha” in order to test the reliability of scale, “Exploratory Factor Analysis” is used to reduce data to a smaller set of summary variables and to explore the underlying theoretical structure of the phenomena. “Confirmatory Factor Analysis” to test whether the data fit a hypothesized measurement model. “Structural Equation Modeling” is to define a theoretical causal model consisting of a set of predicted covariances between variables and then test whether it is plausible when compared to the observed data.

3.2. RESEARCH RESULTS

Vietnam has been reached 300,000 logistics enterprises locating on the areas which have convenience of traffic. According to VLA (2019) indicated 38.8% allocated at Red River Delta, 33.8% allocated at Southeast, 14.2% allocated at North Central and Central Coast, 5.6% allocated at Midlands and Northern, 5.2% allocated at Mekong River Delta and 2.4% allocated at Central Highlands. Most of the capital scale of businesses in this industry is low, not reaching 10 billion VND. Operational functions are mainly related to warehousing, freight forwarding, loading and unloading, sorting services and packaging. In recently, there is a significant increase in logistics services for e-commerce especially for bulk, value-added and food and beverage commerce. This poses a new challenge for logistics workforce. In this study, by convenient sample, the author served by google form to employees who are working at logistics enterprises. Data is collected through online survey forms in 8 weeks with 331 respondents are valid. Collected data is processed converted to descriptive statistics as below table.

Table 1. Descriptive statistics of Representative sample

Demographic feature		Frequency	Percent (%)
Gender	Female	146	44.1
	Male	165	49.9

Demographic feature		Frequency	Percent (%)
Age	From 18 to below 22 years old	15	4.5
	From 22 to below 30 years old	106	32
	From 30 to below 40 years old	152	45.9
	From 40 to below 50 years old	40	12.1
	Above 50 years old	18	5.4
Level of education	College	5	1.6
	University	154	46.5
	Postgraduate education	172	51.9
Salary	Below 7 million VND	3	0.9
	From 7 to below 10 million VND	196	59.2
	From 10 to 15 million VND	107	32.3
	Above 15 million VND	25	7.6
Seniority at enterprises	Below 2 years	32	9.7
	From 2 to 5 years	48	14.5
	From 5 to 10 years	107	32.3
	From 10 to 15 years	74	22.4
	Above 15 years	70	21.1

Source: Results of data analysis by Author (2020)

Research use the scales of Arnold, Robertson & Cooper (2009) and Bashir and Ramay, (2010). “Work pressure” includes 5 observed variables, encoded from WPR1 to WPR5; Scale “Timely pressure” of Robertson & Cooper (2009) includes 5 observed variable, encoded from TPR1 to TPR4);); Scale “Relationship pressure” of Randall, Cox & Griffiths (2007) includes 4 observed variable, encoded from RPS1 to RPS4. Scale of Joseph & Stacy (2004) is used for “Job dissatisfaction” (including 5 observed variables, encoded from JD1 to JD5) and scale of Gauci-Borda, & Norman (1997) is used to measure “turnover intention” (Includes 4 observed variables, encoded from TOI to TOI4). When pre-test the questionnaires, “Job stress” including “Work pressure”, “Timely pressure sc, Relationship pressure scale, job dissatisfaction scale and turnover intention scale all attain the reliability and are used for EFA analysis.

Table 2. Results of Cronbach’s alpha

Name of scale	No. of items		Cronbach’s alpha
	Before	After	
Work pressure (WPR)	5	5	0.913
Timely pressure (TPR)	5	5	0.906
Relationship pressure (RPR)	4	4	0.948
Job dissatisfaction (JD)	5	5	0.952
Turnover Intention (TOI)	4	4	0.896

Source: Results of data analysis by Author (2020)

The results of EFA analysis reveals that there has five extracted factors which explain 73.413% among research variances and eigenvalue value at 1.220. Thus, next step to conduct data is CFA

aiming to test the observed variables. In fact, CFA analysis results show that $TLI = 0.962 > 0.9$, $CFI = 0.968 > 0.9$ and $RMSEA = 0.059 < 0.08$ are all fixed and $Cmin/df = 2.163 < 5$ meet the requirement for compatibility. Besides, Chi-square is 419.554 with $df = 194$, $P = 0.000$ is permitted.

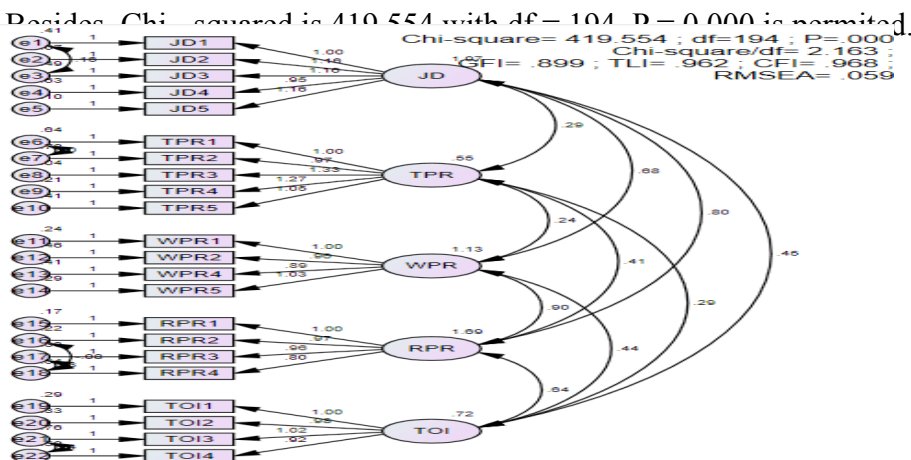


Figure 2. Results of research

Source: Results of data analysis by Author (2020)

Table 3. Summary of scales testing results

Scales	No. of Items	Reliability statistics		Variance Extracted	Validity
		Cronbach's Alpha	Total		
Work pressue (WPR)	5	0.913	0.75	0.92	Accepted
Timely pressure (TPR)	5	0.906	0.65	0.90	
Relationship pressure (RPR)	4	0.948	0.82	0.95	
Job dissatisfaction (JD)	5	0.952	0.79	0.95	
Turnover Intention (TOI)	4	0.896	0.61	0.86	

Source: Results of data analysis by Author (2020)

To exminate the suitable structure of this theoretical model, by using Structural Equation Modeling to test the impact of Job stress on turnover intention with the mediator of dissatisfaction factor, this study specifically investigated the effect of stress on intent to leave, with stress consistently being cited as a major predictor of anticipated turnover. In earlier studies, job stress had the strongest relation to turnover intention, and factors such as low autonomy, low recognition and poor communication with colleagues were described as the causes of this stress (Hinshaw et al., 1987; Blegen, 1993). With the changes affecting logisticians practice over recent time and the corresponding increase in demands on employees, it is unsurprising that stress is still an issue for today's profession. Additionally, specific stressors were not identified with any consensus in the papers studied although various stressors such as workload (Yin and Yang, 2001) and unstable work schedules (Shader et al., 2001) were identified as important for some samples.

Table 4. The results of testing the relationship among the concepts (Standardized)

Relationships			Estimation	SE	CR	P-value	Conclusion
JD	<---	WPR	0.392	0.059	6.422	0.000	H1 is accepted
JD	<---	TPR	0.132	0.067	2.755	0.000	H2 is accepted
JD	<---	RPR	0.293	0.049	4.711	0.000	H3 is accepted
TOI	<---	JD	0.545	0.044	8.699	0.000	H4 is accepted

Source: Results of data analysis by Author (2020)

Research results has strongly confirmed that there is a tight relation within 4 above mentioned factors. Similar to research of Joseph & Stacy (2004), employees in a variety of ways when confronted with dissatisfying working conditions. Planned exit and disengagement are the most common responses to job dissatisfaction which certain lead to leave job so far. Nevertheless, testing by SEM would show clear and consistence relationship among nominated factors.

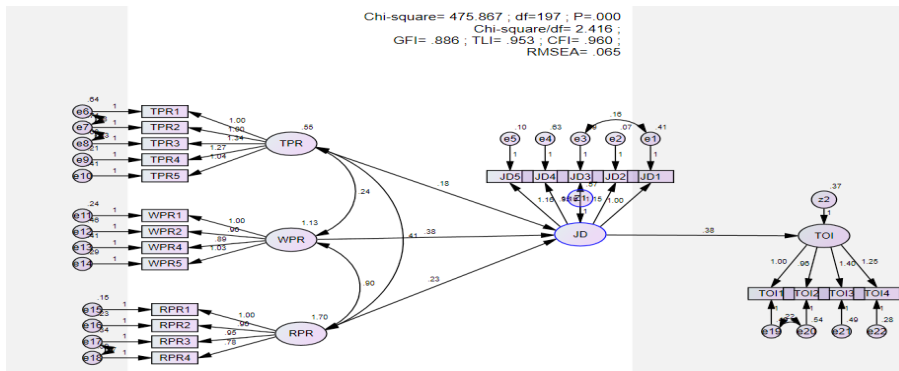


Figure 3. SEM results for the standardized model

Source: Results from the data process of Author (2020)

The model is well fitted to the data ($\chi^2= 2.416$, $df= 197$, $p=.000$, $RMSEA= .065$, $CFI= .960$, $GFI= .886$, $SRMR= .014$) and significantly explains how its components are related to each other. As can be seen, turnover intention is directly influenced by the job stress through the fulfilment of job dissatisfaction. The findings for internal consistency reliability (CR) values for all the constructs are as follows; TPR (.931), WPR (.951), RPR (.952), DS (.946) and TOI (.956). The values of the composite reliability (CR) for each of the constructs range from .931 to .956 and hence is considered acceptable. According to Gefen et al., (2000), value greater than .60 are acceptable in exploratory studies. In addition, values of composite reliability (CR) should be higher than .70 (Hair, Ringle and Sarstedt, 2011). The degree to which all items join to represent a construct as to measuring other construct is called as Convergent Validity (Urbach and Ahlemann, 2010). Hair et al., (2014) refer to this as average variance extracted (AVE) which means a grand mean value of the squared loadings of all items related to the construct. Hair et al., (2014) pointed out that in order to obtain acceptable convergent validity, each item must justify for at least 50 percent of the assigned indicators' variance ($AVE > .50$). In this study, all items are kept ($AVE > .50$). The average variance extracted (AVE) scores for TPR (.801), WPR (.843), RPR (.832), DS (.851) and TOI (.786).

Finally, using bootstrap is the sampling with replacement, and the original sampling is the crowd. The reasearch uses bootstrap with the sample $N = 1.000$. Deviation has no statistical significance (Table 5). Thus, we can conclude that the model attain reliability as above result.

Table 5. The estimation results with $N = 500$

Parameter			SE	SE-SE	Mean	Bias	SE-Bias
JD	<---	TPR	0.085	0.003	0.174	-0.010	0.004
JD	<---	WPR	0.072	0.002	0.382	0.000	0.003
JD	<---	RPR	0.056	0.002	0.235	0.003	0.002
TOI	<---	JD	0.045	0.001	0.381	0.001	0.002

Source: Results from the data process of Author (2020)

4. DISCUSSION

“Work pressure” (WPR) has a directly strongest impact on the “Job dissatisfaction” (DS) with $\beta = 0.38$, this proves that Work pressure is very appropriate in the business environment, and Work pressure is very effective in increasing dissatisfaction of employees at SMEs. The second strongest impact is “Relationship pressure” (RP) with $\beta = 0.23$. “Time pressuse” is also has impact on DS with $\beta = 0.18$. Regression coefficient of Job stress (JS) indirectly impact on turnover intention (TOI): Work pressure x job dissatisfaction = 0.144. This shows that when other factors do not change, the Work pressure and job dissatisfaction increase 1, turnover intention increase 0.144. Similarly, the Relationship pressure and job dissatisfaction increase 1, turnover intention increases 0.088; and Time pressure and job dissatisfaction increase 1, turnover intention increases 0.0684. SEM results show that: Job stress including Work pressure, Time pressure and Relationship pressure have a positive impact on job dissatisfaction. Therefore, the hypotheses H1, H2 and H3 are accepted. Job dissatisfaction have a positive impact on the turnover intention so hypothesis H4 is accepted. The study results are consistent with the results of previous researches in the impact of Job stress on turnover intention such as: Alexandros et al. (2003), Joseph & Stacy (2004).

Given VLEs' contributions, understanding management-related practices including human resource management (HRM) actions of VLEs, therefore, provides more efficient based on evidence policies for the pro-growth and the pro-poor strategies in Vietnam. Research on the effect of employees behaviour on specific enterprise for VLEs is important for several reasons. First, evidence on the HRM role in VLEs is a literature gap from the developing countries because most existing studies focus on the large-sized organizations in developed countries (Marrazot & Rebound, 2017). Second, VLEs account for a large share of total business and become main drivers for economic growth especially in developing nations. In addition, VLEs account for the remarkable population of companies and become the significant force for economic growth in the developing countries. Furthermore, various employees feeling likely produce various impacts their behavior, so this research also finds that the contributions for a certain percent spending on Organizational behavior practices creates about a part percent higher output value per employee and value added per employee, respectively. I cannot find statistically significant evidence on the impacts of work stress spending on the gross profit per wmployee. In fact, the significance between Work Stress to Job disstisfaction and Intention to leave is due to other factors that may cause changes in the

measured variables, both demographically (characteristics of the research object), other variables that are likely to be related or by looking at the phenomenon that actually occurs in the field. From the result of this research I can conclude that the stress faced by the employees at SMEs in Vietnam is not because of their works but it could be caused by other factors such as educational, cultural, family, religion and other factors which require further research. Although job dissatisfaction has been of central importance to considered for many years, there exists no general theory of the behavioral and psychological consequences of job dissatisfaction. This study reviews the concept of job dissatisfaction, and argues that exits particular consequence of job dissatisfaction is evitable or necessary. The various psychological and behavioral consequences of job dissatisfaction are considered, and a heuristic guide for further research is suggested. One of the competitive advantages among VLEs today is their creative, critical and enterprising human resources. However, because they are excellent employees, it is difficult to get talent, how to retain talents is a more difficult problem. If the key factors for getting talented people are the salary regime, the type of job, the relationship between the employee and the boss and colleagues. Then the key points to retain talent are at the right level of staff with the job, the ideal working environment and the opportunity for them to unleash their passion for creativity.

5. CONCLUSION

The aim of the present study was to evaluate a modified JS-JD-TI model in which a focused measure of job stress (comprises work pressure, timely pressure, relationship pressure) and job dissatisfaction, turnover intention were included. The study of individual differences in relation to responses to workplace dissatisfaction is an important step towards understanding individuals' behavior when confronted with a dissatisfying situation at work. The purpose of this first study was to reveal which personological characteristics, if any, affect reactions to workplace dissatisfaction. Now that we have a clearer understanding of the individual differences that do (or do not) affect responses to dissatisfaction, we are able to move forward and examine the situational factors as well as the interaction between individual and situational factors that cause various reactions to dissatisfaction. The results of this stream of research will undoubtedly prove instrumental in understanding the association between job satisfaction and various behavioral outcomes. In fact, both employer and employees are responsible when it comes to the issue of handling stress. Because it is within the enterprise, internal and external environment that cause the stress, the employees face the stress, and the employers will experience the effect of the stresses experience by the staffs. The relationship between job dissatisfaction and the decision to leave paid employment in favour of business ownership is explored. It is concluded that dissatisfaction with job stress concluding of issues associated with nature of job, time pressure and superior-subordinate relations appear to be related to the move. Significantly, VLEs managers may be people with entrepreneurial talent who, if they could be retained in an employee role, might make a valuable contribution to the success of their employing organisation. The human resource manager must identify such people and redefine their role in such a way that they will be more satisfied with the status of employee and make an effective contribution to organisational performance and increase commitment with organization. The significance between Work stress to Job dissatisfaction and Intention to leave is thanks to those factors that may results of the measured variables, both demographically, other

variables that are likely to be related or by looking at the phenomenon that actually occurs in the field. From the result of this research, it can be concluded that the stress faced by the employees at VLEs is mainly because of their works but it also could be caused by other factors such as sex, income, education and other factors which require further research.

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FINTECH CROWD FUNDING DEVELOPMENT IN VIETNAM

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Abstract: *Fintech Crowd Funding mechanism has become popular in developed countries, becoming one of the alternative fundraising solutions for traditional forms. The research paper will explore Fintech crowd funding in some major countries and continents, thereby pointing out the general difficulties that Fintech Crowd Funding in the world is facing with the development motivation of fundraising. For Vietnam - a country with a large proportion of small and medium enterprises - these are factors that play a pivotal role in the national economic development but face difficulties in the process of sourcing business finance. Thus Fintech Crowd Funding is significance. The research paper will evaluate the current situation of Fintech crowd funding under the perspective of considering this platform as part of the financial innovation system, thereby giving some suggestions for developing this form of fundraising.*

Keywords: *Fintech; Crowd funding; Development.*

JEL Classifications: G00, G30

1. Introduction

The birth of Fintech is considered as one of the most innovative inventions in the financial industry. With the background of sharing economy and information technology, Fintech is expected to promote the development of the financial sector through cost reduction, high quality and diversification of financial services. With the above advantages, the Fintech startups are becoming competitors of traditional financial institutions. This forces traditional financial institutions to expand investment in technology to maintain market share.

Fintech's business models focus on six areas including: payments, wealthy management, crowdfunding, marketplace lending, and capital markets and insurance services (Lee and Shin - 2018). In particular, crowding capital is one of the Fintech business models that contributes to creating a new capital for businesses, especially small and medium enterprises.

The goal of the paper is to explore Fintech crowd funding in major countries and continents such as the USA, Europe and Asia, thereby pointing out the general difficulties that Fintech Crowd Funding on. The world is facing, but also the driving force to develop this form of fundraising has drawn lessons for Vietnam. The structure of the research paper is designed as follows: in addition to the introduction in part 1, the research paper is structured with four additional parts. Part 2 will review the theories of the National Innovation System (NIS) and the financial policies

supporting innovation development; Fintech crowd funding platform. Part 3 refers to the research method, part 4 addresses the current situation of crowdfunding activities in the USA, Europe, Asia in general and Vietnam in particular. Thereby, the conclusions and policy implications will be drawn in part 5.

2. Theoretical framework

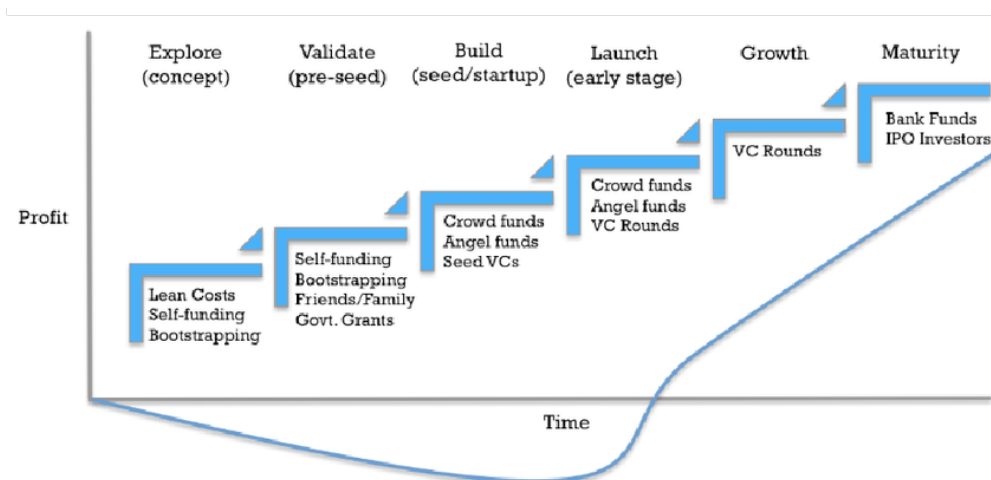
2.1 National Innovation System (NIS)

The National Innovation System (NIS) is a link system between the knowledge producer sector - represented by universities, research institutes and the industry (industry - Manufacturing industries - Production activities). In particular, the Government plays the role of creating, connecting, policy making environment, institutions to promote the interaction between the academic and industry sectors to apply and transform knowledge to serve people and society. NIS helps to promote economic growth, development and social progress. It changes the way of thinking, acts and stimulates the creative enthusiasm of people. This activity is a direct factor to promote social development, improve high quality human resources, and increase a country's competitiveness by the combination of technology and innovation.

For NIS to function well, it is necessary to have the support from the Government's financial policy. As a guide for the development of the innovation system, the financial policy is particularly focused by developing countries to effectively support local businesses, small and medium enterprises (SMEs) and multinational corporations invest in these countries (David, Hall, & Toole, 2000; Hall & van Reenen, 2000; Hyytinen & Toivanen, 2005). SMEs are considered to be one of the important factors contributing to economic growth and development in both developed and developing countries. It is the dynamism, open-minded and inquisitive that helps these SMEs easily approach the advancement of science and technology, thereby contributing to improving the competitiveness of the entire business sector and promoting pushing the dynamism and creativity of the whole economy. The importance of the SME sector is demonstrated by its contributions to job growth, output, export turnover and the promotion of entrepreneurship. According to Keskin et al. (2010), the SME sector contributes more than 55% of GDP and more than 65% of total employment in high-income economies. In low-income countries, SMEs contribute 60% of GDP and 70% of total employment. This figure in middle-income countries is 70% and 95%, respectively. Despite such an important role in the economy, SMEs have difficulty in accessing capital compared to large firms due to their small size, low degree of diversification and failure to meet asset requirements. guaranteed.

Likewise, in the early stages of start-ups, after having used up their founders' meager capital, these businesses face the huge challenge of raising funds. (Gompers & Lerner, 2001, 2004). On the other hand, this is considered as an important decisive success and failure period of a startup, besides the human factor, which plays an important role to bring ideas into real products. However, the opportunity to make a profit from investments in startups is risky because not all start-ups are successful. Therefore, traditional funding sources from commercial banks or finance companies often do not prioritize this area. The challenge poses requires start-ups to find other sources of funding such as: seed funds, business angels, venture capital and crowd funding.

Fig1. Funding requirement along the life cycle of the start – up



Source: <https://www.researchgate.net/>

2.2. Fintech crowd funding

According to the European Commission (2016), Crowdfunding is a form of increasing funds for a specific project. Crowdfunding’s platform are websites that allow a direct connection between callers and donors. According to World Bank (2013), Crowdfunding is a way to increase capital for businesses and organizations through the Internet in the form of fundraising or investing from many individuals in the economy. According to GPF (2016), Crowdfunding is used to refer to market-based financing technique - where small capital flows come from a large number of individuals in the economy. Crowdfunding relies on online web platforms and smartphones to connect lenders to finance a business, a project or other capital needs. In short, there are three important factors that make up Crowdfunding: (1) a small amount of capital; (2) come from many individuals or organizations; (3) based on digital technology.

Crowd funding can be divided into four main groups as follows: (Mollick, 2014; Schwiembacher & Larralde, 2012).

- Donation crowd funding: this is a form where social organizations and non-governmental organizations mobilize donations to help disaster areas and people in special circumstances. With this method, the sponsor does not require any income.

- Reward crowd funding: this is a form that small businesses, especially startups, call for capital support from individuals; in return individuals will receive a reward. These gifts can be in the form of material or services of the project being invested. This form of financing is not traditional debt but is used to increase the attractiveness of the project or penetrate the market.

- Equity crowd funding: This form is similar to buying shares of a potential new business. This form of crowdfunding is relatively small globally but has seen impressive growth in recent years. In the Americas, \$ 598.05 million of shares were sold through the Crowdfunding platform in 2015 (120% growth compared to 2014). In Europe, raising capital by selling shares reached 422 million EUR (467 million USD) in 2015.

- Peer to peer (business) lending: this is a form that allows lenders to connect directly with callers or invest in debt obligations through a technology platform. The lender is expected to receive the capital back and an interest return after a predetermined period.

Here are the reasons why SMEs and start-ups can more easily raise capital through the Crowdfunding platform than traditional methods like bank loans.

First, Crowdfunding attracts the participation of many capital investors. The reason is that Crowdfunding brings a higher return to the investor than savings. In addition, the division of mobilized capital into small packages with different amounts of money attracts investors with little capital.

Second, businesses can access capital at a lower cost than traditional loan products. The cost of operating an online transaction platform is lower than the operating cost of a commercial bank. Banks have to invest large costs in facilities, staff, branding ... Therefore, the cost of a bank loan will be higher than the Crowdfunding platform.

Third, funding based crowd funding platform does not require businesses to have collateral.

Fourth, Crowdfunding brings the convenience of sponsors and callers both in terms of time and paperwork. The online platform works 24/7, irrespective of geographical space and distance, requires less paperwork and allows for fast loan and repayment processes.

However, besides the benefits, sponsors through Crowdfunding platform also face many risks. In which the biggest risk is the risk of capital loss. Sponsors through the Crowdfunding platform do not hold any of the funder's assets, once the project fails, the sponsors will likely lose all of their capital (this will be extra subject to the contract signed between the project owner and the sponsor). In order to minimize the credit risk, it is most important that donors have enough information to learn about the caller and accurately assess the future growth of the business. However, information transparency is still one of the issues that have not been fully addressed in the Crowdfunding platform. Another possible risk is a technology glitch that causes the Crowdfunding platform to lose all loan data. Although the loan agreement between the donor and the firm calls for funds as proof of the loan, it also takes time to recover information regarding the disbursement, repayment amount and interest.

3. Research methodology

Financial policy plays an important role in the economic development of a country. In recent years, national innovation research has increased, but very few studies mention financial innovation system. And even less and more prospective Fintech crowd funding studies - a potential platform in the financial innovation system.

The objective of the paper is to find out the challenges and development dynamics of Fintech crowd funding - a part of Vietnam's financial innovation system. The paper will be based on the concept of the National Innovation System (NIS) as the analytical framework to undertake qualitative analyses. The research also aims to investigate main obstacle impending this platform. The use data from various reliable sources improves the robustness of results as the findings are strengthened through cross-validation of multiple data source.

Besides, the research surveys 100 people who are CEO of existing businesses, start – ups or investors. The results of surveys are basement for authors offering some meaningful police recommendations to suport the growth of crowd funding mechanisms.

4. The challenges and opportunities of Fintech crowd funding

4.1 An overview of Fintech crowd funding in the world

Crowd funding provides an online finance platform that provides capital funding for businesses that lack capital in the digital age. Before analyzing the current situation and the development of crowd funding in Vietnam, the paper will summarize some basic features of the development of this platform in the world.

In the US, funds raised from crowd funding have increased sharply from 2.7 billion USD in 2012 to 34.4 billion USD in 2015 and 95.9 billion USD in 2017¹. The US government through the Securities and Exchange Commission (SEC) enacted the Jumpstart Our Business Startups (JOBS) to support startups, whereby companies can increase capital to 1 million USD a year. An investor with an annual income of less than \$ 100,000 can invest \$ 2,000 or 5% of their income for a 12-month term. Investors earning more than \$ 100,000 a year can invest 10% of their income². Some large crowd funding platforms in the US can be named: Kickstarter, IndieGogo, FundRazr, GoGetFunding, Crowdfunder.

In Europe, crowd funding platforms mainly focus funding in three main areas: social causes, start-ups, and arts. The European Crowdfunding Network (ECN) is an organization created with the mission of promoting crowdfunding. In the member countries, there are also organizations that supervise crowd funding and protect investors' interests such as Britain's financial Conduct Authority (FCA), The German Crowd-Funding Network (Germany) or the Financement Participatif France (FPF) (France). Crowd funding is developing quite quickly in Europe with a 146% / year growth rate³. Some famous crowd funding platforms in Europe can be named: Crowdcube.com (UK), Seedrs.com (UK), Anaxago (France), EOS Venture (France), Bergfürst (Germany), EquityStartup (Italy), Invesdor (Finland), Mynbest (Spain), OpenCircle Project (Greece), FundedByMe (Sweden), MyMicroInvest (Belgium), Symbid (Netherlands), boomerang.dk (Denmark).

In Asia, CrowdFunding Asia is established to promote investment in crowd funding in member countries in the region. With the leading advantage in the number of Internet users (731 million people in 2016), China is the country with the highest amount of crowd funding in the region, up to 5505 million USD in 2017⁴. Funding through crowd funding in China is mainly concentrated in a number of areas such as technology, media, creative arts and telecommunications. In addition, many other Asian countries are also interested in this field, as evidenced by the Governments of Singapore, Taiwan, Japan, South Korea, Malaysia and Thailand have enacted laws to promote the industry. crowd funding, in addition, they also provide policy directions to support start - ups in socio-economic development plans.

1 Source: World Bank report.

2 Source: www.sec.gov.

3 Source: www.mondaq.com.

4 Source: China Internet Network Information Center.

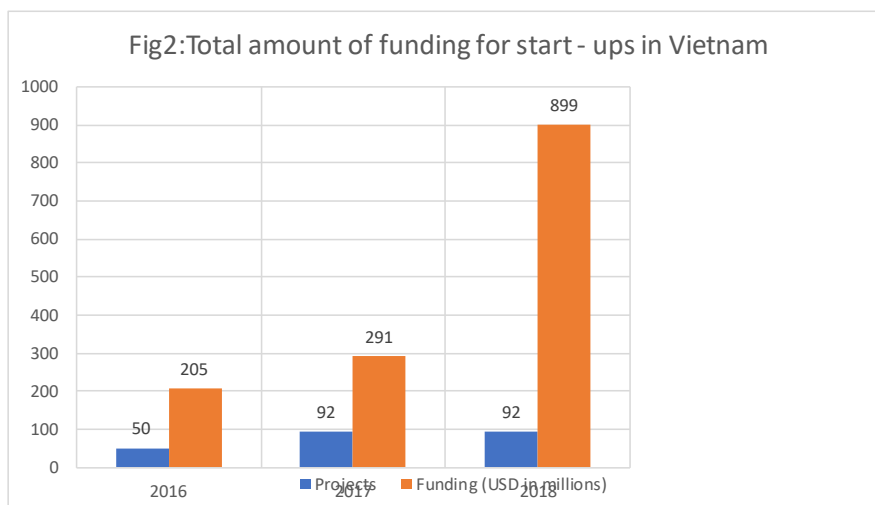
Table 2. Advantages and disadvantages of crowd funding in the world.

	USA	EU	Asia
Advantages	<ul style="list-style-type: none"> - There is a good environment to stimulate the development of crowd funding like Silicon Valley. - There is a strict legal system. The US has introduced a JOBS law soon to protect investors crowd funding. In addition, the country's intellectual property laws ensure that start-ups ideas are not stolen when they are posted on crowdfunding sites. 	<ul style="list-style-type: none"> - Many European countries have reduced taxes on both lenders and borrowers in the form of crowd-funding. - Many countries have implemented consistent policies to support start-ups and promote investors to finance capital. 	<ul style="list-style-type: none"> - Governments in many Asian countries attach great importance to supporting small and medium enterprises as well as start-ups (especially technology businesses), because this is a way for them to change their strengths from cost. cheap public goods to the knowledge economy. - Crowd funding in Asia is at an early stage of development, so there is still great potential for expansion.
Disadvantages	The United States has a good information technology platform and a well-developed financial market, so investors have more options for their capital, creating competition for crowd funding.	The inconsistency in investment laws of member countries is a barrier to the development of crowd funding in the long term.	Governments of some Asian countries do not have strong enough sanctions to protect intellectual property.

4.2 Fintech crowd funding in Vietnam

Vietnam is a developing country and increasingly asserted its position in Southeast Asia. Realizing that cheap labor cannot be considered as a competitive advantage in the ASEAN economic community (AEC market), Vietnam is gradually shifting its priority focus from cost advantages to knowledge economy. Accordingly, Vietnam is making efforts to demonstrate capabilities through fields that contain innovation such as science, technology and innovation (STI).


The decision to approve the 844 project "Supporting the national innovation start-up ecosystem to 2025" is a big step in the process of supporting and promoting the start-ups and small and medium enterprises. After three years of implementation (2016-2019), Vietnam has basically built up a foundational ecosystem with more than 70 work zones, more than 40 incubators, business promotion organizations and nearly 40 fund investments. As a result, the amount of investment capital for start-ups has continuously increased, especially in 2018; it has attracted 889 million USD, 3 times higher than in 2017. It can be said that the introduction of Project 844 creates an opportunity for Crowd Funding funds are developed.



Source: Topica Founder Institute

Also under Project 844, the Ministry of Finance and the Ministry of Science and Technology play a central role in implementing the start-up and innovation ecosystem. In addition to the maximum budget funding source of 1 billion VND (about 43 thousand USD) for a project, the project has attracted a large amount of capital mobilized from the private sector with diversified forms of capital call. It is a part of capital mobilization forms of start-ups and SMEs, but crowd funding has not yet fully developed its potential. Crowd funding platform in Vietnam has just been formed in recent years and the mobilized capital is still quite modest compared to other regional countries like Thailand or Indonesia. IG9 is the Crowdfunding platform that first appeared in Vietnam in April 2013. IG9 then successfully raised funds from the community to 40 projects with a size of 7-15 million VND for one project. However, after a period of operation, this website was silently closed in 2014. After IG9, a number of other Crowdfunding platforms have come into operation such as FirstStep, Comicola, Fundstart, Charity Map, Betado, Fundingvn. However, up to now, there are only three professional operating platforms: Comicola, Betado and Fundstart.

Table 2. Professional crowd funding in Vietnam (2019).

Crowd funding platform in the innovation system in Vietnam	Operational status
<p>Comicola</p> 	<p>Fundraising dedicated to comics. According to information on Comicola’s website, the platform has successfully raised 9 comic publishing projects with a total capital of up to 1,293,905,000 VND. In which, there are a number of successful capital raising projects exceeding the initial expected capital from 40% -60%. The form of Crowdfunding projects through Comicola is called crowdfunding based on gifts. The project is divided into small packages corresponding to the amount and gifts will be given to customers who contribute.</p>

<p>Betado</p> 	<p>It is a crowdfunding platform with the goal of creating opportunities to bring Vietnamese innovative products to market. Founded in 2015, formerly a crowdfunding project for comics, Betado has quickly grown and become the largest crowdfunding platform in Vietnam in terms of both the value of capital raised and the number of successful project. Up to now, Betado has successfully raised 13 projects with the total raised capital of 1,604,340,000 VND.</p>
<p>Fundstart</p> 	<p>Activities to support capital mobilization for creative projects in April 2016. The platform works on a gift-based crowdfunding model. The project owner shares his idea with Fundstart, the favorite community will donate money through the Crowdfunding platform's system within a certain period of time. If the fundraising campaign is successful, the project owner must ensure the interests of the fund backers and give them gifts as committed. If the campaign fails, the funds are returned to the backers. Up to now, Fundstart platform has successfully raised capital for 4 projects with the mobilized amount reaching 287,239,000 VND.</p>
<p>Fundingvn</p> 	<p>The main goal is to connect projects with the investor community on the basis of solving problems of capital and business development. Project owners can post projects on the website, these projects will be carefully reviewed and appraised by experts before coming to the community / investors to minimize the risks for community / investors. The total number of fundraising projects published on the website is 88 projects, however, in the current period, Fundingvn has not officially started raising real capital but focuses on cooperating with startup Wheel to help projects. have experience in the model, have a careful preparation of knowledge and how to conduct the campaign, as a premise for successful fundraising in the future.</p>

Source: author's summary.

Thus, it can be seen that although the Crowdfunding platform has developed in the world, while in Vietnam, it is still new with the main form of crowdfunding through gifts, and the total capital raised through the Professional fundraising platforms like Comicola, Betado or Fundstart are still very modest. The reason for crowdfunding through gifts is chosen mainly because the nature of this form is pre-sale (goods are sold before being produced) and donors feel more secure when their money. If you spend it, you will receive a gift. Other remaining forms of crowdfunding, especially through equity sales and lending, have not yet been implemented in Vietnam. This situation is stems from the following main reasons:

Firstly, the risk aversion of Vietnamese investors / donors in the context that the legal framework on this form of capital raising has not been issued to protect the interests of the participants;

Secondly, the callers' fear of transparency of project information in the context that the issue of technology copyright and ideas in Vietnam is still limited. The project is not clear and specific, it is difficult to raise capital, while the project is presented in too much detail, it may be copied.

Third, Vietnam has just issued Project 844 to help businesses innovate. Accordingly, these businesses will have access to capital from the State Budget and partly from private capital mobilization, non-State organizations, there is no legal document regulating the form of crowd funding.

Fourth, there is not a large organization to mobilize and promote crowd funding (Major organisations in the crowd funding industry). Such organizations are available in other countries in the region, for example the Japan Securities Dealer Association (JSDA) (Japan); The Financial Services Commission (FSC) (Korea); Monetary Authority of Singapore (Singapore); Securities and Exchange Commission (Thailand).

Fifth, the level of access to information technology of the majority of Vietnamese is relatively limited.

5. Policy recommendations and conclusions.

Although in the past few years, crowd funding has emerged as a lifesaver for many small and medium enterprises as well as start-ups, but this form of fundraising has not been really popular in Vietnam due to a number of difficulties. Barriers from investor sentiment, delay in financial policy. Through a number of comments about crowd funding in some countries / continents in the world, as well as from the actual operation of this form of capital mobilization in Vietnam, the authors give some suggestions to promote crowd funding platform in Vietnam should be pushed as follows:

- Vietnam is lacking a governing body to manage, promoting a development crowd funding platform.

- The Government needs to promulgate legal documents specifying the organization, obligations and powers of crowd funding platform parties. In Vietnam, the fact requires the State to pay attention to establishing a legal barrier to officially “recognize”, making this activity more popular, thereby creating peace of mind for both mobilizers. capital, capital support party and especially intermediaries providing community fundraising services.

- Need the intellectual property protection of the competent authority about the ideas of start - ups presented when calling for capital.

- Need independent agencies responsible for appraisal and assessment of the risk level of investment projects, in order to increase investor confidence.

After interviewing 100 people who are CEO of existing businesses, start – ups or investors, the authors summarize results as below:

- In – depth development.

The crowd funding industry needs qualified human resources to grow start – ups and SME into sustainable businesses. Therefore the Government should focus on developing quality rather than quantity of start – ups.

- Transparency in financial statement.

There is a fact that most of financial statements of SME or start – ups in Vietnam are not audited by independent auditing organizations. Thus the investors feel they cannot rely absolutely on such accounting figures for making investments. It is recommended that the Government should

pay attention to improve the quality of accounting figures presented in the financial statements or all of these statements should be audited before raising funding via crowd funding platform.

- Secondary market to trade crowd funding shares.

The secondary market support crowdfunding investors recover their capital before due date. Besides, they also take profit from this market. The appearance of secondary market absolutely attracts various investors joining crowdfunding platform.

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SOLUTIONS FOR IMPLEMENTING FINANCIAL AUTONOMY MECHANISM IN HO CHI MINH CITY, CULTURE AND SPORTS PUBLIC NON-BUSINESS UNITS IN HO CHI MINH CITY

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Abstract: *The research describes in the most general way the system of public non-business units in the field of culture and sports in Ho Chi Minh City; assess the achieved results, difficulties and problems facing units in the process of implementing financial institutions. Some difficulties and problems that the units are facing are: not being assigned full autonomy, only financial autonomy; degraded material foundations cannot afford to invest in new construction, renovation or repair by themselves; subject to fierce competition from private service providers; ... On that basis, the author proposed a feasible solution system to promote the implementation of financial autonomy in the units. a public career in the field of culture and sports in Ho Chi Minh City.*

Keywords: public service agencies, culture, sports, financial autonomy

1. Introduction

The financial autonomy mechanism (TCTC) for public non-business units (ĐVSNCL) has been promoted with the introduction of Decree 43/2006 / ND-CP dated 25/06/2006 of the Government. After nearly 10 years of implementation on the basis of evaluating the results achieved as well as the shortcomings, on February 14, 2015, the Government issued Decree 16/2015 / ND-CP to replace the Decree. 43 in the direction of regulating general issues, serving as a basis for relevant ministries and agencies to develop separate decrees for each specific field. Decree 16/2015 / ND-CP clearly demonstrates the goal of comprehensive renovation of the ĐVSNCL; step up the assignment of autonomy and self-responsibility to the units synchronously in both task performance, organizational apparatus, human resources and finance.

Ho Chi Minh City is one of the biggest centers of culture and sport (traditional culture) of the country and the southern region; Being a densely populated city with the highest per capita income in the country, its people have the need to enjoy high quality cultural, sports and tourist services. To meet this demand, over the past years, the city authorities have stepped up the implementation of the policy of socialization in the provision of cultural, sports and tourism services and promote the implementation of the financial institution. the traditional culture units in the field of traditional culture; towards the provision of traditional culture services with access to the market mechanism. After nearly 15 implementing the TCTC mechanism according to Decree 43/2006 / ND-CP and Decree 16/2015 / ND-CP, the system of traditional culture units of the city has changed significantly compared to before. . Many units have tried to escape the subsidy mechanism, live on their own with revenues from service provision and do not receive funding from the state budget. However, in addition, there are many other units that have had difficulty solving the problem of autonomy but have not yet succeeded. On the basis of the overall assessment of the current status of the

financial institution implementation in the traditional culture units in the field of traditional culture in Ho Chi Minh City, the authors hope that the proposed solutions contribute to the successful implementation of the MF mechanism in this unit.

2. Theoretical framework

The goal of implementing the financial institution mechanism at the traditional culture units in the traditional culture field is to give autonomy and self-responsibility to the units in mobilizing and using financial resources to complete the assigned tasks, promote all The unit's ability to provide high-quality education, training and vocational services to the society. The mechanism of the financial institutions of the local cultural units combined with the socialization policy in the provision of traditional culture services will mobilize the contributions of the social community to develop the traditional culture activities, gradually reducing the subsidy from the state budget.

The content of the TCTC mechanism in the traditional culture units in the field of traditional culture is currently regulated in Decree 43/2005 / ND-CP and Decree 16/2015 / ND-CP including: autonomous mechanism of revenue sources, collection rates; autonomy mechanism in the use of financial resources; autonomy in wages, wages and additional income; autonomous mechanism in using financial results for the year and funds. Currently, the traditional culture units in the field of traditional culture in Ho Chi Minh City are still implementing the MFI mechanism according to the provisions of Decree 43/2005 / ND-CP.

The forms of financial assistance under the provisions of Decree 43/2005 / ND-CP include: the unit self-guarantees the operation budget, the unit self-guarantees a part of the operating budget, the state budget unit ensures the entire operation. operating fees. Decisions to classify and delegate autonomy to units are made in a three-year period, ending a period of assessment to determine the type of autonomy in the next phase. The basis for the management agencies to classify the type of autonomy based on the formula for calculating the level of financial institutions and the operational situation, the financial revenue and expenditure situation of the unit. In which, the level of financial autonomy is calculated by the formula:

$$\text{Financial autonomy} = \frac{\text{Total non - business income}}{\text{Total recurrent expenditure}} \times 100\%$$

If the level of financial institution is greater than 100%, the unit will ensure operating budget; if the level of financial institution is in the range from 10% to 100%, the unit will partially cover the operating budget; if the level of financial institutions is less than 10%, the unit shall be covered by the state budget.

3. Reality of implementation of the financial autonomy mechanism in public non-business units in the field of culture, sports and tourism in Ho Chi Minh City

a) Actual autonomy in revenue sources and levels

As of 2018, Ho Chi Minh City had 38 cultural and cultural units at the city level; 14 of which are self-financed for regular operation, 24 units cover part of regular operation expenditures and 1 state budget unit covers all operating expenses.

* For cultural heritage units

As of December 31, 2018, there are 08 cultural heritage units belonging to the city block. In which, 01 unit ensures regular operation expenses (the War Remnants Museum), 06 units cover part of regular operation expenditure, 01 state budget unit covers the entire operation expenditure.

Table 1. The situation of income sources of cultural heritage units in Ho Chi Minh City*Unit: million VND*

Year	Total revenue	Where				
		Funding budget level	Collecting career fees			
			Total	Collecting fees and charges	Service collection	Other receipts
2012	47122	21714	25408	10049	13079	2280
2013	50059	21145	28914	11731	14366	2817
2014	48920	21005	27915	11071	15197	1647
2015	54979	20304	34675	15157	15263	4255
2016	56973	19722	37251	17359	15412	4480
2017	63175.5	20256	42919.5	20019	17244	5656.5
2018	103956	20205	83751	58065	23627	2059

Source: Synthesized from the Report on the situation and results of the implementation of the autonomy mechanism at the SFEV in Ho Chi Minh City over the years.

The total revenue of cultural heritage units increased continuously in the period 2012 - 2018; The total revenue in 2018 increased sharply over the previous years, increased 64.5% over 2017 and increased 121% compared to 2012, the average of the whole period increased by 16%. In which, state budget funding tends to decrease in both quantity and proportion. The state budget funding for units in 2018 decreased by 7% compared to 2012; The proportion of state budget funding in total revenue has decreased from 46% in 2012 to 19% in 2018. The reason for the sharp increase in total revenue of units in 2018 is due to the sharp increase in non-business revenues. Non-business revenue in 2018 increased 95% compared to 2017 and 230% compared to 2012; The proportion of non-business revenue in total revenue has increased from 54% in 2012 to 81% in 2018. Contributing to the sharp increase of corporate income in 2018 is the collection of fees and charges. Fees and charges in 2018 increased 2.9 times in 2017. The reason is that in 2018, museums in the City are allowed to increase entrance fees. In 2018, fees and charges accounted for the largest proportion in total non-business revenues (69%); Service revenue accounted for 28%, and other revenue accounted for 2%.

Among cultural heritage units, the War Remnants Museum is the only museum in the City that has exercised financial autonomy since 2014. When the MFI was first implemented, the total revenue of the War Remnants Museum significantly reduced when there is no more state budget funding. All activities of the unit are based on non-business revenue, in which fees and charges account for 83.4% of the total non-business revenue in 2014. In the collection of fees and charges, the revenue is from ticket sales to visitors. However, the museum is not allowed to decide the entrance ticket price (the ticket price is decided by the superior management agency). All these things have significantly affected the professional activities and life of the officers, employees and employees at the unit.

However, the unit's revenue situation has been improved in the following years when the Museum is dynamic, promoting all potentials to form many sources of revenue in practice to improve the financial situation. The museum has focused on renovating and exploiting the strength of on-site exhibition with attractive and topical topics to increase ticket sales. The museum also

combined with other forms such as exchanges, performances to attract other visitors; Besides, the museum also publishes publications, catalogs introducing the museum in 4 different languages. These activities have helped increase the collection of fees and charges of the Museum significantly from 2015 to 2018; Collecting fees and charges of the Museum in 2018 increased by 39,620 million VND, equivalent to 477% compared to 2014. Besides, the museum is also active in performing professional services such as: implementing exhibitions and exhibitions. traditional houses, publishing publications ... for universities in the city and many units in the provinces. These activities both help improve the operational capacity of staff, create relationships, enhance the museum's brand and provide no service revenue. Service revenue in 2018 increased by VND 4,630 million, equivalent to 536% compared to 2014.

When comparing the non-business revenues of other museums with the War Remnants museum before and after the TCTC finds that: the non-business revenues of other museums are lower than those of the War Remnants Museum; in non-business revenue, service revenue accounts for the largest proportion (War Remnants Museum, fee and fee revenue accounts for the largest proportion). This is explained by the following reasons: (i) some museums (Ton Duc Thang Museum, Men's Women Museum) do not collect entrance tickets; (ii) The War Remnants Museum attracts many visitors by organizing many attractive activities to collect fees and charges (in the context that the museums are not allowed to decide the entrance fee); (iii) due to the forced TCTC, the War Remnants Museum must have a change in the provision of museum services to survive and develop.

** Performing arts unit*

The performing arts performers play an important role in preserving and promoting the cultural and artistic values of the city in particular and of Vietnam in general, thereby contributing to the diversity of cultural and spiritual life. for City residents. The number of artistic career units operating towards financial autonomy is increasing. By the end of 2018, 7 out of 8 public art agencies have self-financed part of their regular operation expenditure (accounting for 87.5%); 1/8 units of the unit can guarantee their expenses for regular operation (accounting for 12.5%).

Table 2. The collection situation of the NTSNCL in the field of performing arts

Unit: million VND

Year	Total revenue	Where				
		Funding budget level	Collecting career fees			
			Total	Collecting fees and charges	Service collection	Other receipts
2012	68874	26256	42618	0	25596	17022
2013	77846	29599	48247	0	31463	16784
2014	74131	31572	42559	0	32433	10126
2015	69392	31511	37881	0	36076	1805
2016	72328	31189	41139	0	37729	3410
2017	76838	31936	44902	0	40173	4729
2018	81069	31251	49818	0	43087	6731

Source: Synthesized from the Report on the situation and results of the implementation of the autonomy mechanism at the SFEV in Ho Chi Minh City over the years.

The total revenue of performing arts units has fluctuated, increasing or decreasing over the years, the total revenue in 2018 increased by 18% compared to 2012. In which, the state budget allocated tended to increase in both quantity and billion. important. State budget funds allocated to units in 2018 increased by 19% compared to 2012; The proportion of state budget expenditure in total revenue increased from 38.1% in 2012 to 45.4% in 2015 and then decreased to 38.5% in 2018. Accordingly, the proportion of non-business revenue in total revenue decreased. from 61.9% in 2012 to 54.6% in 2015 and increased again to 61.5% in 2018. In terms of quantity, the total non-business revenues fluctuated up and down over the years, however, the whole non-business revenue in 2018 increased by 17% compared to 2012. Art performance units have no income from fees and charges. Accounted for the largest proportion of non-business revenues is service revenues.

The City Center for Performing and Cinema Organization has been the only TCTC performing art unit since 2012. Since the implementation of TCTC, the total non-business revenue of the City Center for Performing and Cinema Organization has increased. continuity. Total non-business revenue in 2018 increased by 1.24 times compared to 2012, of which service revenue was the main source of income for the unit. Besides the agility, dynamism, activeness and creativity of the Center to develop, it must be mentioned an advantage that this unit has compared to other performing arts units. is the unit that manages the City Theater property. Thanks to that, the unit has advantages in organizing activities and co-operating with art units to increase service revenue of the unit. With programs serving remote areas, or performing political units, no tickets are collected, so the source of fees and charges is not available.

Ho Chi Minh City Music and Music Center is one of the units that self-guarantees a part of the operating budget with a high level of finance. State budget funds allocated to units tend to decrease while non-business revenues increase. Like the City Center for the Performing and Cinema, service collection is the biggest revenue of the unit, without fees and charges, other revenues account for a small proportion. Service revenue of the unit is obtained mainly from the organization of art programs, programs that are constantly renewed. The Center also actively associates, co-organizes and provides a force of singers performing with units and partners in the city and many provinces and cities in events, programs and festivals to generate revenue. .

In addition to the two above units, the remaining 6 units of performing arts are having difficulties on the path of autonomy. Like the two units (Ho Chi Minh City Center for Light and Music and the Center for Ho Chi Minh City Cinema and Performance), Ho Chi Minh City Symphony - Music - Dance Theater held for many years. get a lot of performance ticketing performances. However, revenue from ticket sales is not enough to help this unit rise to TCTC; The unit still receives funding from the state budget, funding from the state budget accounts for nearly 50% of the unit's operating budget in 2018. The reason is that this unit does not have its own theater, the unit has to hire stage to practice, run and perform. This is also a common difficulty for the remaining performing arts units (Bong Sen National Music and Dance Theater, Boi Art Theater, Drama Theater, Southern Art Theater); Most of the units do not have a parking place for the audience, the stage is not modern, there are many professional design errors that do not meet the professional art performance organization. There are 6/8 units are old buildings, villas; 4/8 units do not have a suitable acting point. Therefore, the revenue from the exploitation of facilities, performing arts services is low, only contributes to

supplement operating costs, serving the maintenance and maintenance of facilities. Meanwhile, expenses for professional activities and operations performed according to assigned functions and tasks; facility maintenance costs are huge.

The DVSN performing arts have a low level of TCTC in addition to the difficulty of facilities, most of these units are traditional art units (Tran Huu Trang Cai Luong Theater, Boi Art Theater) - These are the types of arts that are very picky about the audience, and are the traditional arts that need to be preserved. These units mainly rely on state budget funding to perform political tasks, preserve traditional artistic values; State budget funding accounts for more than 80% of the total revenue of these units; the rest is service collection (Cai Luong Tran Huu Trang Theater) or other collection (Theater Art Boi Boi).

** Sport units*

With the field of sport, the number of self-financed units of the branch accounts for a relatively large proportion compared to the rest of the fields. Currently, there are 8 out of 11 units having financial institutions, with these units revenues from service activities and other revenues accounting for a large proportion of the total non-business revenue of the units. Sports and sports units have advantages in renting yards, yards, venues to organize sports activities, tournaments or organize sports classes for city residents.

Table 3. Revenue situation of sport physicians and sports

Unit: million VND

Year	Total revenue	Where				
		Funding budget level	Collecting career fees			
			Total	Collecting fees and charges	Service collection	Other receipts
2012	82757	6019	76738	385	67274	9079
2013	97106	19057	78049	500	65180	12369
2014	96277	18993	77284	1000	60719	15565
2015	90349	18751	71598	980	51175	19443
2016	100048	16248	83800	950	66395	16455
2017	93900	16561	77339	5662	59581	12096
2018	96869	11132	85737	0	67559	18178

Source: Synthesized from the Report on the situation and results of the implementation of the autonomy mechanism at the SFEV in Ho Chi Minh City over the years.

The total revenue of sport units tends to increase and decrease over the years, in 2018, the total revenue of the units increases by 17% compared to 2012. In which, the state budget allocated after a sharp increase from 2012 to 2013, Gradually decreasing, in 2018, the state budget allocated increased by 85% compared to 2012 but if compared with 2013, it decreased by 41.5%. For the whole period 2012 - 2018, state budget funding allocated to units increased by an average of 28.5%. Accordingly, the proportion of state budget expenditure in total revenue also fluctuated over the years, increasing from 7.3% in 2012 to 20.8% in 2015 and down to 11.5% in 2018. Non-business

revenue also There is an increase or decrease over the years, the non-business revenue in 2018 increased by 11.7% compared to 2012. The proportion of non-business revenue / total revenue fluctuated from 92.7% in 2012 to 79.2% per year. 2015 and increased again to 88.5% in 2018. In non-business revenue, service revenue accounted for the largest proportion, the proportion of service income / non-business revenue tended to decrease from 87.7% in 2012 to 71, 5% in 2015 then increased to 78.8% in 2018. Followed by other revenues, the proportion of other revenues / non-business revenues increased from 11.8% in 2012 to 27.2% in 2015 and decreased. to 21.2% in 2018. The proportion of non-business fees and charges is quite small, not significant.

c) The state of autonomy in expenditures and expenses

Basically, the traditional culture units in the field of traditional culture have autonomy in using assets at the unit, autonomously using the state budget and non-business revenues to perform their tasks. 100% of units have built internal spending regulations according to current regulations. The regulations have specified a number of contracting norms for expenses such as stationery contracts, telephone contracts, and business trips; has set spending norms such as reception, conference drinking water; regulations on the management and use of expenditure savings.

In using the assigned funds autonomously, the units ensure to comply with the internal spending regulations issued. In implementing the tasks, in addition to implementing the current spending norms according to the regulations, the units have integrated resources, renewed the way of implementation to save regular expenditures to facilitate welfare activities. development of non-business activities and additional income payments for officials and employees and workers.

d) Distribution of operating results

Table 4. Distribution structure of the recurrent revenue - expenditure difference of the traditional cultural units in the city block traditional culture

Unit:%

Year	Total difference between revenue and expenditure	Income increased	Non-fiction Fund	Bonus fund	Income stabilization fund
2018	100%	57.2%	22.8%	20%	0%
2017	100%	56.9%	22.3%	20.2%	0.6%
2016	100%	59.2%	22.5%	17.0%	1.4%
2015	100%	58.3%	22.5%	17.7%	1.4%
2014	100%	58.1%	21.1%	18.3%	2.5%
2013	100%	46.0%	34.4%	16.1%	3.6%
2012	100%	53.6%	27.7%	11.9%	6.7%

Source: Synthesized from the report on the situation and results of the implementation of financial autonomy and self-responsibility according to Decree 43/2006 / ND-CP of the years.

It can be seen that like the NTSNLs in other fields, most of the regular operating income-expenditure difference of the traditional culture units are used to pay additional income for the

employees. The additional income for the tutor accounts for more than 50% of the total income and expenditure difference in the period 2012 - 2017. The rest is used to set up funds in the unit.

Through the survey practice at the NTSNCL in the traditional culture field shows that the fully autonomous units are the units that do well to expand revenue sources and save expenses, so the amount of regular expenditure savings is always the highest among the units in the same field of activity (War Remnants Museum, City Center for Performing and Cinema). Since then, these units have conditions to increase income for employees and set up funds according to regulations.

Limitations and difficulties of Unit

Firstly, the difficulty in organizing the implementation.

New units that are only authorized to provide financial institutions have not been given full autonomy such as organizational structure, personnel, and investment. For example, the War Remnants Museum, although TCTC, has not been able to decide on the fee to visit the museum. The War Remnants Museum has been autonomous since 2014, but so far the museum has not been able to decide on its own how far to collect tickets. The fee for visiting museums is determined by the City Council. The ticket price to visit the museum in 2018 applies 40,000 VND / time / person at the War Remnants Museum. HCM City Museum, Fine Arts Museum, History Museum is 30,000 VND / time / person. This rate applies to adults, regardless of Vietnamese nationality or foreign nationality. Some museums do not charge entrance fees such as Ton Duc Thang Museum and Men's Women Museum.

Some performing arts units fall into a state of both redundancy and lack of staff. Due to the specific characteristics of the profession, many artists are out of age but are still on the payroll receiving salary from the budget. While the units lack young actors or personnel with expertise in the field of market development, services; The units have to sign many contracts to work outside the payroll. With the large number of personnel, the large source of spending on non-professional factors has put pressure on the distribution and balance of the expenditures of the units. This has a great influence on the construction of work plans towards the implementation of the financial institution mechanism.

- *Second*, facilities are difficult.

The facilities of many ĐVSNCL have deteriorated, there is no capital to invest in new construction, renovation, repair and upgrading. Therefore, revenue from the exploitation of facilities is low, only contributing to additional operating costs, serving the maintenance, repair and maintenance of facilities. For example, the Ho Chi Minh City Symphony - Music - Dance Theater does not have its own theater, the unit has to hire a stage to practice, run programs and perform; Bong Sen National Music and Dance Theater, Theater Boi Art Theater, Drama Theater, Phuong Nam Art Theater do not have a parking place for the audience, the stage is not modern, there are many design errors. does not meet professional art performance. The project to build Phan Dinh Phung Sports Center, Rach Chiec Sports Center has not been started construction.

Third, the difficulty due to the specific fields of operation of the units.

Due to the specific aspects of the field of activity for art performance athletes. There are currently 50% of the units in the traditional art form out of a total of 08 performing arts units, 50% of the units belong to the contemporary art form, so the performing and performing arts services of these units are subject to competition from other forms of contemporary entertainment. The general public - the market for the traditional art form is strongly declining. While most of the

performing arts programs of the units are only for the purpose of politics, society, low commercial value; This leads to the revenue from performing activities of many low-art artistic units.

4. A number of solutions to promote the implementation of the financial autonomy mechanism in public non-business units in the field of education, training and vocational training in Ho Chi Minh City

Firstly, rearranging, reorganizing and upgrading the TCVsNQV in the traditional culture field

*** For cultural heritage field units**

- War Remnants Museum - has full financial autonomy since 2014; maintain the current level of autonomy, orientations for self-control in recurrent and investment expenditures by 2030.

- Museum of Ho Chi Minh City and Museum of History of Ho Chi Minh City have relatively similar activities (display and introduce about Vietnamese history, history of Ho Chi Minh City; display , introduction of southern culture and Saigon), both units have average career income so they merged Ho Chi Minh City Museum, Ho Chi Minh City History Museum. After the merger, it is necessary to reorganize and reorganize the operation and staffing apparatus in a streamlined and efficient direction; gradually reduce the budget for budget allocation and proceed to the financial institution.

The Museum of Fine Arts of Ho Chi Minh City is ranked as a high financial institution, low-end budget recurrent budget, and average career revenue. Although it is a specialized museum, quite picky about the audience, but the museum has made many efforts and efforts to increase revenue. Should keep the operating model, improve revenues and upgrade financial institutions towards complete autonomy by 2025.

- Ho Chi Minh Museum - City branch. Ho Chi Minh City, Ton Duc Thang Museum: maintain and rearrange staffing, organize the apparatus in a streamlined and effective direction. These are two celebrity museums with important political significance in the political life of the city people, requiring investment from the State because they do not charge visitors and are in accordance with Decision 429 / QD- TTg - maintains the number of existing Ho Chi Minh museum branches. Maintain the type of unit to partially self-guarantee operating costs and gradually increase the level of financial institutions.

- Southern Women Museum, this is a specialized museum about women

Southern; State investment is required, due to no fee for visitors; maintain and rearrange payroll, streamline and efficient organization. Maintain the type of unit to partially self-guarantee operating costs and gradually increase the level of financial institutions.

- The Center for the preservation and promotion of historical and cultural relic values of the city shall comply with Decision No 429 / QD-TTg on the organization to maintain the same, gradually raise the financial institution level towards complete financial autonomy by 2025.

*** For the performing arts field units**

- Symphonic Theater - Music, Dance, rearrangement of staff and apparatus operating in a streamlined and efficient direction; Gradually raise the level of financial autonomy to 2025 with total financial autonomy. In line with the policy of the City People's Committee to build the National Symphony - Music and Dance Theater of the national and Southeast Asian region.

- The merger of the Bong Sen National Music and Dance Theater and the City Drama Theater; reorganize the apparatus and staff in a streamlined direction; gradually raising the level of financial institutions and towards financial autonomy by 2030. These are both units with long history of

operation in the City; are two units that perform well the political tasks, preserve and promote the traditional cultural values.

- Center for Organizing Performing and Cinema City is currently self-financed. Orientation to transform to operate as a joint stock company in 2025.

- The Light Music Center is moving towards TCTC, the TCTC of Light Music Center in 2018 reached 77.7%. Orientation to implement financial autonomy by 2020; proceeding to operate as a joint stock company by 2025.

- Phuong Nam Art Theater currently operates puppet and circus performing arts, is the only theater in the south performing this art form. Reorganize the apparatus and payrolls in a streamlined direction, gradually raising the financial institution level and towards total autonomy by 2030.

- Tran Huu Trang Cai Luong Theater, Boi Art Theater, this is a special type of traditional art performance that must be preserved and promoted, requires state investment in this field. The characteristics of this type cannot be merged into other units; on the other hand, according to Decision 1400 / QD-TTg to preserve the traditional arts of Cai Luong and Hat Boi; thus, maintaining and rearranging the payroll, organizing in a streamlined and efficient direction. Maintain a type of autonomy that partially ensures operating costs and gradually increases financial autonomy until 2030.

*** For the sports field**

- Merging and reorganizing 05 units: City Sports Training and Competition Center, Rach Chiec Sports Center, Phu Tho Sports Stadium, Phu Sports Gymnasium Tho, Phu Tho Swimming Club will reach financial autonomy by 2022. In accordance with the orientation of each province and centrally-run city, to maintain 01 provincial sports training and competition center.

- Thanh Da Sports Club and Yet Kieu Water Sports Center - These are 02 sports units that jointly train, train and provide water sports services. Both 02 are receiving low budget TX budget; while Thanh Da Sports Club has a low non-business income, the Yet Kieu Water Sports Center has an average non-business income. Therefore, should merge and reorganize the operational apparatus, organization and staffing in a streamlined direction; bring into play the achievements that the Yet Kieu water sports center has achieved in mobilizing non-business revenues to reach the TCTC units after the merger in 2022.

- Merging and reorganizing Hoa Lu Sports Center and Phan Dinh Phung Sports Center by 2020, financial autonomy in 2020. Toward to operate as a joint stock company in the period 2025 - 2030. Phan Dinh Phung Sports and Sports Center is building facilities, currently the unit has only 3 employees, so the merger with Hoa Lu Sports Center (with the same model of operation) is essential. set. In the future, when the Phan Dinh Phung Sports Center is completed, on the post-merger unit foundation (with experience in operations and finance), it will operate well the facilities of the Fitness Center. new Phan Dinh Phung sports.

- Maintain 02 units: the Unified Sports Center and the Sport and Sports Service Center, have self-finance. To progress to operate as a joint stock company model in the period 2025 - 2030.

Second, classify financial public non-business services and public non-business services using state budget in the traditional culture field.

One of the tasks in the process of implementing autonomy at the NTSCs is that line ministries and provincial People's Committees need to issue a list of SNC services using state budget funds.

This is also a premise for management levels to implement Decree 32/2019 / ND-CP on assigning tasks, ordering or bidding to provide public products and services using the state budget from the source. funding recurrent costs. In the field of traditional culture, on December 11, 2017, the Prime Minister issued Decision 1992 / QD-TTg promulgating the list of SNC services using state budget in the fields of culture, family, sports and tourism. Resolution 19 / NQ-TU dated October 25, 2017 clearly stated the orientation to build and complete the list of DVSNCL to use the state budget: “Clearly defining activities to perform political tasks assigned by the State to economic service business of the DVSNCL. Develop and complete lists of DVSNCL using state budget according to the following principles: for essential services, the State ensures funding; For basic services, the State shall provide funding for the implementation; For services of specific characteristics of a number of branches or domains, the mechanism of ordering or bidding shall be applied to create conditions for non-public establishments to participate together; for other services, to step up the implementation of the socialization mechanism and mobilize the participation of all economic sectors ”.

With the current relatively complete legal basis, the proposed list of Fishery Services using State budget in the traditional culture field in Ho Chi Minh City should be divided into 2 parts.

- Part 1 includes the List of public non-business services using the State budget in the traditional culture sector of Ho Chi Minh City within the list of public non-business services using the State budget under the management of the Ministry of Culture and Information, issued together with Decision 1992.

- Part 2 includes the List of public non-business services using the State budget in the traditional culture sector of Ho Chi Minh City, outside the list of public non-business services using the State budget under the management of the Ministry of Culture and Sports, issued together with Decision 1992. Specifically:

- + Performing arts: performing services of the art of reformed opera, opera singing, puppetry, circus, drama for domestic and international audiences; building programs, staging repertoire, plays and organizing art performances to serve the local people according to the annual plan;

- + Grassroots culture: Services of organizing cultural, art and sports activities to serve the masses of the city people.

- + Cultural heritages: service of preserving and exhibiting artifacts at museum units according to the tasks assigned by the city.

- + Sports: organizing sports and sport activities for all participants in the city; organizing city sports meeting; organizing sports activities serving the city’s political duties.

- + Cinema: film recording service for major events of the city; service organizing cinema activities at theaters for political tasks, organizing mobile cinema activities for political tasks.

Third, renovating the state budget management mechanism for the traditional culture units in the field of traditional culture.

Decree 32/2019 / ND-CP on assigning tasks, ordering or bidding for public service provision using the state budget This Decree renews the method of assigning recurrent expenditure estimates from the budget to DVSNCL. show mode of assigning, ordering or bidding for the provision of public non-business services. Funding for assigning tasks, placing orders or winning bids is the source of revenues of public non-business units, so DVSNCL has to improve the quality and lower the cost of public products and services to be assigned tasks, place orders or win. bid.

This Decree also promotes socialization in the provision of public products and services because it has comprehensively and unified the provision of issues related to the provision of public non-business products and services, and creates equity. , transparency in the provision of products and services for public non-business. Including the content of fundamental innovation in prices and roadmap for calculating public non-business service prices according to market prices, in accordance with the capacity of the state budget and people's income.

Assigning tasks, placing orders or bidding to supply public products or services shall comply with the principle of ineligible bidding to place new orders, not to place orders and to assign tasks. With the method of placing orders, the State only places orders with units with higher quality of public products and services and lower prices, so the units themselves have to compete with each other. As for the bidding mechanism, the public non-business units not only compete with each other, but also have to compete with organizations and individuals of all economic sectors in providing public products and services. If the product and service quality is low, the cost is high, the public service provider cannot win the contract, fails to complete the task and of course it will be handled, merged or dissolved in the spirit of Resolution 19 / . NQ-TW on continuing to renovate the organizational and management system, improve the quality and efficiency of operations of public non-business units.

Decree 32/2019 stipulates that traditional culture services use methods of assigning tasks, ordering and bidding in the provision of services in this field using state budget funds. However, the conditions for implementing the form of ordering, bidding in the provision of risk services in the traditional culture field in the city are not complete (due to the lack of promulgation of a list of risk services using state budget funds, technical and economic norms. should be implemented in the form of task assignment. After having full legal documents, gradually shifting to the form of ordering or bidding.

Fourthly, delegating synchronous autonomy on all contents to the units who have autonomy in recurrent expenditure, investment expenditure and self-reliant recurrent expenditure unit.

One of the difficulties in implementing autonomy in the traditional culture units in the traditional culture field is that the units are assigned financial autonomy but do not come with real autonomy in organizational apparatus, personnel, and money decisions. salary, investment decision from legal sources outside the state budget. The actual operation of the units has shown that this inconsistency has affected the quality of service that the units provide. Therefore, with units with full control of recurrent expenditures, investment expenditures and self-reliant recurrent expenditure units need to be decentralized, decentralized more strongly in the stages of organizational structure, personnel, and decision-making. salary, decision to invest from legitimate non-state budget revenues.

Fifth, perfecting the financial management mechanism in the traditional culture field in Ho Chi Minh City.

*** Revenue development solutions**

- For units in the field of cultural heritage

+ Improve the quality of regular display activities by applying technology in exhibiting activities, combining exhibiting exhibits with clips related to the displayed content.

+ In addition to normal exhibition activities, museums need to focus on innovating and exploiting their strengths in exhibition activities by organizing attractive and topical exhibitions; exhibition activities can be combined with other activities such as exchanging with historical witnesses, demonstration activities, applying technology in exhibitions to increase attractiveness, attract viewers and increase sales. ticket.

+ Organize to provide different types of services to visitors to ensure the suitability of features and functions such as providing food and drink services, releasing catalogs of books introducing museums in other languages. each other, selling souvenirs to the museum, ... These activities both help increase revenue and create opportunities to advertise the museum's activities.

+ Provide professional services such as: consulting and organizing exhibition activities, displaying traditional houses for organizations and businesses; ...

- Strengthening association activities: in parallel with the diversification of service activities, museums need to be active in linking with schools, tourism businesses, socio-political organizations to sign contracts to visit the museum, attracting the target customers are students, students and tourists. Organizing mobile exhibitions in the city and neighboring provinces.

- Strengthen promotional activities, marketing, introducing the museum for many different types of customers. If the museum is considered as a cultural service, like any other industry, the museum must also carry out marketing and marketing activities to the public; introduce special products and services to different groups of customers to attract visitors to the museum.

- For art performance units

Art units cooperate, sign performance contracts with businesses, organize, perform tours in many localities or combine with travel agencies to open art performances tradition, contemporary art to serve tourists. This is a solution to help the units increase funding to pay the artists' salaries and maintain regular operations.

However, this is only a short-term solution because implementing these performances does not help public art units accumulate capital to reinvest in facilities, in the context of many art units. The City's public arts did not have a theater, or the theater had deteriorated frequently, and had to rent out performance venues. The long-term solution that units need to think about is to develop a plan to submit to the competent authorities for approval to transform the business model like an enterprise. Implementing this solution will mobilize social resources to invest in the development of arts, including traditional arts and will force the performers to be subject to closer supervision, not to lose assets. Government. Accompanying this form, it is necessary to closely supervise the sale or lease of state property in the units.

- For sports units

Due to the characteristics of a large city, densely populated, the average income per capita is high compared to the general level of the whole country, so the need to practice sport of the people is large. The public sports units in the city have dynamically and creatively called for investment in the form of socialization to develop the operations of the units towards total autonomy. This is the right direction to continue implementing in the near future.

** The solution to use money economically and effectively*

One of the goals when implementing the financial institution mechanism at the units is to force the units to use the funds economically and effectively towards cost management and financial management like enterprises. For this purpose the units need to:

- Develop and renew internal spending regulations appropriate to each period. the development of internal spending regulations should follow the practical work and tasks of each unit. The heads of schools need to have a long-term vision and propose long-term tasks so that they can balance the funds that the school can mobilize. Reflect these resources fully and promptly in the internal spending regulations to avoid the fact that some units do not actually comply with the current spending regulations.

- Use economically, effectively and closely monitor expenses by performing cost analysis at the unit.

Due to the habit of subsidizing and the psychology of relying on the “milk vote” for a long time, the financial accounting requirements at the NTDCs are simply recording revenues and expenditures, and the regulations on spending norms. Therefore, the cost management of most of the NTFP-RC in the city is passive and ineffective. When implementing financial institutions, especially autonomous recurrent expenditure units and self-financed recurrent and investment spending units, it is necessary to analyze the financial situation of the units, analyze the revenue - costs of the application taste. In which, cost analysis should be done with many methods of classifying costs such as: (i) classifying according to economic contents to see the proportion between personal payments, professional expenses, expenses for procurement and repair, other expenses in the unit’s total operating costs; (ii) classification by direct and indirect costs; (iii) classification by valuation, variable fees. Combining different types of classification will help the unit have an overview of how the current unit’s funding use is, from which there are cost-saving solutions.

** Solution for distributing financial results*

When DVSNCL perform well the solutions to develop revenue sources and manage expenditures effectively, the unit will have a positive difference of revenue - expenditure at the end of the fiscal year. The DVSNCL will have to make a reasonable and effective distribution of the after-tax financial results on the basis of compliance with the provisions of law. Like businesses, the distribution of these financial results will affect the unit’s operations in the coming years.

For example, determining the criteria for distributing additional income to employees in the unit in the direction of equalization or based on labor productivity will greatly affect the employees’ efforts and working results in The next years; The allocation to the IWT Fund will affect an entity’s ability to re-invest in its facilities in the future and, in turn, the quality of the service provided. However, unlike enterprises that have full authority to decide on the after-tax profit distribution rate, the distribution of financial results of DVSNCL is currently subject to the provisions of Decree 16/2015 / ND-CP.

Thus, with these provisions to manage the distribution of financial results well, units need to give very specific quantitative criteria on the basis of legal regulations and future development orientation. the entity’s hybridization to distribute financial results; These contents must be clearly shown in the internal spending regulations and publicly available throughout the unit. In particular, the units need to focus on building criteria for distributing additional income for employees. Because most of the DVSNCL in the city have been analyzed, the salary payment for civil servants

is still in accordance with the rank and position regulations, so if the criteria for additional income sharing continue in the direction of equalization, it will not encourage employees to increase learning, improve knowledge, improve capacity and contribute to the unit; The unit also has difficulty in recruiting talented people to work. Therefore, the determination of the additional income sharing criteria should be done as follows:

- The units need to develop criteria to evaluate the capacity and performance of each member, each division within the unit based on the nature of each type of work, clearly define the main activities, the core activities of the unit, from which giving the distribution plan and adjusting the plan of additional income and expenditure to suit the staff capacity.

- Organize annual emulation review based on a system of criteria for evaluating the capacity and dedication results of each member, each department to determine the level of distribution, to avoid scratching. It is advisable to include a key performance indicator (KPI) evaluation system (a system of indicators measuring the success of a job) into the assessment of the unit's activities and management of its staff. When units build a KPI evaluation system, they need to provide indicators suitable to the characteristics of each unit.

- The allocation of monetary funds from the difference between revenues and expenditures, from the saved funds should pay more attention to the Development and Non-Business Funds. Because the infrastructure invested in the future will be degraded or need new investment, so it is necessary to have a strategy to set aside the annual career development fund to create this large fund in the future to invest. major projects bring high efficiency for service delivery in the context of reduced investment sources from the state budget.

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SOME ISSUES TO CONSIDER WHEN IMPLEMENTING VIETNAM'S IMPORT AND EXPORT TAX COMMITMENTS IN FTAS HANOI, VIETNAM

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Abstract: *Import and export taxes commitment is an important content in Free Trade Agreements (FTAs). Vietnam has now joined many FTAs and is an open economy compared to other countries in the region and the world. Vietnam's perception and policy of joining FTAs are consistent after undertaking economic reform (1986). However, due to the differences in negotiating context, negotiating parties and the time of negotiating, there is a discrepancy between export-import taxes implemented in the laws and those of the Agreements. Adopting a pragmatic perspective, this paper examines the key contents of various FTAs and the challenges Vietnam face in implementing those FTAs. It provides new evidence of the impact of differences in tax rate on Vietnamese economy, in general, and exports and imports, in particular. The paper provides a set of recommendation for the government to bring efficiency in the economic development with regard to the set objectives, in term of different sectors as well as in term of the policies supporting specific sectors.*

Keywords: *free trade agreements, export and import taxes,...*

1. Introduction

Vietnam is one of the open economies participating in many bilateral and multilateral Free Trade Agreements (FTAs). Currently, Vietnam is implementing the Agreement of the World Trade Organization (WTO), 14 FTAs and bilateral preferential trade agreements (PTAs). In addition, Vietnam is also continuing to negotiate 04 FTAs. One of the important contents of these Agreements is the commitment on an open market, import tax reduction on originating goods within the frameworks of each Agreement.

Extensive integration process from joining the Association of Southeast Asian Nations (ASEAN) and implementing tax commitments in the ASEAN Trade in Goods Agreement (ATIGA) to bilateral, regional and multilateral trade agreements has formed a system of diversified import and export tariffs in different frameworks, such as most favored nation tax (MFN) and special preferential tax (FTA). Currently, in line with the framework of Trade Agreements, Vietnam has issued Decrees on special preferential tariffs for counterparties under trade agreements including the aforementioned 15 parties under the framework of each Agreement, corresponding with 15 different tax rates for a single product.

Due to the differences in characteristics of the negotiating parties, interests of the negotiation process as well as the time of negotiation, there are a tax rate discrepancy between FTAs and FTAs

with MFN (Hayakawa, 2014). Differences in import tax rates between FTA frameworks will have an impact on trade, investments, policies, and on the usage of the import and export tax for state management and administration.

Therefore, studying the import and export tax differences between FTAs and FTAs with MFNs for each commodity group will show the impact of tax commitments on trade and investment mobility. And the study suggestions could help regulators to find appropriate policies for industry development and administration.

2. Study background

Up to date, Vietnam is in the process of negotiating and parallel implementations of FTAs and trade agreements. Tax discrepancies occur when commitments on tariff schedules are available after the conclusion of negotiations and the change of tax codes. There are no previous studies on tax rate differences for each specific industry in order to propose policy solutions. Therefore, the content of this study is to investigate the common problems and will open the study of tax policy for each item in Vietnam’s import and export tariff, which currently has more than 10,813 items.

3. Results and discussions

Vietnam has strictly followed the guidelines outlined in the Resolution No. 06-NQ/TW issued on November 5, 2016 by the Central Committee of the Communist Party . The Resolution revolves around how to implement the international economic integration effectively and stabilize social-values when we join new-generation FTA systems. Currently, Vietnam is implementing agreements including the WTO Agreement and 14 FTAs/PTAs, namely: (1) ATIGA Agreement; (2) ASEAN-China Free Trade Agreement (ACFTA); (3) ASEAN-Korea Free Trade Agreement (AKFTA); (4) ASEAN-Japan Comprehensive Economic Partnership (AJCEP); (5) ASEAN-Australia-New Zealand Free Trade Agreement (AANZFTA); (6) ASEAN-India Free Trade Agreement (AIFTA), (7) Vietnam-Japan Economic Partnership Agreement (VJEPA); (8) Vietnam-Chile Free Trade Agreement (VCFTA); (9) Vietnam-Korea Free Trade Agreement (VKFTA); (10) Vietnam-Eurasian Economic Union Free Trade Agreement (VN-EAEU FTA); (11) The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP); (12) ASEAN - Hong Kong, China Free Trade Agreement (AHKFTA), (13) Vietnam - Cuba Agreement; (14) Vietnam - EU Free Trade Agreement (EVFTA). In addition, Vietnam is also negotiating 04 agreements, including: (1) Vietnam - European Free Trade Association EFTA; (2) The Regional Comprehensive Economic Partnership (RCEP) agreement; (3) Vietnam - Israel Agreement; (4) Vietnam - UK Agreement.

Figure 1. Vietnam’s progression of signing FTAs



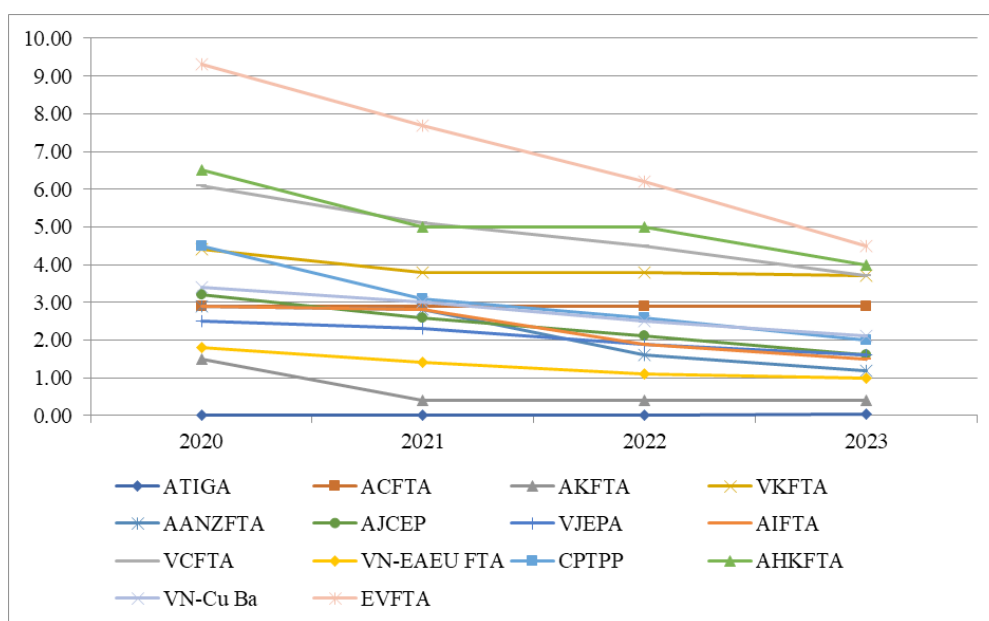
Sources: Department of International Cooperation - Ministry of Finance

Import taxes are used as a barrier to trade and are negotiated to be removed in FTAs. On the basis of tax rates according to the WTO, FTAs and bilateral agreement commitments, Vietnam stipulates in the 2016 Import and Export Tax Law the following import and export taxes: (1) MFN preferential import duties; (2) normal tax rates (equal to 150% of the MFN rate); (3) Special preferential tax rates (FTAs and bilateral PTA agreements).

The FTA tariffs are negotiated on the principle that the MFN rates will be eliminated according to the specific roadmap. For example, the tax rate in the EVFTA is reduced from the MFN rate in 2012. All tariff commitments in the FTAs at different times are still internally legalized under the same version of the ASEAN Harmonized Tariff Nomenclature (AHTN) to implement commitments on tariff harmonization in ASEAN.

With regard to market opening for imported goods, the levels of import tax commitments in FTAs are formulated and implemented according to the committed roadmap with FTA counterparties, usually the parties that have a large trading volume and investment with Vietnam.

Figure 2. Summary of import tax commitments in the framework of FTAs for the period of 2020-2022

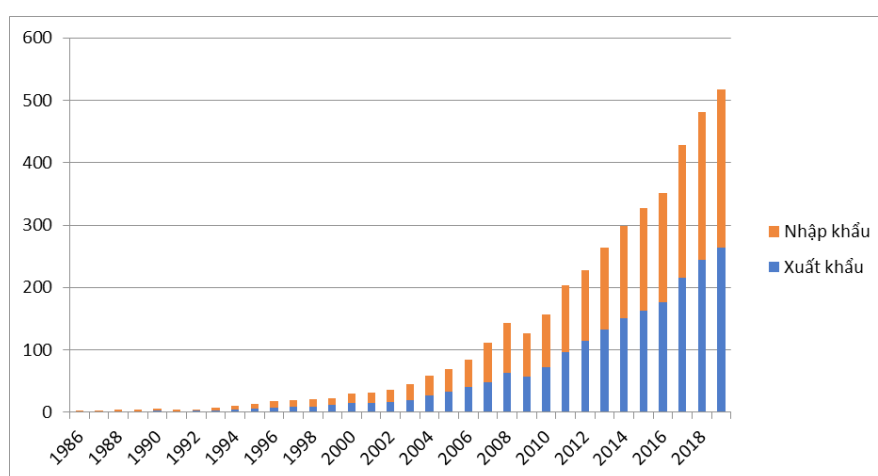


Sources: authors' collection

The results of international economic integration in term of trade are shown through many indicators such as economic growth, investment, import-export trade and economic development of industries. In particular, the import-export turnover of Vietnam over the years has been constantly increasing. Export of goods over GDP in 1988 is only about 18.9%, and by 2020 it is over 80%, which is ranked quite high in the world. Both exports and imports over GDP reached over 190% by 2018-2020 and that brings Vietnam to be among the top 5 countries with the highest economic openness in the world. There has been a strong shift from exports of raw or preprocessed goods to the exports of processed or refined goods. Vietnam's goods have been expanded to the market

of 220 countries and territories, in every continent especially Asia. With regard to imports of goods, it has also increased dramatically. Imported goods are mainly machinery, equipment, raw materials and they account for over 80% of imports; while consumer goods only account for about 10% of imports. The rest are other goods. That drastic shift is driven by the impact of FTAs as tax barriers are removed. However, some machineries, equipment and raw materials, due to early participation in the FTA, are mainly imported from FTA markets with lower tariffs and an earlier cut-off schedule. Most notably, the trade volume of Vietnam and China had increased 16 times (from 7.2 billion USD to 116.9 billion USD) from 2004 to 2019 and it accounted for 19.7% of Vietnamese total imports and exports, in which Vietnam is always in a state of trade deficit.

Figure 3. Growth of import-export turnover in the period of 1986 to 2019



Sources: authors' collection

Commitments to international economic integration, including commitments in the financial sector, have contributed to improving the investment environment towards greater transparency, openness, and market opening for goods and services. At the same time, synchronous domestic reform measures have raised the attractiveness of Vietnam to foreign investors. In addition, the commitments on taxes and rules of origin of the parties in the Agreement are also the incentives for investors to shift their investment capital into different sectors to optimize benefits from FTAs (Kawai and Wignaraja, 2011). Therefore, differences between taxes and rules of origin are the motivations that attract investment; however, unreasonable differences can distort and attract investment on discouraged sectors and industries.

A specific consideration is the textile and garment industry, a key industry in Vietnam. This is an industry where Vietnam has advantages and attracts investment from many foreign investors. The number of businesses in this industry has continuously rose over the past years (from 2000 companies in 2006 to 6000 companies in 2016). According to 2016 data, foreign-invested companies only account for about 25% of the total number of businesses in the textile and garment industry, but make up of about 60% of exports. Vietnam currently mainly uses textile industry machinery, equipment and technology originating from China, Taiwan, Japan, and Korea.

Vietnam's tax commitments in FTAs (except ATIGA) are stricter than the CPTPP Agreement. The tax rate on textiles and garments will be significantly reduced compared to the current MFN tax rate (12%). This low tax on textile materials will consequently attract more investments. At the same time, Vietnamese companies, when exporting to FTA markets, are given certain incentives as this is one of the strong commodities of Vietnam. Therefore, differences in import tax rates and original commitments in the FTAs will partly affect the import policy of raw materials and finished products as well as impact on the development of the industry.

Table 1. Average import tax rates and imports with tax incentives for fabrics and textiles and garments from FTA markets

FTA	Fabrics of all kinds		Textiles	
	Average tax rate (%)	Imports with preferential tax rates (million USD)	Average tax rate (%)	Imports with preferential tax rates (million USD)
AANZFTA	0	0	0	0,2
VNEAEUFTA	0	0,2	0	0,06
ACFTA	1,7	330,3	0	101,7
AKFTA	1,7	13,6	0	0,6
AIFTA	3,1	4,4	3,3	0,3
AJCEP	1,1	0,6	3,4	0,01
AHKFTA	7,9	-	14,4	-
ATIGA	0	29,3	0	33,6
VCFTA	4	0,01	6,5	0
VJEPA	1	0,4	0	0,6
VKFTA	0,2	9,1	0	0,8
CPTPP	0	0	0	0
EVFTA	0	-	8,7	-

Sources: authors' collection

The participation in FTAs will help Vietnam to take advantage of the capital, science and technology of other markets, especially from developed markets. Given that the world is increasingly integrating and promoting trade liberalization, if we can participate in value chains, and supply chains, it will create higher quality for the economy. At the same time, with the signing of CPTPP and EVFTA, we can both enhance integration, take advantage of the economic development market and create momentum for reform and innovation in Vietnam. With all of those, the position and attractiveness of the Vietnamese market will be multiplied.

4. Conclusion and regulatory implications

The study of import and export tax policies for each industry and field is necessary in the context of Vietnam joining many FTAs and there have been "spaghetti bowls" effects between the Agreements (Thangavelu and Narjoko, 2014). The study of tax differences, the effects of preferential tax and special preferences will help sectors and industries to have uniform policies

to more effectively adjust benefits from trade agreements as well as better adapt with industry development strategies.

Even within the framework of the FTAs, there are also mechanisms for voluntarily lower a number of tax rates compared to commitments. Some FTAs will also be renegotiated to extend commitments after the implementation process. Thus, the research results will bring positive effects not only from the sector or industry, but also provide a clearer policy orientation for industries that are significantly affected by the tax differences between trading parties of Vietnam, especially FTA counterparties.

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MACROECONOMIC ENVIRONMENT AND FDI: EVIDENCE FROM DEVELOPING COUNTRIES IN ASIAN

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Abstract: *This research tests the macroeconomic environment factors that affect eleven Asia developing countries. The research tests for the impact of these individual macroeconomic environment components to FDI. These factors are categorised into 4 groups: gross domestic product, the rule of law, government size and market openness. The study results suggest a positive impact of property rights, government integrity, and growth rate. However, a low government size index such as tax burden and government spending creates a negative effect on FDI inflows. The findings express macroeconomic environment factors policymakers should concern to attract FDI inflows in these Asia developing countries.*

Keywords: *Macroeconomic Environment, investment environment, FDI, GDP, Trade Openness*

JEL codes: C33, F21

1. Introduction

FDI exerts a significant impact on economic growth, transferring technology, expertise and capital, especially the emerging market economy. Thus, the developing and advanced countries use their potential effort to create better market conditions, especially macroeconomic environment in attracting FDI that are leading to intensified competition in taking FDI inflows. Because of the investment environment quality from a country have a significant impact on inflows of FDI in the respective economy. More concretely, the macroeconomic environment includes Gross Domestic Product (GDP), the rule of law (government integrity, property rights index), government size index (tax burden and government spending), trade openness (trade freedom index). So, the purpose of the research examines how macroeconomic environment elements affect FDI inflows attraction in eleven developing countries in the Asia section.

After the introduction section, section 2 reviews the existing theoretical literature and examines the available empirical findings from other countries and regions on the determinants of FDI and its links with other factors. Section 3 shows the data, methodology and empirical results while section 4 summarises the essential findings and accordingly concludes with some policy implications.

2. Empirical Evidence Institutional Determinants of FDI

From a macro perspective, FDI's theory all claim that FDI is a fixed investment form of international cross-border business. Today, the trend of globalization has made foreign direct

investment flows which have become more prevalent in the world. According to the International Monetary Fund (IMF, 1993) “IMF and OECD have a definition that FDI is the investment activities which aim to establish long-term economic relations with an enterprise operating in the economic territory which is different the investor’s economy, the purpose of the investor is to gain real management of the enterprise”. FDI attraction is concerned seriously by every country, especially developing countries, trying to adjust appropriate policies and relevant institutions to take FDI inflows. This is also suggested by UNCTAD - United Nations Conference on Trade and Development (established 1964). Based on Dunning’s OLI theoretical framework, UNCTAD (1998) provides three groups of factors which are affecting the investment environment of the host country, including policy framework factors for foreign investment, economic factors and institution factors for a favourable zone of business conditions.

There are two primary ways, attracting FDI, include complements or substitutes. Firstly, there is an establishment for FDI in some favourable conditions or some priority states that are not applied to all investment. Secondly, the improvement in the overall political and economic environment is necessary to reduce risk. It means that reducing risk is clearly defined and enforced property rights. In addition, well-enforced property rights not only lead to more significant amounts of current domestic investment but also create a stable market environment that can promote FDI. Confidence in the enforcement of property rights reduces the incentive to ensure against political risk and reduces the cost of doing business (Abbott, F. M., 2000). Studies on corruption and political risk show that foreign investors prefer to do business in environments with well-enforced property rights (Wei, S. J, 2001).

The different explanation in the flow of FDI among developing countries, some analysts point in the particular salience of democracy, transparency and good governance while others focus on a stable macroeconomic environment and the capacity for economic governance (World Bank (1997). Recently, new institutional economists have extolled the role of institutions such as property rights, the rule of law and economic freedom in mobilising both foreign and domestic capital for growth and development (Collier, P., & Gunning, J. W., 1999). Indeed, the economic determinants of FDI are crucial. They can only come into play under the regulatory framework is enabling. The risk of adverse changes in the macroeconomic environment represents the most critical threat to the future of FDI flows.

Edison (2002) demonstrated the relationship between international financial integration and economic growth and at the same time emphasized government control over economic characteristics, institutions, policies and financial instruments in 57 countries under a combination of different statistical methods to clarify the relationship between economic growth and FDI. A higher rate of growth of GDP is expected to attract more FDI. (Culem & Claudy G., 1988) obtained empirical evidence for the fact that foreign investors are attracted to faster-growing markets.

Besides, tax competition has taken an important role which creates opportunities for FDI globally, so policymakers should consider the severe concern to establish tax policy. Many studies

have expressed empirical evidence of tax competition in many countries and given out some suggestion for nations compete primarily on tax burden. Some studies of Wei (2001) và Demekas (2007) argue that corporate income tax reduces FDI. Wei (2001) studied the effect of taxation and corruption on international direct investment from fourteen source countries to 45 host countries, with central findings. In a benchmark estimation, a rise in either the tax rate on multinational firms or the corruption level in a host country reduces inward foreign direct investment (FDI).

The empirical evidence is not seriously concerned factors like bureaucratic delays, judicial transparency, performance requirements. This is due largely to severe measurement problems. Wheeler (1992) used a Business International Index of many domestic sociopolitical factors - including bureaucracy and red tape, quality of the legal system and corruption - and found it to be insignificant for US manufacturing FDI. Singh (1995) applied a Business Environment Risk Intelligence index. It expresses a mixture of economic factors that include economic growth, the balance of payments performance and currency convertibility as well as sociopolitical factors like political continuity, attitude towards foreign investors and enforceability of contracts.

Efficient protection of civil and property rights, extended economic and political freedom and low level of corruption has been in particular shown to be associated with FDI. La Porta (1999) provide empirical evidence for the determinants of FDI inflows. In particular, there are two different data sets of indexes of institutional quality, namely one that was created by Kaufmann, (2004) - political stability, government effectiveness, regulatory quality, the rule of law and control of corruption. Besides this, the other one from a paper La Porta (1999) - property rights index, business regulation index, corruption and bureaucratic delays.

Previous empirical studies tried to identify the effects of investment environment on the inflows of FDI in a country. However, the results are controversial, mostly due to the difficulty of measuring qualitative variables such as bureaucratic delays, judicial transparency, performance requirements due mainly to severe measurement problems.

3. Methodological Issues and Empirical Findings

A vital element of the econometric analysis is the specification of the model. The choice of the variables has been dictated by the literature reviews on the determinants of FDI. However, it has sometimes been constrained by the unavailability of data.

The study uses regression analysis consisting of some of the important determinants of FDI flows as control variables as well as the GDP growth rate, Government size (Tax burden and Government spending), the Rule of law (Property rights; Government Integrity) and Trade Freedom. The independent variables have been chosen to reflect the attractiveness of the host economies as potential locations for foreign investors. All the data has been obtained from World Development Indicators by the World Bank and the Heritage by the Economic Freedom. Data collected from 11 ASIA developing countries are Cambodia, China, India, Lebanon, Indonesia, Malaysia, Pakistan, Philippines, Srilanka, Thailand and Vietnam in the period 2000–2018. The causal model for the FDI inflows is postulated as follows:

$$\begin{aligned} \text{LFDI}_{it} = & \beta_1 + \beta_2 \text{GDP}_{it} + \beta_3 \text{TAX}_{it} + \beta_4 \text{GSPEND}_{it} + \beta_5 \text{PRIGH}_{it} + \beta_6 \text{GINTER}_{it} \\ & + \beta_7 \text{TRADE}_{it} + \varepsilon_{it} \end{aligned}$$

Where in:

LFDI_{it}: Our research will start with a preliminary linear model after taking logarithms for the dependent variable, FDI. Foreign direct investment is the net inflows of investment, it is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows total net FDI basing on World Bank Indicator.

GDP_{it}: GDP growth (% Annual) over the period 2000 - 2018 (World Bank Indicator)

TAX_{it}: Index of Economic Freedom 2019 as a proxy for tax burden

GSPEND_{it}: Index of Economic Freedom 2019 as a proxy for Government Spending

PRIGH_{it}: Index of Economic Freedom 2019 as a proxy for Property Rights.

GINTER_{it}: Index of Economic Freedom 2019 as a proxy for Government Integrity

TRADE_{it}: Index of Economic Freedom 2019 as a proxy for Trade Freedom

ε_{it} : Error term of the model with $\varepsilon_{it} \approx \text{i.i.d.}(0, \sigma_i^2)$, $E(\mu_i / \varepsilon_{it}) = 0$;

3.1. Macroeconomic environment variables

GDP growth rate.

A higher rate of growth of GDP is expected to attract more FDI. Culem (1988) obtained empirical evidence for the fact that foreign investors are attracted to faster-growing markets. Market size is generally measured by GDP, per capita income or GDP growth rate. In this case, real GDP has been used as the proxy for the size of the domestic market taking into account the effect of inflation. We include the growth rate of GDP to control for potential market size. Theoretically, the growth rate of a country's economy would seem to be important for attracting FDI, as a fast-growing economy in the present would indicate future development potential (Schneider et al, 1985).

Tax Burden.

Recipient governments typically attract investments by providing fiscal incentives essentially through lowering taxation levels and relaxed repatriation of property income laws to prospective foreign direct investors. Individual and corporate income tax rates are an important direct constraint on an individual's economic freedom, reflected by the Index. However, it is not a comprehensive measure of the tax burden. So, governments impose many other indirect taxes, including payroll, sales, and excise taxes, and tariffs and value-added taxes (VATs) by the study of Hartman (1984). Several empirical studies have tried to prove the influence of taxes on direct investment provided by J Hines (1999) and De Mooij (2003). If the exemption method applies, the relevant tax burden for location decisions is defined by the foreign taxes while in case of tax credits the tax burden depends on whether or not the tax burden is higher in the home country or in the target country. Buettner (2017) indicated that the relative tax burden on international direct investment or suppresses investment.

Research often takes resort to national accounts data relying on a mixture of tax revenue statistics. Economic Freedom Index shows the burden of these taxes is captured by measuring the overall tax burden from all forms of taxation as a percentage of total gross domestic product (GDP). Index of Economic Freedom 2019 is scaled from 0 (most burden tax) to 100 (least burden tax).

Government Spending.

Higher government spending may indicate more expenditure on socially productive sectors such as education and health for a more efficient human capital (Molana et al, 2007) but also in terms of improved physical capital like infrastructure, which are crucial to attracting FDI. However, both theory and empirical evidence also suggest that the relationship between the level of government spending in an economy and FDI inflows can be negative as well, in terms of the crowding-out effect (Goodspeed et al, 2006)). Furthermore, being bigger government size in terms of expenditure, in general, represents more complex bureaucracies that often linked to administrative inefficiencies and bribery which increase considerably the hassle costs of investing in the country (Bénassy-Quéré et al, 1999).

The economic freedom index takes a comprehensive view of government spending (on a scale from 1 to 5). Government spending comes in many forms, such as to provide infrastructure, fund research, or improve human capital that is considered for investment. Besides this, the government spends on public goods to create the benefits to accrue broadly to society. However, this benefit expresses in ways that markets cannot price appropriately. Noticeably, excessive government spending runs a great risk of crowding out private economic activity. Hence, the level of public expenditure directed at improving the physical capital of the recipient country constitutes a substantial indicator of government's commitment to boost up the economy through the attraction of foreign capital flows

Property rights

Property rights are a main factor in the accumulation of capital for production and investment. The primary aspect of the protection of property rights is the enforcement of contracts. Even-handed government enforcement of property contracts is essential to ensuring equity and integrity in the marketplace. More recently, new institutional economists have extolled the role of property rights, the rule of law and economic freedom in mobilising both foreign and domestic capital for growth and development (Collier, 1999). Low protection of property rights over physical capital or profits could be a severe obstacle to investments (Anghel, 2005).

Index of Economic Freedom 2019 takes A rating of property rights in each country (on a scale from 1 to 100). The more protection private property rights receive, the higher the score is recorded. The score depends on the degree of legal protection for private property. It means that the extent to which the government protects and enforces private property protection, the probability that the government will expropriate private property, and the country's legal protection to private property.

Government Integrity.

There are many different explanations about the FDI flows among developing countries, Blonigen (2005) gives in particular to transparency and good governance. As a result, the rule of law captured by property rights protection and government integrity are expected to display a positive relationship with FDI inflows. Government integrity expresses the low rate of corruption because corruption expresses the negative impact on government integrity (Júlio et al., 2013). Corruption can have many other detrimental effects on the host countries. In the economic sphere, corruption may reduce growth rate, possibly as a result of reduced domestic investment (Mauro, Paolo, 1995; Knack, 1995; Rodrik, 1996). In political-economy terms, corruption often contributes to an unfair income or wealth distribution. In political terms, corruption can breed political instability. These essential aspects of corruption may interact with its effect on inward FDI. So, Index of Economic Freedom 2019 takes A rating of Government Integrity in each country. The index is scaled from 0 (most corrupt) to 100 (least corrupt).

Trade Freedom

It shows the extent of international openness to trade. The relation between FDI and the degree of openness of a country proxies the liberalization of the trade regime in the host country. Generally, trade freedom could be closely related to FDI, because it could make the country more attractive to foreign investors (Alcalá, F., & Ciccone, A., 2004). This implies that foreign investors prefer countries with relatively liberal trade regimes, possibly within a region with free trade agreements (Blomström, M., Fors, G., & Lipsey, R. E, 1997). Besides, international trade openness has a positive impact since it reflects a country's accessibility to global markets (Janicki, Hubert P, Wunnava, Phanindra V, 2004). In addition, the Heritage Foundation's Index of Economic Freedom (IEF) as a proxy of the domestic investment environment show a significant FDI determinant. Base on the economic freedom indicators, the country with specific scores that are ranged from 0 to 100, with 100 being the highest. Countries with scores from 80 to 100 are considered to be free, with scores from 70 to 79.9 mostly free, from 60 to 69.9 moderately free, from 50 to 59.9 mostly unfree and, finally, from 0 to 49.9 repressed. Therefore, Trade Freedom is derived from scores of the IEF and its components from the Heritage Foundation.

3.2. Impact of Macroeconomic environment variables on FDI over the period 2000 -2018

Table 1: Summary statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
LFDI	209	9.636927	0.7514007	7.911587	11.46379
GDP	209	5.748718	2.581274	-1.926405	14.23139
TAX	209	79.40909	7.713734	53.9	96.7
GSPEN	209	82.82488	8.609378	41.9	94.5
PRIGH	209	39.50191	15.44355	10	85.3
GINTER	209	30.95311	9.368493	10	54.8
TRADE	209	68.17943	12.62973	19.6	87.4

Source: Author's computation

Table 1 provides the descriptive statistics of the sample indicators during the period. The results show FDI has an average value of 9.637. Data shows China is the country with the highest level of FDI attraction in the sample with over 200 billion USD / year and Cambodia is the country attracting the least FDI in the region about 84 million USD / year. China has also the highest GDP growth rate (14.23%) because it is the most developed country in the region, and Lebanon is the lowest (-1.92%).

The rule of law indicators (property rights index, government integrity) are often high in countries where there is little government intervention, such as variable PRIGHT (the highest country is Malaysia: 85.3, and the lowest country is Vietnam: 10), variable GINTER (the highest country is Malaysia: 54.8, and lowest country is Lebanon: 10),

The government size index (tax burden and government spending) is worth examining for attracting foreign investors. Sample data shows: Tax Burden Index, TAX includes lowest country is VietNam: 53.9 and the highest country is Lebanon: 96.7, and the government spending index, variable GSPEN includes lowest country is Lebanon: 41.9 and the highest country is Cambodia: 94.5.

Table 2: Correlation Matrix

	LFDI	GDP	TAX	GSPEN	PRIGH	GINTER	TRADE
LFDI	1.0000						
GDP	0.3048*	1.0000					
TAX	-0.3358*	-0.2252*	1.0000				
GSPEN	-0.1060	0.1434*	-0.2459*	1.0000			
PRIGH	0.0235	-0.1944*	0.1247*	0.0309	1.0000		
GINTER	0.2444*	0.0417	-0.1810*	-0.0332	0.4119*	1.0000	
TRADE	0.0663	-0.1909*	0.2466*	0.0919	0.1395*	0.2763*	1.0000
	0.3401	0.0056	0.0003	0.1856	0.0439	0.0001	

Note: * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$.

Source: Author's computation

Table 2 shows the sign of the explanatory variables in the model with a statistical meaning at 1%. In general, the correlation between variables is low; therefore, it eliminates the possibility of multicollinearity in regression analyses (Evans, R. J., 1996).

In which, the relationship between the given variables of macroeconomic environment have different degree that affect to FDI. With the significance level of 1%, the variable TAX has an inverse relation (-0.3358), while the variable GDP (0.3048) and the variable GINTER (0.2444) represent the same relationship with FDI. Besides, Table 2 also provides the correlation matrix of the individual IEF components. The variable PRIGHT and GINTER indices display the highest correlation (0.4119), and the lowest correlations are observed between the variable PRIGHT and SPEND (0.0309).

To analyse the impact of Macroeconomic environment on FDI in ASIA developing countries, the paper uses estimation methods such as Ordinary Least Squares (OLS), Fixed Effects Model (FEM), and Random Effects Model (REM). Then, the author carries out tests to select the method for optimal results. The results show that the FEM model is optimal (Hausman test). Regression results of the models' POL, REM, FEM have explained the impact of the variables in the model for FDI.

However, when testing the defects of the FEM model:

- Wooldridge Test: Prob > F = 0.0069 (Wooldridge test for autocorrelation in panel data, H_0 : no first-order autocorrelation)

- Modified Wald test: Prob > chi2 = 0.0000 (Modified Wald test for Group Wise heteroskedasticity in the fixed effect regression model)

Therefore, it was found that there was a violation of the variance change phenomenon, and the correlation phenomenon of cross units. In the presence of heteroskedastic errors, regression using Feasible Generalized Least Squares (FGLS) offers potential efficiency gains over Ordinary Least Squares (OLS). So the author dealt with defects using Generalized Least Squares regression (GLS) method to overcome variance change and autocorrelation to achieve efficiency for the model.

Table 3: Summary of OLS, FEM, REM, and FGLS

Variable	OLS	FEM	REM	FGLS
GDP	0.09087839***	0.03846764***	0.03846764***	0.03488537***
TAX	-0.03751347***	0.01765856***	0.01765856***	-0.01561597***
GSPEN	-0.02323509***	-0.00200959	-0.00200959	-0.00207019
PRIGH	0.00421296	-0.00013496	-0.00013496	0.00330335**
GINTER	0.00457445	-0.00484794	-0.00484794	0.0055445**
TRADE	0.01294071***	0.01991264***	0.01991264***	0.00176036
_cons	12.827543***	6.9777391***	6.9777391***	10.426584***
R-square	0.2831	0.2495	0.2124	0.2831
Prob>F	0.0000	0.0000	0.0000	0.0000
VIF	Mean VIF = 1.31			
Hausman test	Prob > chi2 = 0.0152 (V _b -V _B is not positive definite)			

Legend: * p<.1; ** p<.05; *** p<.01

Source: Author's computation

Base on the results from table 3 we have:

The Macroeconomic environment variables affect FDI differently. Thereby, **GDP**, and **PRIGH** (Property Rights), **GINTER** (Government Integrity) and **TRADE** (**Trade freedom**) have a positive effect (although **TRADE** has no statistical significance in FGLS), while **TAX** (Tax Burden) and **GSPEN** (Spending Government) have a negative effect to FDI. The results are the same according to the estimation method FGLS as well as estimation method OLS.

In details, GDP increase 1% make FDI increase by 0.034% and the t-statistic indicates strong significance. Similarly, the variables representing Law of rule include **PRIGH** and **GINTER**, which also increase FDI (coefficients are 0.0033 and 0.0055, respectively). The result is consistent with La Porta et al.(1999), regarding the determinants of the quality of governments, the interaction

terms between the business regulation index and trade openness and between the property rights index and trade openness are not significant, but the property rights index by itself is significant. Thus, our estimation provides evidence for the significance of macroeconomic environment on FDI. It proves that aspects like GDP, protection of property rights (measured indexes -rule of law from Kaufmann et al. (2004) and property rights index from La Porta et al.(1999)), the level of government integrity, trade openness influence to the amount of FDI that a country receives.

In contrast, the tax burden is TAX variable which makes FDI decrease significant with the coefficient -0.0156. The result is consistent with Wei (2000), researcher about the effect of taxation and corruption on international direct investment from host countries, with central findings: a rise in either the tax rate on multinational firms or the corruption level in a host country reduces (FDI). So, this index was significant in the joint regression could suggest some interesting policy implications for attracting FDI. More concretely, it shows that negative factors government such as tax burden and spending government could be real obstacles that foreign investors take into account when deciding to invest in a country.

Summary, our research findings suggest that the protection of property rights and government integrity have a positive impact on FDI. These results are consistent with Júlia (2013), who found property rights, investment freedom, and financial freedom to be significant FDI determinants in the 28 EU countries between 2005 and 2007. In addition, Economou (2019) finds that property rights protection, monetary freedom, government integrity and financial freedom have a robustly positive effect on FDI.

4. Conclusion and Policy Implications

This paper studies the impact of macroeconomic environment on international direct investment from 11 ASIA developing countries (Cambodia, China, India, Lebanon, Indonesia, Malaysia, Pakistan, Philippines, Srilanka, Thailand and Vietnam) in the period 2000–2018. Results suggest a positive impact of the rule of law (property rights, government integrity), while a low government size (tax burden, government spending) creates a negative effect on FDI inflows. In line with existing literature, the positive impact of the macroeconomic environment confirmed. The contribution of the paper lies in the identification of specific macroeconomic components that exhibit statistically significant effects on FDI in Asia developing countries.

Accordingly, these are the factors that policy-makers should aspire to improve on in order to attract foreign investor. As far as property rights protection is concerned, policy-makers should promote effective legal protection of property rights and safeguard the enforcement of contracts. In this way, they can ensure equity, integrity and accountability in the market. Policy-makers should also promote transparency in policy-making to restore trust and reduce systemic corruption of government institutions. In fact, policy-makers should deal with excessive and/or redundant regulations and burdens in doing business that may facilitate corruption and promote transparency in every aspect of government.

As far as government size is concerned both the tax burden and government spending indicators provide statistically significant results. Therefore, high taxation and government spending are generally expected to affect FDI inflows adversely. Moreover, high taxation is associated with additional business cost, i.e. reduced profitability, and is expected to discourage

foreign investors. Empirical evidence confirms this assumption (Bellak and Leibrecht, 2009). In the same spirit, excessive government spending may reflect macroeconomic instability (Mohamed and Sidiropoulos, 2010) and require higher taxation that will eventually discourage foreign investors.

Moreover, Asian countries are at different stages of development and have some unseen factors is not quite familiar in each country about their own national policy interactions. Thus, expectations about future economic conditions of the host country play an important role in investment decisions today as FDI entails a substantial and lasting ownership stake in the host country. Therefore, countries have to create an attractive business environment to retain the existing inflows as well as to attract more investors.

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MUTUAL INFLUENCE BETWEEN LOCALITIES IN THE RED RIVER DELTA REGION IN ATTRACTING FOREIGN DIRECT INVESTMENT (FDI)

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Abstract: *Through the process of reviewing the research document, the authors found that: the research field on the interaction in FDI attraction among neighboring areas should be further studied to complete both the research contents and research methods. The authors' research both inherits and overcomes the limitations of previous studies in studying the mutual influence among localities in FDI attraction. In this study, the authors use the Durbin spatial econometric model (SDM) to study the interplay among localities in the Red River Delta in attracting Foreign Direct Investment (FDI). The research results show that: market size, labor quality, labor costs, road infrastructure, the enterprise convergence level, urbanization, quality of economic governance have has a direct effect on attracting FDI inflows to each locality. In addition, labor quality, road infrastructure, enterprise convergence level of a locality also affect neighboring localities in attracting FDI.*

Key words: *Red River Delta region, Foreign direct investment (FDI)*

1. Introduction

1.1. The necessity of the research problem

At the end of 1987, the Law on Foreign Investment in Vietnam was passed by the National Assembly, which can be considered as a major turning point in economic thought because it has created a legal foundation for foreign investment cooperation activities in Vietnam. As of December 31, 2019, Vietnam has attracted 30,936 foreign direct investment (FDI) projects with a total registered capital of 364,151.86 million USD (Department of Foreign Investment, 2019). FDI is an important resource for the socio-economic development of a country, especially in developing countries like Vietnam. Not only at the national level, but also at different localities of each country have different efforts to attract this capital. However, since the demand for capital is always greater than the supply in the FDI capital market, the advantage belongs to foreign investors and thus competition among localities, especially between localities with similar conditions is common. However, the reality shows that localities are not always competing in FDI attraction. To minimize the negative effects from competition and together make good use of this capital is the current inevitable direction.

The Red River Delta region includes 11 provinces and cities under the command of the central government: Hanoi, Vinh Phuc, Bac Ninh, Hai Phong, Hung Yen, Hai Duong, Nam Dinh, Thai Binh, Quang Ninh, Ha Nam and Ninh Binh. The Red River Delta region has an important position and

role and is the central political, economic, cultural and scientific and technological center of the country. Over the past time, the results of attracting FDI to localities in the Red River Delta have had many positive highlights. As of December 31, 2019, the Red River Delta has attracted 10,308 FDI projects, accounting for 33.32% of the total number of FDI projects of the country. Registered FDI capital reached 106,601.06 billion USD, accounting for 29.27% of the registered FDI capital of the country (Foreign Investment Department and author's calculations). This is the second largest FDI attraction region in the country, only after the Southeast region. In the region, there are many provinces and cities in the list of localities attracting the most FDI in the country such as Hanoi, Bac Ninh, Hai Phong, Hai Duong. However, not all localities in the Red River Delta region have such positive results in attracting FDI as some of the provinces mentioned above. If we compare the number of FDI projects and the registered FDI capital of the province that attracts the most and the province that attracts the least, the difference is very large. The number of FDI projects that Hanoi has attracted is 80.61 times higher than the number of FDI projects that Ninh Binh attracts (5,965 out of 74 FDI projects). The registered FDI capital that Hanoi attracts is 49.23 times higher than the registered FDI capital that Thai Binh attracts (34,778.93 million USD / 706.43 million USD). So why is there such a big difference in FDI attraction in a region? What factors influence FDI attraction in a province at the provincial level? Does the ability to attract FDI in a province depend on factors in the neighboring province? Should provinces in the region compete or support each other in attracting FDI? What is the scientific basis for this recommendation? Facing the problems above, the authors have chosen the topic: "The interaction between localities in the Red River Delta in attracting Foreign Direct Investment (FDI)" for our research.

1.2. Objectives of the study

Studying the interaction between localities in the Red River Delta region in attracting FDI. From the research results, the author gives some policy implications to increase FDI attraction to the Red River Delta region.

2. Research overview and research methods

2.1. Study overview

The previous studies when conducting the research on FDI attraction can be divided into two main research directions:

- *First research direction:* research investment environment or factors affecting FDI attraction of the country, of a region or of a province. In these studies, the authors assume that countries or localities do not affect each other in the process of attracting FDI. The studies of Asiedu (2006) and Moreira (2008) have shown that the factors affecting the attraction of Foreign Direct Investment (FDI) into Africa include: market size, political instability, natural resources and public service quality. Research by Shapiro (1988), Khachoo and Khan (2012) shows that market size, labor costs, and infrastructure have influences to attract FDI inflows. Abdul and partner (2014), Boateng and partner (2015) recommended many factors affecting FDI attraction in a specific country be different from the studies of Asiedu (2006), Moreira (2008), Shapiro (1988) and Khachoo and Khan (2012). Research by Abdul and partner (2014) shows that factors such as asset accumulation, exports, total national income have a positive effect on attracting FDI into Pakistan. Boateng and partner (2015) in the study of factors affecting FDI inflows into Norway stated that foreign direct

investment is affected by the following groups of factors: GDP, inflation, exchange rate, cash flow, unemployment rate, interest rate, trade openness.

For domestic studies, two different studies by two authors Nguyen Viet Bang and partner (2016) and Nguyen Duc Nhuan (2017) have both shown that FDI capital flows are influenced by 8 factors. These are: investment infrastructure, investment policy, quality of public services, human resources, living and working environment, competitive input costs, investment advantages, local brands. Studies such as: Pham (2002), Meyer and Nguyen (2005), Anwar and Nguyen (2010), Nguyen Minh Tien (2015) have shown that FDI inflows to localities in Vietnam are affected by key factors such as size or volume of the market, quality of labor and quality of infrastructure. The studies of Le Hoang Ba Huyen (2015), Phan Thi Quoc Huong (2015), Le Tuan Loc and Nguyen Thi Tuyet (2013) have divided the factors affecting FDI attraction into groups of factors, in which there are main groups of factors such as: groups of factors in policy frameworks, groups of economic factors, groups of factors of resources, groups of factors of infrastructure. Studies by Cao Tan Huy (2019) and Phan Huy Hoang (2019) stated that FDI inflows are influenced by factors: investment policies, quality of public services, local brands, and human resources. The studies of Dinh Phi Ho (2011), Nguyen Thi Lien Hoa and Bui Thi Bich Phuong (2014) have suggested a number of other factors that affect FDI attraction, such as: competitive costs, living environment, investment advantages, local labor advantages, local leadership, total foreign exchange reserves, trade openness of a country.

- *The second direction of research:* research on the effects of neighboring localities in FDI attraction. Coughlin and Segev (2000) are pioneers in using spatial econometrics to analyze the factors affecting FDI. The study focuses on the geographical distribution of FDI in China, with most of the capital concentrated in the area along the coast. With the data collected in the period 1990-1997 and applying the SEM model with the spatial binary matrix, the study shows that the neighboring provinces have an effect on the FDI attraction of a province. Blonigen and partner (2007) conduct a study on spatial self-regression relationships in US foreign direct investment. Blonigen and partner (2007) stated that there are many theoretical reasons why FDI in a host country may depend on FDI in neighboring countries. Research used data on FDI activity of the USA in the period 1983-1998, through the SAR model, the research team has shown that: the FDI source of the USA to a country within the Organization of Economic Cooperation and Development (OECD) will help increase the attraction of FDI to the rest of OECD countries. Garretsen and Peeters (2009) used two models, space delay model (SLM) and space error model (SEM), to study the Dutch FDI in 18 OECD countries in the period 1984-2004. Research results have found that the market size, the openness of the economy, and taxes have an impact on FDI. In addition, the authors have estimated the spatial delay model (SLM) for FDI from the Netherlands to 18 OECD countries. After controlling fixed effects, the authors found that the impact of a third country is important for Dutch FDI in countries. FDI dependence among these 18 countries differs according to the sample. Nwaogu (2012) used both SAR and SEM models in the spatial interaction analysis of FDI. The study provides empirical evidence of spatial interdependence, or the influence of third countries on US outward direct investment in Africa, Latin America and the Caribbean. Gamboa (2012) also used the spatial model to study the spatial impact of FDI from the US to Mexico. Before applying the spatial model, Gamboa (2012) used Moran's I and Geary's C tests to prove that FDI capital in Mexico is not randomly distributed, but has a certain

concentration and the author has find out that FDI inflows into Mexico States will increase when FDI to neighboring states increases.

In Vietnam, there have been some studies on the influence of space on FDI attraction. These are the research of Hoang and Gujion (2014), Esiyok and Ugur (2015); Le and Nguyen (2017). Hoang and Gujon (2014) used spatial econometric model to explore the determinants of FDI flow distribution among provinces in Vietnam in the post-Asian crisis period. According to the research team, there is a spatial interdependence in FDI attraction. Esiyok and Ugur (2015) believe that FDI inflows into Vietnam have increased significantly in recent years and have been unevenly distributed among provinces. The research results show that per capita income in a particular province, number of high school students, labor costs, trade openness and domestic investment have a direct effect on FDI in that province and have an indirect effect on FDI of neighboring provinces. These direct and indirect effects also coexist with spillovers and with spatial dependencies among provinces. Le and Nguyen (2017) use the SDM model to analyze the direct and indirect impacts of factors affecting FDI in Vietnam's provinces. According to the research results, there is evidence that FDI not only depends on the locality itself but also depends on other localities. The size of the market, the quality of the labor force, and the enterprise convergence level have an impact on FDI and are pervasive beyond local boundaries. With this research result, localities can coordinate with each other to take advantage of the attractiveness of market size and quality of labor to attract FDI for the whole region. Through the process of reviewing the research document, the authors found that: the research field on the interaction in FDI attraction among neighboring localities should be further studied to complete both the research content. research and research methods. The authors' research both inherits and overcomes limitations of previous researches in studying the mutual effects of localities in FDI attraction. In this study, the authors use the SDM model to analyze the indirect and direct impacts of factors affecting FDI of the provinces in the Red River Delta. In addition, the author added the variable quality of economic governance at the provincial level, represented by the provincial competitiveness index (PCI) into the spatial econometric model. At the same time, the author limits the scope of research space in one region, particularly the Red River Delta, to see more clearly the interaction of localities in a region in FDI attraction.

2.2. Theoretical basis and research model

a) Theoretical basis

- The theory of motives of the multinational corporation

The motives of the multinational corporations include “horizontal motives “ and “vertical motives”. “Horizontal motives” was developed by Markusen (1984). Accordingly, before investing, multinational corporations will have to consider the trade-off between manufacturing in the original country (first market) and then exporting to a second country (second market) and investment in setting up manufacturing base in this country. Unlike Markusen's “horizontal motives” (1984), “vertical moyives” applies to multinational corporations that want to invest in a second country to take advantage of low production costs here (Helpman, 1984). In cases where trade barriers of second country exports are low, multinational corporations are motivated to invest in building production facilities here to export to third countries (Ekholm and partner 2005; Helpman and

partner., 2003). In this case, the multinational corporations have “regional commercial incentives”. Countries with lower input costs and investment costs to build production and business facilities will receive FDI. Since the motive for multinational corporations is to export, the market size of other neighboring countries will have an impact on attracting FDI in a particular country.

- Theory of economic efficiency due to convergence

The interplay between FDI of neighboring provinces can also be explained by using the theory of economic efficiency due to convergence (Brueckner, 2011; Oatullivan, 2012). Businesses operating in the same area can compete with each other, but businesses still tend to stay close together to benefit from the concentration of businesses, which economists called economic convergence. When the production and business establishments are located close together, businesses in the same or different industries receive a kind of economic efficiency. The reason for this effective existence is that enterprises share the labor force, which reduces the cost of finding suitable skilled and skilled workers. Another reason for the existence of the economic efficiency of convergence is that firms cut down on the cost of transporting inputs and other intermediaries in the production process, while suppliers need only ship to the point of convergence. And the final reason is because businesses benefit from the spillover of knowledge as the social interaction of a highly qualified workforce fosters innovation and entrepreneurship in research and development (Le and Nguyen, 2017). The impact of the convergence of enterprises as above could be beyond administrative boundaries between provinces. At the same time, businesses can assess the benefit they receive by investing in a location near or in a gathering area to benefit. In other words, when a province receives foreign investment, FDI inflows to neighboring provinces may also increase because the following investment firms want to benefit from positive externalities.

b) Research model

Inheriting previous studies and practical application of factors affecting FDI attraction, the authors propose the research model as follows:

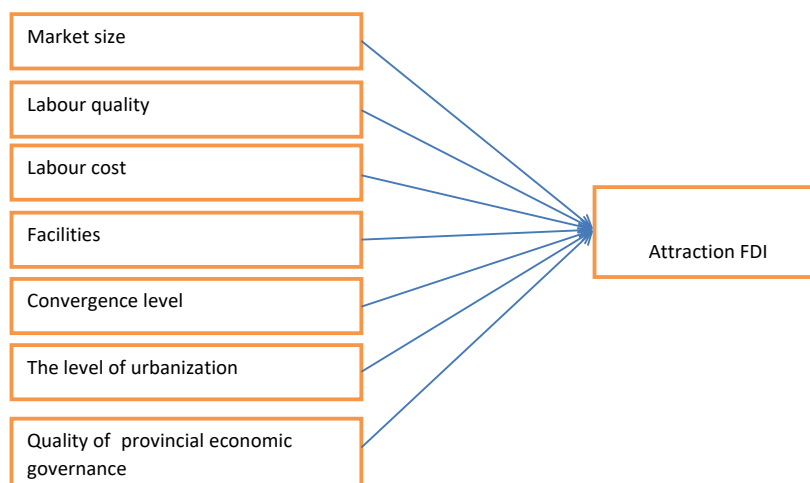


Figure 1: Research model

(Source: According to the authors' recommendation)

In this study, the constituent variables of the factors in the research model are based on the theoretical basis of the authors Le and Nguyen (2017), Hoang and Goujon (2013), Behname (2013):

- *Market size*: is measured by 01 observed variable, the total product in the area (GRDP).

- *Labor quality*: is measured by 01 observed variable, which is the rate of trained workers aged 15 and over.

- *Labor cost*: is measured by 01 observed variable, which is the average monthly income of employees aged 15 and over.

- *Infrastructure*: measured by 02 observed variables, including:

+ Infrastructure (road) is measured by the volume of goods transported by road.

+ IT infrastructure (telephone) is measured by the number of telephone subscribers per 1,000 people.

- *The level of convergence*: is measured by 02 observed variables, including:

+ The level of convergence of FDI enterprises is measured by the proportion of employees working in FDI enterprises over the total number of employees.

+ The level of convergence of private enterprises is measured by the proportion of employees working in the non-state private sector over the total number of employees.

- *Urbanization level*: is measured by 01 observed variable, which is the ratio of the urban population to the total population of the province/city.

- *The quality of the provincial economic governance level*: is measured by one observed variable, the provincial competitiveness index (PCI).

c) Research hypotheses

On the basis of the model variables and inheriting the previous studies, the author proposes 9 research hypotheses as follows:

Hypothesis H1: Market expansion will increase FDI inflows.

Hypothesis H2: Labor quality increases will increase FDI flows.

Hypothesis H3: Increase in labor costs will reduce FDI flows.

Hypothesis H4: Increase in transport infrastructure will attract FDI.

Hypothesis H5: Information technology infrastructure does not affect FDI attraction.

Hypothesis H6: The degree of labor concentration in the FDI sector will increase FDI flows.

Hypothesis H7: The degree of labor concentration in the private sector will limit FDI flows.

Hypothesis H8: Increase in urbanization will increase FDI attraction.

Hypothesis H9: Increase in quality of economic governance at the provincial level will increase FDI attraction.

2.3. Research Methods

In this study, the author uses quantitative research methods, specifically using the Durbin spatial econometric model (SDM) to study the interaction between localities in the Red River Delta in attracting Foreign Direct Investment (FDI). About data used for analysis, the author collected

data in the period 2010-2018. Data were collected from the Vietnam Chamber of Commerce and Industry (VCCI), from the General Statistics Office and Statistical Yearbooks of the Red River Delta provinces.

3. Research results and discussion

a) Moran's I test

As analyzed above, theoretically, it is entirely possible that interactions between localities in space, especially localities sharing border. If mutual interaction occurs, then it is necessary to examine and analyze the spatial interactions between localities to make an accurate, not biased estimate. One of the most popular and effective methods is Moran's I test.

Table 01: Checking Global Moran's I of FDI

Variable	Moran's coefficient I	Value p
FDI_2010	0.203	0,014
FDI_2011	0.266	0.006
FDI_2012	0.247	0.002
FDI_2013	0.397	0.000
FDI_2014	0.492	0.000
FDI_2015	0.380	0.000
FDI_2016	0.329	0.001
FDI_2017	0.261	0.020
FDI_2018	0.339	0.001

(Source: Author's calculations, 2020)

Table 01 shows that all years show a very strong spatial correlation with a significance level less than 5%. On the other hand, the test coefficients with such high significance also imply that, the normal estimation methods ignore the spatial interaction between localities will lead to biased and inaccurate estimates, thereby does not reflect exactly the nature of factors affecting FDI. Moran's coefficient calculation results show that, spatial model is suitable for analyzing factors affecting FDI.

b) Choice of spatial matrix and spatial model

The selection of spatial matrix, especially the suitable distance to calculate the interaction between FDI flows of localities, as well as independent variables based on Akaike's statistical test (Akaike Information Criterion - AIC) . This test is performed using StataTM using the Estat IC command after performing regression. In addition, the binary weight matrix is also tested based on the assumption that provinces with the same border have a very strong influence on each other's FDI flows. AIC test results for FDI flows in the Red River Delta are as follows:

Table 02: AIC results of spatial matrices

Parameters	CW_150	CW_250	CW	IDW_3	IDW_5
AIC	0.208	0.469	0.480	0.558	0.534

(Source: Authors' calculations, 2020)

The results of AIC statistical analysis in Table 02 show that the matrix with the most appropriate result is the one with a blocking coefficient of 150 km. This means that at a distance of 150km, the interaction between localities is very strong and reflected in the estimates. In addition, localities having the same administrative boundaries also have a very strong interaction with each other.

Regarding the research model, the spatial model has many different variations, but the most common are 03 models: spatial correlation model (SAR), spatial error model (SEM), and Durbin space economics model (SDM). In this study, the author uses the Durbin spatial econometric model (SDM) because the SAR model and the SEM model are a special case of SDM, namely:

- If the coefficient $\theta = 0$, the SDM model becomes the SAR model.
- If the coefficient $\theta = -\beta\lambda$, then the SDM model will become the SEM model.

Therefore, the Durbin spatial econometric model will have many advantages and is more comprehensive than the SAR and SEM model in spatial regression analysis.

c) Regression results

Table 03 shows that the attraction of foreign direct investment (FDI) of a locality depends not only on factors from the locality, but also on factors from neighboring localities, namely:

- Direct impact results

Direct Effect reflects how the internal factors of each locality mentioned in the model directly affect the FDI attraction of that locality. The regression results show that: market size, labor quality, labor costs, road infrastructure, The level of enterprise convergence, level of urbanization, quality of economic governance has a direct effect on attracting FDI inflows into that locality. Only IT infrastructure is not the real factor affecting FDI attraction to that locality. The regression results also show that the hypotheses are accepted.

Table 03: Results of the Spatial Durbin Model (SDM) regression model

Variable name	Direct Impact	Indirect Total	Total impact
Market size GRDP	1.198***	0.308	1.507***
Labour quality	0.075***	0.041**	0.116***
Labour cost	-1.984**	-0.051	-1.933***
Road infrastructure	0.954***	0.450**	1.404***
IT infrastructure	-0.183	-0.763	-0.947
FDI labor convergence	0.050***	0.055***	0.105***
Private labor convergence	-0.060***	-0.062***	-0.122***
The level of urbanization	0.043**	0.070	0.114**
Quality of provincial economic governance	0.070*	0.075	0.146***

Note: *, **, *** correspond to the statistical significance of 10%, 5% and 1%, respectively.

(Source: Authors' calculations, 2020)

- Results of indirect effects

Indirect Effect reflects the impact of these local factors on FDI inflows of neighboring localities. The existence of indirect effects can be explained through the movement of resources, the spread of knowledge, technology and the degree of integration of the overall socio-economic

impact. However, not all factors affect the FDI inflows of neighboring provinces. Research results show that: the quality of labor, road infrastructure, the degree of business convergence in a locality affects neighboring localities. The remaining factors such as market size, labor costs, information technology infrastructure, level of urbanization or the quality of economic governance have no indirect influence on neighboring localities. . This result implies that the impact of these factors mainly occurs in the local, not spread within the area.

- Total impact results

Total Effect is built on the combined effects of direct and indirect effects. The regression results show that factors such as the quality of the labor force, the road infrastructure, and the degree of business convergence have a great influence on the FDI attraction of the entire Red River Delta region. Meanwhile, factors such as market size, labor costs, the degree of urbanization or the quality of local economic governance only affect individual local FDI flows. On the other hand, IT infrastructure has no effect on attracting FDI. The factor of labor cost and the private labor convergence level has an “opposite” effect, negatively affecting the FDI attraction.

4. Conclusion and policy implications

This study provides important empirical evidence on the need to study the inter-local influence in attracting foreign direct investment (FDI) inflows. The research results show that the attraction of foreign direct investment (FDI) of a locality, not only depends on factors from that locality, but also depends on factors from the neighboring locality. Namely:

- Labor quality: The regression results show that the quality of the local labor affects the neighboring localities. The improvement of the labor quality will attract the overall region’s FDI. There are two reasons for this phenomenon. The first is the spillover effect of labor quality. This spread spans the whole region, not just one or two specific localities. Second, this effect is also due to the free movement of labor between localities, which occurs frequently, especially in the Red River Delta region.

- Road infrastructure has a positive influence on neighboring localities. The characteristics of Logistics, forwarding and transportation activities are in need of transportation infrastructure connection, especially roads between localities. In fact, localities with road interchange locations with connected roads often attract FDI more strongly than the rest of the provinces. In other words, the development of transport infrastructure brings general development to the whole region and is one of the important strategies in socio-economic development.

- The level of FDI labor convergence: The characteristic of FDI enterprises is the tendency of concentration and convergence. That is also the reason why large industrial zones are always very strong magnets to attract investment from foreign enterprises. In fact, FDI enterprises do not really care about administrative boundaries, they care about favorable conditions for production and business. Due to the highly mobile mobility of the workforce, the FDI labor convergence level positively affects not only the locality, but also the region. This is also one of the important suggestions for the regional development strategy, whereby human resource training needs the coordination not only of one, but of many localities.

- *The level of private labor convergence*: the strong development of domestic private enterprises also puts great pressure on competition for foreign enterprises not only in the locality but also in neighboring localities due to high mobility of workforce. The development of private enterprises not only affects the local market, but also the regional market, especially when Logistics services are increasingly developing and improving.

With the research results above, when considering the construction of policies to attract FDI, policy makers, in addition to considering the internal factors of the locality, need to consider also the factors of internal content of the neighboring localities to build strategies reasonably. Provinces can coordinate with each other to take advantage of the attractiveness of the quality of labor, road infrastructure, and the level of FDI business convergence in order to attract FDI to the whole region. Central and local governments can turn the trend of competition into cooperation to promote FDI attraction together. This can be achieved through the focus on human resource development, road infrastructure development, and facilitating the development of FDI enterprises. These are issues that need to be raised in the regional cooperation mechanism between localities in the context that Vietnam does not have a regional government to implement the planning and policies to attract investment in the region.

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GREEN ECONOMY WITH THE CHALLENGE AND OPPORTUNITY FOR THE SUSTAINABLE DEVELOPMENT IN VIETNAM

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Abstract: *The intergration of global economy requires the increase in role of sustainable development. The growth model innovation and economic restruction for the implementation of nation's sustainable development has been objectively an indispensable responsibility. The purposes of green economy include the economic with ensuring social equity and progress, protecting the environment and promoting competitive advantage in international integration. This study will address the position of green economy development in the growth model, the ability to develop and the choice of green economic development direction in transforming the growth model of Vietnam.*

Keywords: *Strategy, economy - society, green economy*

The comprehension of green economy

Green economy has not only been the integration of environmental issue in economic development, but also understood more deeply, referring to balanced and harmonious development among objectives. In modern society, green economy has been considered as a new model of development with the supported matter and followed by many countries. According to the United Nations Environment Program (UNEP), a green economy refers to an economy with the aim of promoting people's lives and improving social justice and minimizing environmental risks and ecological deficiencies

In the draft Vietnam Green Economic Strategy for the period of 2011-2020 and the vision to 2050 of the Ministry of Planning and Investment, the strategic view was proposed. Green economy in Vietnam is a method to accelerate the process. Restructuring the economy towards the efficient use of natural resources, reducing greenhouse gas emissions through research and application of modern technology, developing infrastructure systems to improve efficiency. The economy, responding to climate change, contributes to poverty reduction, and creates incentives to sustain economic growth. In Vietnam, a green economy strategy is considered a specific step in the sustainable development strategy, which is the main content of sustainable development.

The concepts of different organizations have different wording but they all bring together three main points:

(i) Green economy is an environment-friendly economy, reducing greenhouse gas emissions to minimize climate change.

(ii) Green economy is an economy that grows in depth, consumes less fuel, enhances ecological industries, and renews technology.

(iii) Green economy is a sustainable growth economy, poverty reduction and equitable development.

The requirement for the transformation towards green economy

Firstly, the quality of Vietnam economic growth has been still low. Vietnam economic growth has been mainly based on low-level labor, capital and resources. Apparently, in the process of economic development, these resources have been fully exploited and in danger of being exhausted. The Vietnam economy has begun to slow down. This has led to efforts to promote high growth in line with the socio-economic development strategy. In order to pursue the purpose of promotion with high economic growth, Vietnam has invested a lot of capital into exploiting the country's limited resources without paying attention to technology development, which has made investment efficiency low. It is the low investment efficiency that leads to macroeconomic instability, causing a deficit of the State Budget.

Second, the infrastructure system has been underdeveloped. State budget expenditure for transport works accounts for a large proportion but is still inefficiently spread. This makes the infrastructure afraid of Vietnam underdeveloped. Ineffective traffic works make roads in urban areas often clogged. Along with the continuous increase in transport means, the air in urban areas is heavily polluted.

Thirdly, the labor skills have not been shown the sign of being improved significantly. Vietnamese workers have a low standard of trained labor, which leads to poor skills of workers, resulting in low labor productivity. Employers pursue profitability and forget about new labor training towards sustainable development. Employers do not focus on labor training to access modern technology so the quality of labor is low.

The significant role of green economy

During the recent development reform period, Vietnam has sought all ways to promote economic growth, but has not really focused on sustainable development as well as green development or at times, places that Vietnam has mentioned. The environmental protection factor in economic growth is still not well implemented.

In the current global context, the scarce competition for scarce resources, the threat of climate change have peaked, and the process of sustainable development is a mandatory requirement of nations. Vietnam has a close relationship with the world system, so it is impossible not to participate in this process. The need to renovate the economic growth model towards development in depth, sustainability, saving resources and protecting the environment is set as a leading task in the new development stage. Based on the concept of green economy analyzed above, it is clear that this is an important content of sustainable development. All goals set forth in Vietnam's Socio-Economic Development Strategy in the coming period are closely related to the content of green economy.

Vietnam potential ability for the development of green economy

Vietnam has been heading towards a green economy in the direction of restructuring the economy. This is clearly reflected in the political determination of the Party and the State of

Vietnam when the current draft of Vietnam's green economy strategy is being widely commented before issuing. Over nearly 30 years of renovation, Vietnam has gained many important socio-economic achievements: the economy has grown rapidly, infrastructure has been developed, income per capita has improved rapidly, etc. Vietnam technology is improving rapidly thanks to its advantages. Vietnam is also integrating deeply into the international community, creating many opportunities for domestic economic development.

Vietnam has been also the country attracting large foreign investment. Many FDI enterprises have brought modern technology into Vietnam, including some of the world famous high-tech corporations such as Intel, Samsung, Canon, etc. If Vietnam provides appropriate policies, it will make corporations This high technology investment and contribute to improving the country's technological capacity, connected to the global production network. This is essential for developing a green economy. Vietnam human capital is quite abundant, currently there are about 90 million people in which the labor force participation rate is high, the literacy rate is high, hard-working, and quick to capture, etc. If they are well trained it will be a driving force for the green economy of the country, the ability of Vietnam to succeed more easily.

Opportunity for the development of green economy

International trends have been reaching the development of green economy. In the period of global financial crisis in 2008, green economy had been the top concern of all countries as a driving force for promoting and restoring global economy and instrument to sustainable development. This topic has been repeated many times in regional and international forums and is being seriously considered and applied by countries. In fact, the green economy has shown its role in helping countries to achieve their goals of economic growth, social development and especially environmental protection, adapting to the conditions of variables. climate change. Many countries use this model such as Germany, France, South Korea, China, the United States, etc., and have obtained apparent results in economic growth, environmental protection, reducing emissions.

In Asia, the East Asia Climate Forum was held in Seoul on May 29, 2009, countries in the region exchanged views on the establishment of green economic strategies of East Asia, creating opportunity for Asian countries to share relevant experiences and policies. Seoul Initiative for East Asia Green Economy was adopted within the framework of the forum. High-ranking leaders of East Asian countries also discussed ways to enhance green cooperation in establishing food and energy stability - elements necessary for sustainable development of countries. in the region at the ASEAN-Korea Summit (June 1-2, 2009, Jeju, South Korea) held shortly after the forum, the leaders expressed high consensus on economic policy. green economy that the Korean Government made. As for Southeast Asian countries, ASEAN also issued a joint statement (July 2010) emphasized: partners and international organizations also play an important role in supporting ASEAN closer to the development model. "Carbon reduction - Green economy". ASEAN will tighten up energy cooperation with East Asia, including paying much attention to the Clean Development Mechanism (CDM), the development of civil nuclear power, etc. to limit the negative impacts in the country. climate change

Then, in October 2010, at the Asia - Europe Summit (ASEM) held in Belgium, the Prime Minister of Vietnam officially proposed the Asia - Europe cooperation initiative on green economy, which

received the support of many ASEM member organizations and countries. Many ASEM members have been at the forefront of greening the economy, notably the strategies of the European Union, China, Japan, South Korea, Vietnam and so on. Green is a national development orientation in the coming decades, especially before the profound consequences of the global economic and financial crisis. In early October 2011, the Asia-Europe Meeting Green Growth Forum, with the theme “Working towards green economies,” was held in Vietnam to search for mechanisms of cooperation and sharing of green development experiences among countries.

At the Asia-Pacific Economic Cooperation Forum (APEC) closing ceremony on November 13, 2011 in Hawaii (USA), APEC leaders also adopted the Honolulu Declaration, in which, APEC identify the need to address the region’s environmental and economic challenges by addressing the green, low carbon economy, improving energy security and creating new sources of economic and employment growth. APEC agreed in 2012, will develop the list of environmental goods (green goods) and reduce tariffs on these goods by the end of 2015. APEC will remove non-tariff barriers including localization of environmental goods and services. To promote green economic goals, APEC will implement measures such as reducing energy intensity of APEC by 45% by 2035 compared to 2005, combining development strategies for low carbon emissions into economic growth plan through low carbon sample City project etc.

At the global level, the first Global Green Growth Forum (3GF) took place in Copenhagen - Denmark on October 11-12, 2011. This is an event organized by the Danish Government in collaboration with the governments of Korea and Mexico. 3GF is organized with the main objective of promoting green economy through public-private partnership between governments and the business sector.

The challenge for the development of green economy

There have been still many attitudes in the world against green economy. They argue that green economy only costs material wealth and does not produce adequate benefits. There are even opinions that a green economy is a luxury only rich countries can afford and even this is the conspiracy of developed countries to restrain developing countries.

The challenge of ineffective international cooperation: to reduce greenhouse gas emissions and protect the environment is the job of the whole world, not just any other country. The effects of environmental degradation have affected many countries in the region and the world. Therefore, to address environmental issues - these global challenges require countries to act. Meanwhile, not all countries have goodwill and fulfill their commitments to partners. Therefore, it can disrupt the goal of anti-climate change and green economy in Vietnam.

To develop a green economy requires a strong improvement in technological capacity. While the level of technology is still limited, Vietnam is still at risk of receiving a wave of outdated technology transfer from more developed countries to less developed countries. Recently China has focused on improving the quality of FDI projects in the country. They have restricted or banned heavy industrial projects that consume fuel and pollute the environment, and it is likely that these projects will move to less developed countries including Vietnam. According to the Chinese government’s notice in October 2011, the country will eliminate 2,255 outdated and low-performing businesses across the country. So Vietnamese businesses need to avoid equipment from these businesses.

On the other hand, labor costs are starting to rise in China now. Many businesses in coastal areas have been closed, partly due to the shrinking market, but mainly due to high labor costs and government anti-pollution policies that increase production costs. Therefore, investors will look to the Vietnamese market. Many enterprises are investing in labor-intensive or heavily polluting industries from China, it is rarely high technology but rather an outdated transfer of technology. This is something Vietnam should be very cautious of.

- Challenges in resolving conflicts between industrialization and reducing greenhouse gas emissions. Vietnam is still a low-income country, with a low level of development. Can Vietnam abandon the high growth target in the short term to achieve the goal of greening?

- Challenges for Vietnam's export products when countries impose higher environmental standards. This is a problem that Vietnam has been facing. Along with Vietnam, many countries have moved quickly to green economy and the requirements for foreign goods imported are also higher. It is more difficult for Vietnamese businesses to meet their requirements because of the limited production background and conditions in Vietnam.

Choosing to develop green economy meets requirements of renewing growth model

By assessing the opportunities and challenges in developing green economy, it is clear that Vietnam still has many challenges that must be overcome. The transition to a green economy is unlikely to happen quickly and Vietnam has been still far from the "true green economy" However, it must be affirmed that the green economy orientation towards Vietnam is implemented as soon as possible. Because it is not only related to greening of production but also affecting people's consciousness, greening of lifestyle and consumption. However, the implementation of green economy must be suitable for each stage of development of the country. Promotion of green economy requires large costs and trade off goals with brown growth. When the economy has a solid foundation, it can accelerate the shift to a green economy (EU countries, the US, South Korea, etc. can do this) but when the economy is still limited like Vietnam today, this needs careful review.

To transform the brown economy to a green one, we all have to rearrange the economy. This process will either slow down the growth rate or short-term growth itself and it will affect the employment and income of workers. For Vietnam, a low-middle income country - the pressure to accelerate growth to escape poverty and catch up with countries is very high. Therefore, there should be a harmonious shift, otherwise Vietnam will encounter social problems caused by this transition. Once Vietnam has reached a higher level of development (after basically becoming an industrialized country by 2020), the transition to a green economy may be accelerated.

Clearly, green economy is an important content to be directed in the process of implementing the renovation of growth model and restructuring Vietnam's economy today. The experience of developing countries shows that the transition to a green economy offers great potential for sustainable development and poverty reduction. Changing the growth model towards green economy is an affirmation of Vietnam's socio-economic strategy implementation period 2011-2020. Of course, this process requires real innovation in developmental thinking and drastic action.

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LEAN MANAGEMENT - NEW DIRECTION FOR VIETNAMESE PRIVATE ENTERPRISES

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Abstracts: *Private enterprise is a type of individual economy, formed since the Party and the State of Vietnam implemented economic renovation. Despite being considered an important developing motivation of the economy, the private sector contributes less than 10% of GDP after over 30 years of renovation. In addition, with limited competitiveness, Vietnamese private enterprises are easy to “collapse” during the shocks of the business environment. To develop production capacity and improve the trading efficiency of private enterprises, increase the ability to cope with negative impacts, it is necessary to have specific solutions that are suitable to the characteristics and situation of the Vietnamese market. This article will discuss lean management (Lean management will be shortened to LEAN) that has been applied effectively in many countries; analyze the current situation of Vietnamese private enterprises to see the constraints in applying the streamlined governance model; from which, appropriate solutions will be suggested to apply this model in Vietnamese private enterprises. The method used in the article is the method of describing, analyzing and synthesizing the data collected from the secondary source.*

Keywords: *Lean, private enterprises, 5S, Kaizen, visual management.*

1. Introduction

In the Vietnamese business system, private enterprise has played an important role in economic development. Currently, Vietnamese private enterprises are thriving in both quantity and quality, making an important contribution to economic growth. According to the Vietnam White Paper in 2019, domestic private enterprises generate about 42% of GDP, contributing about 30% of the State budget revenue.

However, in the development process, Vietnamese private enterprises still have many limitations, especially limited in capital and governance skills. In the context of the industrial revolution 4.0 and the Covid-19 epidemic, strategic competition among major countries is increasingly fierce ... the development of private enterprises in Vietnam raises requirements for effective management of products business, and at the same time have long-term strategies to ensure stable and sustainable development.

In the world, there are many advanced management methods to help businesses improve production efficiency, product quality, and sustainable development. In particular, LEAN is a useful method and is becoming more and more popular in countries such as the US, Western Europe, Japan, Korea, Singapore ... LEAN helps businesses eliminate waste and take advantage

of maximizing the effective use of resources to create differentiation for products and services to maximize customer satisfaction, thereby improving competitiveness and increase profits. LEAN will open a new direction in the thinking of managing and operating Vietnamese enterprises. With the characteristics of Vietnam's business environment, LEAN will provide useful tools to help private businesses make the most effective use of available resources without increasing capital costs or expenses another invisible. Through the reduction of existing waste, production capacity will be gradually enhanced over time, creating sustainable development for each business.

This study aims to point out the value of LEAN for Vietnamese private enterprises and propose solutions to apply this management method in the upcoming time. The method used in the article is the method of describing, analyzing and synthesizing the data collected from the secondary source.

2. Literature review

The concept of LEAN has been around for 100 years, but only since Toyota started adopting it and turned it into a magic tool that brought this automaker to the top of the world, confirms with its style by Toyota Product System - TPS (1960), this production method is more interested. In the world, there has been a lot of researches on LEAN as well as its applications to businesses.

According to Taiichi Ohno (1988), TPS started from the long-term business philosophy foundation, intuitive management, process standardization, and production balance. Fuji Cho, a pupil of Taiichi Ohno built a quality house image to perform TPS. The two strong pillars of this house are JIT - Just in time (produce just when needed, do not overproduce), and Jidoka - self-proofing (never let waste can go to the next stage). The interior and center of the house are human, continuously improving and actively reducing waste. The roof is a combination of quality, cost, lead time, safety, and work ethic.

In 1990, the term LEAN was proposed by James Womack, Daniel Jones, and Daniel Roos. According to the author's group, LEAN is a system of methods applied in enterprises to eliminate waste and reduce production time, improve productivity and profitability. LEAN's benefits are proven in both research and practice. The authors affirm that the LEAN system will develop not only in manufacturing businesses but also in service businesses from healthcare to distribution and retail services.

Liker, J. (1997) in her research focused on reducing production time through waste reduction and eliminating jobs that do not create added value. Liker said that LEAN helps to reduce the time from when customers request to delivery, thereby increasing profitability, quality, and customer satisfaction, improving information processing time and promotion encourage employees to work.

Michael A. Lewis (2000) analyzed lean production details, 6 Sigma and TQM, and studied in-depth three specific cases to conclude that, LEAN contributes to enhanced sustainable competitive advantage firm for business. Besides, the author also gives some suggestions for later studies.

Yang Pingyu, Yuyu (2010) by surveying in Wenzhou city, the authors analyze the difficulties that enterprises face when applying lean production, thereby giving some solutions focusing on 4 points: management concern, communication skills, organizing training, and building a performance evaluation system.

Phan Chi Anh, Yoshiki Matsui (2010) analyzed the contribution of quality control and on-time production to factory performance and flexibility through surveying 163 factories in 5 countries. Based on the analysis of the data, the research team found that the high performing factories are all concentrated factories using two quality management tools (QM) and JIT. Besides, the authors also pointed out the benefit of applying the two tools in combination rather than applying one tool separately. From there, the author suggested to businesses, should find the linkage and synergy of the application of the above tools to achieve a highly competitive position in the market.

Nitin Upadhye, S. G. Deshmukh, Suresh Garg (2010) pointed out that LEAN is a method that helps businesses identify problems in the business. At the same time, choosing the right tools for the business is a key element in the successful adoption of lean production, leadership commitment, and all-employee engagement are fundamental to business. The authors also stated that the application of LEAN's tools are important in all groups of businesses. By studying the current value chain, identifying the types of waste, and applying the right tools for improvement, businesses will improve their competitiveness. After studying a case in India, the authors proposed a lean production application model that helps business managers to understand and apply properly.

Anad Gururthy & Rambabu Kodali (2011) using the document review method has found that most of the research focuses on analyzing tools and methods of LEAN such as Kanban, comparing pull and push production systems ... Other LEAN methods such as cycle reduction, process improvement... have yet to be focused. Therefore, in this study, the authors use a simulation method to represent the value chain of a case study, thereby highlighting the benefits of applying production tools and LEAN. The study confirms that, in this enterprise, only a few tools and methods such as product flow balance, process improvement, 5S ... are applied and these tools and methods have positive effects production and business efficiency of the business. If enterprises can apply the remaining tools appropriately, they can improve their competitiveness and grow stronger.

Nguyen Dang Minh (2012) in his research showed that TPM - Total Productive Maintenance (Total Productive Maintenance) has been widely applied in Japanese enterprises to improve the efficiency and usability of equipment and tools, thereby reducing production costs and equipment investment costs. At the same time, TPM contributes to environmental protection by reducing energy and water consumption and limiting emissions. In particular, the author affirms that when applying the combination of TPM with 5S, JIT, TQM, not only manufacturing but also service, maintenance, and construction businesses will operate more efficiently.

S. Vinodh, K.R. Shivraman and S. Viswesh (2012) choosing the appropriate concept of LEAN is a decision based on many criteria. The AHP analysis was used by the authors as a tool to solve the above problem. Based on the results of the AHP analysis, the study has given LEAN concept that is most suitable for businesses to apply. The above LEAN concept and application model has been verified in a manufacturing enterprise case.

In Vietnam, the research works related to this topic can be mentioned as Toon Van Dael (2012) with theoretical and practical research, the author has systematic many theories of lean governance. Based on the demand at Ariston Vietnam, the author has done the research and proposed LEAN application and deployment plan at the factory. Dinh Trong The (2012) analyzes the current state of

LEAN in a manufacturing enterprise, analyzes types of waste, and suggests suitable tools to reduce waste. Besides, there are works of authors such as Nguyen Thi Duc Nguyen and Bui Nguyen Hung (2010), Nguyen Xuan Huy (2015) also research on LEAN in an enterprise.

Nguyen Dang Minh et al (2013) pointed out the current situation of applying 5S, a tool in LEAN, in small and medium enterprises in Vietnam through a survey of 52 enterprises. At the same time, by analyzing the collected data, the research team also showed that 5S has a positive impact on production and business efficiency through 4 parameters: product quality, production costs, time-delivery and market share. Finally, the authors used the WHYS 5 analysis method to find out the root causes of the problems that existed in the current situation of 5S application in 52 enterprises and made some recommendations for the development of the model. 5S in Vietnam.

Thus, LEAN creates great value for businesses, helping to cut costs by identifying waste, and giving tools to cut waste. With limited resources, application in private enterprises in Vietnam is the right direction.

The qualitative research methodology was used to determine and generally evaluate the current status of private enterprise business results, thereby seeing the necessity of applying LEAN in executive production in private Vietnamese businesses. The use of the methodology was to assist the author in examining the issues surrounding lean governance, business results of current Vietnamese private enterprises through integrated techniques analysis then gave specific, in-depth statements and built solutions to the more appropriate application of LEAN in business operations.

There have been many concepts relating to LEAN, for instance, lean manufacturing, lean thinking, lean management according to different approaches. In the article “Lean management in small and medium enterprises in Vietnam, Current situation - Solutions” of Nguyen Dang Minh, “Lean management is the management mindset that creates profits (added value) for businesses by using human intelligence to minimize waste.”

LEAN is a management mindset that comes from a lean manufacturing model - a method applied by many large manufacturing enterprises in the world.

LEAN provides tools and methods (5S, Kaizen, Visual management ...) to help businesses be aware of the unnecessarys that exist in the process of production and business activities, thereby moving toward the ways to eliminate these to improve its operational efficiency. This is a model that has been successfully applied by many famous enterprises in the world such as Honda, Toyota, Nissan, GM, Ford, etc., as well as retailers like Seven Eleven, Family Mart, etc., will help businesses identify and eliminate the unnecessarys effectively in both production and business. By taking people as the center of innovation, creating a work environment with a good mentality, and high efficiency, this management system will help businesses create optimal use of resources including people, materials, time, and capital, thereby improving the efficiency of production, retails as well as profitability for businesses to gain sustainable development. LEAN through continuously improving method aims to serve the exact requirement of customers while increasing productivity and reducing production costs to understand what customers want, feedbacks collecting is the starting point of lean manufacturing. This method shapes the values that customers desire to receive by analyzing products and optimizing production processes from the perspective of customers.

The objective of LEAN:

The core objective of LEAN is to minimize the wastes generated during the production and business processes of the business. Therefore, the application of LEAN helps businesses effectively use available resources, improve product quality, and shorten production and business cycle time to meet customer needs. Besides, LEAN also promotes a creative culture for businesses, enhances professionalism in the working environment for employees, increases customer satisfaction and loyalty.

The benefits of lean governance:

The core goal of LEAN is to minimize the types of waste generated in the production and business processes of the business. Therefore, the application of LEAN helps businesses to effectively use available resources, increase product quality and shorten production and business time to meet customers' needs. In addition, LEAN also promotes a creative culture for the company, enhances professionalism in the working environment for employees, and increases customer satisfaction and loyalty.

The specific benefits of LEAN can be listed as follows:

LEAN helps improve productivity and the quality of products and services. By reducing waste and waste, businesses can improve the efficiency of input resources, reduce redundant operations during work/operation, and reduce movement.

LEAN helps shorten the time. The shortening of time here is shown in shortening the production and service delivery cycle (cycle time), shortening the time to prepare for production (set-up time), and the time to change production to produce different products (change - over time).

LEAN minimizes tangible and intangible waste caused by over-stocking. One of the tools of LEAN is JIT, which helps to reduce over-inventory, including work in process inventory.

LEAN helps to improve the use of equipment and premises. With useful tools such as TPM (Total Productive Maintenance) and Cell Manufacturing layout, businesses will eliminate cases of congestion and maximize them. Through production efficiency on existing equipment, while reducing downtime, equipment usage and production site will be more efficient.

LEAN helps businesses increase responsiveness flexibly while minimizing pressure on input resources against diverse market requirements; from there, the ability to deliver on-time is also guaranteed. In addition, if applying LEAN, businesses can produce many different types of products more flexibly with the lowest cost and conversion time.

Because of these benefits, corporations have successfully applied LEAN and brought good results in businesses such as Toyota, Walmart, IBM, Lenovo ... According to statistics of these companies, LEAN has helped reduce defects by 20%, delivery time by more than 75%, productivity increases from 15-35%/year, inventory decreases by more than 75%/year, especially on-time delivery to customers up to 99%.

LEAN's tools:

5S:

5S was initiated in the manufacturing sector and expanded to other industrial sectors as well as the service sector in Japan in the 1960s. The Japanese have been using 5S as the criteria in Lean manufacturing.

Seiri (Sort / Segregate) - Screening: to retain only what is needed, identify the factors that create the value - be useful, remove the unnecessary elements to create more space for manufacturing, and improving production processes.

Seiton (Simplify / Straighten) - Arrange: to organize and use analytical tools and methods to improve production cycles and reduce waste.

Seiso (Shine / Sweep) - Clean: to clean daily, keep the workplace clean, tidy, and orderly.

Shitsuke (Sustain/ Self - discipline) - (Mindset) readiness: this is the most important activity, it dominates the other 4S directions. The willingness from changing thinking and awareness about 4S, thinking about eliminating waste through the application of 4S is necessary and useful for businesses. Besides, the spirit of training also creates habits and disciplines for employees when performing S4, the main goal of S5 is to train people to follow good working habits, strictly internal supervision and regulations in the workplace and towards improving 5S implementation in the enterprise, thereby improving the efficiency of production and business.

Kaizen - Continuous improvement:

Kaizen is a management tool applied to promote continuous improvement with the participation of people to constantly improve the working environment, the individual, and the family. In Japanese, Kaizen is compounded from “Kai” - “change” or “get it right” and “zen” - “good”, meaning continuous improvement. Kaizen is the accumulation of small improvements into big results, focusing on problem identification, problem-solving, and standard change to ensure the problem is solved from the root. Therefore, Kaizen is more than a process of continuous improvement, with the belief that human creativity is infinite. Thereby, all members from leaders to workers are encouraged to make suggestions for improvement, though small, from daily tasks.

When being applied in the workplace, Kaizen requires constant commitment and effort from everyone, both the management departments and the workers. Kaizen is small improvements which are made step by step over a long period. Japanese companies often focus on Kaizen or employee participation programs. Kaizen costs less but brings high efficiency in improving the quality of work, as well as the quality of products and services, and reducing operating costs.

Mierukia - Visual management:

Visual management is the visual representation of tables that is located in the production line and where needed. Charts and pictures are the information used at the workplace that can tell us immediately how to conduct business or whether the job has deviated from the standard.

Visual management helps the factory reduce research time, eliminate job depression, increase safety, improve information exchange, and increase job satisfaction.

Visual management helps both workers and managers to fully monitor the production process and progress to properly implement all stages through:

Visual display table: efficiency measurement charts, documents, process procedures.

Visual control panels: quality tracking information sheet, production progress information.

Image instructions: drawn lines or colors show the process, material flow ...

In addition to the above three tools, LEAN can also use other tools such as Jidoka, Single Product Line, Maintaining Overall Productivity (TPM), Total Quality Management (TQM), Poka Yoda, JenJidoka ... Ways to use these tools depends on the purpose, resources, and management views of the business in each period.

3. Overview of Vietnamese private enterprises

In Vietnam, private enterprises are a form of private-sector enterprises. According to Article 183 of the Enterprise Law 2014: “A private enterprise is an enterprise owned by an individual and is solely responsible for his / her assets for all activities of the enterprise”.

Resolution No. 10 of the Central (June 3, 2017), affirms that the private economy (private sector) is an important driving force for the country’s economic development. The private sector is developed in all fields that are not prohibited by law. Encourage the private sector to contribute capital, buy shares of state-owned enterprises upon equitization or divestment from the State. 80% of annual GDP is contributed by private enterprises, many private enterprises have invested in many fields, such as real estate, banking, aviation, seaports, information technology, manufacturing, the export of consumer goods, including automobiles and motorbikes; trading, education... It can be stated that private enterprises have invested in almost all sectors of the country’s economy, except for a few areas of security, national defense, or social security.

However, according to a report of the Ministry of Planning and Investment in the Prime Minister’s Meeting with businesses in 2019, Vietnam has approximately 17,000 large-scale and 21,000 medium-sized private enterprises. This figure is too modest compared to the total number of businesses of 750,000 and the economy today. Notably, despite being ranked as a large enterprise, the average size is still very small compared to other countries in the region. Large private enterprises in Vietnam only had an average capitalization of 186 million USD in 2018, while that of the Philippines was 1.2 billion USD, Singapore with 1.07 billion USD, Thailand with USD 835 million, Indonesia with USD 809 million, and Malaysia with USD 553 million.

According to the Ministry of Planning and Investment, over the past few years, the number of private enterprises from small to medium scale and from medium to large scale in Vietnam has been very low. Meanwhile, according to the data of the Vietnam Chamber of Commerce and Industry (VCCI), there has been a fairly strong decline of medium and large-sized enterprises in the last 5 years. This has made Vietnam become an economy of small and micro enterprises, with a rate of approximately 96%. In particular, micro businesses account for the majority, up to nearly 67%.

Recently, the private enterprises of Vietnam, despite the increase in the number of establishments, have significantly reduced the size of capital and average labor. A typical private enterprise currently has less than 20 employees and VND 1.2 billion (USD 54,000) of fixed capital.

Not only small in scale, but private enterprises in Vietnam are also limited in scientific and technological capacity when most machines and equipment are outdated. Statistics show that

more than 50% of private enterprises borrow money from banks, mainly to cover their operations, and invest very little in innovation, equipment, machinery or technology. Investment capital for technological innovation is very low, only about 0.2-0.3% of total revenue.

At the same time, the human resources of private enterprises are very weak. According to a survey conducted by VCCI, up to 55.63% of small and medium-sized business owners currently have intermediate or lower education levels, of which 43.3% of business owners have education levels from primary to secondary. Therefore, their abilities to seize opportunities, reforms are not high and their visions for the development of enterprises. As for the labor force, up to 75% has not received any technical or professional training yet.

From 2010 to 2018, the proportion of added value in the GDP of the Private enterprise sector has increased but still does not exceed 10% of GDP (9.1%). This shows that the private sector has not had a strong transformation.

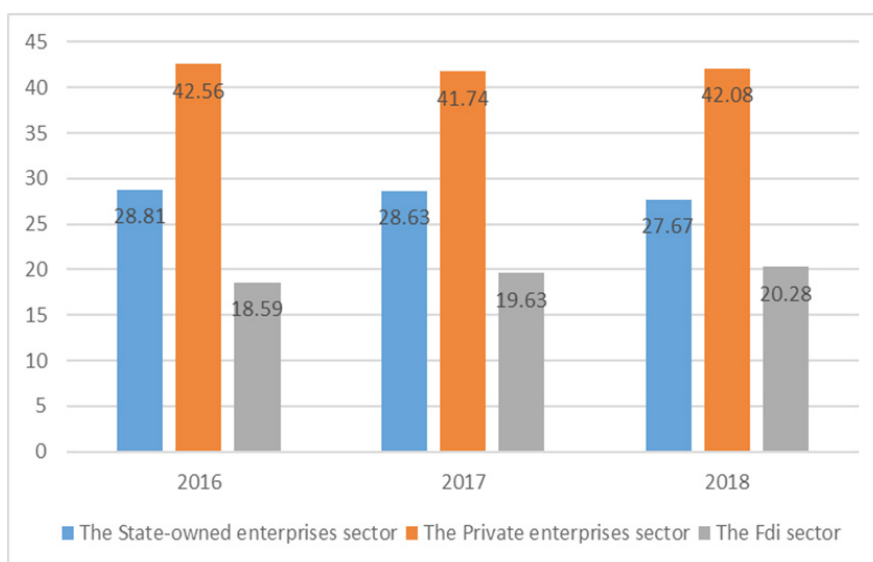


Figure 1. Contribution to Vietnam's GDP of various types of enterprises during 2016 - 2018

Source: Vietnam Business White Paper 2020.

Private enterprises account for 97% of the total number of operating businesses with business results. However, according to the General Statistics Office, from 2010 to 2018, the proportion of added value in the GDP of the private sector has increased but still does not exceed 10% (9.1%). This shows that the private sector has not had a strong transformation.

While the proportion of the Private Enterprise sector in GDP increased by only 2.2 percentage points, the proportion of the FDI sector accounted for 5.13 percentage points from 2010-2018. This is partly because of the number of operating private enterprises, less than 80% have production and business results (77% in 2017, 78% in 2018).

In terms of manufacturing businesses with profits comparing to the total number of registered businesses, this rate is considerably low and tends to be lower; Notably, the non-state sector was the lowest among the three types of state-owned, non-state and FDI enterprises.

Table 1. Percentage of profitable manufacturing enterprises by type of enterprise

	%		
	<i>Period average 2011 - 2015</i>	<i>2016</i>	<i>2017</i>
Total	46.5	47.3	45.6
Classified by type of businesses			
The State – owned enterprise sector	80.2	83.5	81.1
- In which: the enterprise sector is 100% state-owned	80.6	83.4	78.7
The non-state enterprise sector	46.1	47.0	45.2
The FDI sector	51.3	51.4	51.0

Source: Vietnam Business White Paper 2020.

In terms of the profit rate, according to the General Statistics Office, the average rate of return on capital of the whole country was very low, specifically from 2011 to 2015 was 2.43 times; in 2016 it was 2.53 times and 2017 was 2.66 times. In particular, the lowest in the non-state sector (respectively 1.08 times in the period of 2011-2015; 1.25 times in 2016; 1.67 times in 2017), and although there is an increasing trend, it has not been achieved 2% yet. The rate of return on capital is much lower than the deposit interest rate, while in 2017, for every VND 100 of capital, 72% were liabilities, while state-owned enterprises had VND 100 to 80% of liabilities. This situation if prolonged, the risk of default is not nonexistent.

Table 2. The ratio of profit before tax to net revenue of the enterprise

	<i>Period average 2011 - 2015</i>	<i>2016</i>	<i>2017</i>
Total	3.7	4.1	4.2
The State – owned enterprise sector	6.0	6.9	6.4
- In which: the enterprise sector is 100% state-owned	5.6	6.3	6.1
The non-state enterprise sector	1.5	1.9	2.5
The FDI sector	6.1	6.8	6.6

Source: Vietnam Business White Paper 2020.

Although the ratio of profit before tax and added value of the non-state enterprise sector tends to increase but is always the lowest in the types of ownership, while the FDI sector has the ratio of return on capital to the business. Net revenue and the proportion of value-added on the highest net revenue.

Therefore, private enterprises have low competitiveness and weak linkage. Currently, only 15% of private enterprises sell goods and services to foreign businesses in Vietnam, 8.4% export products directly, and 7.4% indirect export through sales to a third party.

Shadow costs of production (costs of production - costs arising from errors in the system in operations from the input, production to output) are always costly in any manufacturing-business

industry including production costs. In European countries, hidden costs usually account for 20-25% of total revenue, in the US it is between 25-30% of total revenue.

In Vietnam, hidden costs and wasted business operations can account for up to 40% of total revenue. Lean is seen as an effective way to reduce hidden costs, so over the past 20 years, businesses have widely applied in manufacturing and services such as healthcare, banking, administration and logistics supply rooms, services ... However, most private enterprises in Vietnam are still struggling in the first level of the “Lean manufacturing” application, a small number of private enterprises in Vietnam reach the stage of “Lean Enterprise” or “Lean Thinking”. In fact, many business owners mistakenly think that LEAN is the human resource streamlining. In fact, LEAN does not refer to streamlining personnel but to find the most efficient, fastest, highest quality operation method for the process related to the personnel in charge. For private businesses that have successfully implemented Lean, they use the remaining staffs after optimizing the process to fulfill much larger responsibilities, which are continual improvement in the workplace.

The above limitations have created significant obstacles for Vietnamese private enterprises to improve productivity, increase operational efficiency, and apply advanced governance models, including LEAN. LEAN will open a new direction of thinking and action in the management and administration of Vietnamese private enterprises, providing useful tools to help private businesses make the most effective use of their businesses available resources without requiring an increase in capital or other intangible costs. Through the reduction of existing waste, production capacity will be gradually enhanced over time, creating sustainable development for businesses.

4. Solutions to LEAN in Vietnamese private enterprises

For Vietnamese private enterprises to be able to effectively apply LEAN, it is necessary to prepare carefully both specific conditions and solutions.

The basic conditions include:

Firstly, Vietnamese private enterprises need to have awareness and understanding of the requirements for implementing LEAN.

LEAN is considered as an advanced management method through the use of various tools and methods in production and business activities with specific conditions, circumstances, resources, and environment. Universities together with promoting the intelligence of each individual actively contribute to the process of continuous improvement to increase labor productivity, minimize waste, improve product quality, increase profits, improve the environment. Universities help businesses develop sustainably.

The theory of governance can be transferred and applied globally, including Vietnam. Scholars and practitioners all over the world recognize that the glass management system was pioneered by leading Japanese manufacturing enterprises, representing the best practices in the world. After that, gloss management is not limited to Japan but is also widely applied from developed countries to developing countries, from Europe to Asia...

However, with the constraints as analyzed above, the application of gloss management is not merely in technical factors (implementation tools) but the fundamental element is to have spirit and understanding thorough knowledge of the leadership team as well as each direct

production worker. Each person in the business must be instilled in the meaning and benefits of gloss management, thereby actively building the commitment of individuals and groups in implementing and maintaining the application of the philosophy of LEAN at the organization. In addition to being mentally prepared, each individual needs to be equipped with a method of thinking to access the different tools of LEAN as well as to handle problems that arise during the application process. Then is the technical transfer of each tool.

Secondly, businesses need to prepare enough resources to implement projects that apply for LEAN, especially financial resources.

Financial resources are needed for the entire process of receiving and applying LEAN in the enterprise (from hiring consultants, organizing internal communication training, realizing innovation ideas, reward funds for LEAN). Businesses should consider shifting their management practices to LEAN or applying LEAN right from the start as a project in governance. In addition to human and cognitive factors, thought that understands the philosophy of LEAN requires the minimum financial resources to:

Hire consultants in the initial setup and technology transfer process through in-house training and consulting.

High-ranking leaders of enterprises participate in studying and setting up the system.

- Organize training from middle leaders and specialized staff and workers in the enterprise to understand LEAN and how to do it.

Organize the construction of tools and equipment necessary to implement LEAN, especially the construction of processes, forms, items for visual management, and other tools during the system setup process.

- Establishing and organizing internal communication systems, learning, consulting, practical, realizing innovative ideas into practice, rewarding funds for the achievements of LEAN.

Specific solutions:

Solution 1: Enterprises should make long-term investments in facilities for the plan of applying LEAN and incorporate LEAN into their long-term development strategy.

Enterprises should make long-term investment decisions in which investment in infrastructure is important because applying LEAN to production requires the synchronous development of many factors such as factories and machines equipment, technology, management...

Businesses should apply LEAN into the development strategy because in production enterprises must develop a production strategy. Therefore, LEAN needs to be included in the development strategy to be implemented comprehensively and comprehensively.

Solution 2: Invite the consultants for assistance

Currently, LEAN is still new in Vietnam, experts with practical experience in LEAN are not many but if researching and learning carefully the experience of successful businesses in the world and have flexible thinking applied to the practical situation in Vietnam will create conditions for businesses with the help of experts.

Enterprises can also set up development-oriented consultancy centers. LEAN, giving businesses the autonomy in training, consulting, supporting, and inspecting directly for production and business activities. Whether or not businesses are methodically or programmed.

For this center to work effectively, businesses need to actively learn from the basic theories collected from books, newspapers, magazines, scientific seminar programs, training programs in centers national consultant. Businesses can also learn from successful businesses in the country and around the world.

Solution 3: There should be guidance and training for staff on LEAN.

Successful implementation of this tool requires a great response from many people, especially employees and production workers. When an enterprise has its training, consulting, and support center, the training of knowledge on LEAN is more convenient and effective.

Businesses can provide workplace training for workers and staff after having basic training in LEAN theory.

Some excellent employees and workers may be brought to some companies that have successfully applied LEAN to gain practical experience, then re-guide the company workers.

Solution 4: Perform synchronized training.

The training must be carried out synchronously from top to bottom, firstly for leaders and business managers to see the benefits and best practices, the most effective management. Business management leaders must be committed to long-term implementation with LEAN and effective implementation of 5S, Kaizen, Visual management must start from the management board, the direction is effective with employees and workers.

After that, the business organizes in-depth training for employees and workers, because this is the main part that implements the LEAN tools.

Enterprises also need to develop training programs on LEAN by the characteristics of the business, fully and methodically. Programs must be developed and consulted by experts and experienced people so that the program can be implemented most effectively.

The training program should be formulated in detail and specific, with the nature of both training and practicing in a “hands-on” manner for employees and workers. Besides, it is necessary to carry out the training program on a regular, weekly, monthly, quarterly basis ... Besides, there must also be a team of regular inspection and supervision to ensure the quality of “doing right from the beginning”.

Small and medium-sized enterprises should register to participate in SME support so that they can quickly access and learn from experience with modern and effective production and management methods of other enterprises.

Businesses should proceed to the registration of product quality standards to manage their product quality so that they always meet the requirements and expectations of customers, ensure hygiene and safety. Meet the best quality standards.

Solution 5: Organize the implementation of LEAN toolkit.

Right at the start of the LEAN implementation, businesses can apply the 3 main tools of the LEAN: 5S, Kaizen and Visual Management, even earlier than when designing the factory, building Develop a strategy to facilitate management and implementation. The application of these three main tools does not affect much of the initial investment costs of the business, but it is mainly based on the factors of people and workers, workers take the main implementation role according to the process built. Leadership is the person who creates conditions and conditional reflexes for employees when participating in the organization, at the same time checking and monitoring activities. Especially for operating businesses, the steps can be implemented in the following order:

Firstly, businesses immediately implement 5S because this is considered to be the original foundation tool of LEAN. 5S changes the habits of employees when participating in the organization. From 5S, with the participation of all employees in the enterprise, other tools can be implemented. Therefore, when applying LEAN, enterprises need to immediately implement S1, S2, S3, then implement S4 and S5

Many private enterprises are concerned about the costs incurred during implementation. However, implementing 5S does not affect much on the investment costs of the business, but mainly based on the people here are workers. Need to create habits and conditional reflexes when participating in the organization of 5S implementation.

In parallel with the implementation of 5S, businesses need to develop and implement visual management from arranging, designing factories and workshops, as well as designing the administrative area and process management. This content requires effort and management thinking of leaders when establishing and creating habits of workers in the enterprise.

Kaizen is followed by special implementation in the process of deploying production and business activities. For Kaizen, business leaders need to promote the creative spirit of learning as well as the ability to coordinate with each individual and team. With this toolkit, it requires perseverance, listening, assertiveness, and must build a measurement and evaluation system as well as the incentive regime to ensure the enthusiasm of the employees involved.

Jidoka and some other tools are combined with some new management tools and methods that will be implemented when the basic tools 5S, Kaizen, and Visual Management have been effective. Especially, Jidoka will apply effectively to businesses with a large scale and level of scientific and technological investment and many automation processes in production.

For other tools of LEAN, depending on the capabilities and actual conditions of the business, use a combination to increase the effectiveness of the tools when applying LEAN.

To implement these tools, in addition to knowledge, skills, and technology, the human factor still determines the level of success or failure. In addition to the diversification of capital sources and human resource work, people must be “screened” right from the recruitment and “sorting” stage during the operation process, business leaders need to do for workers and workers. Considering businesses as their “home”. At that time, they will work more enthusiastically, have more sense of responsibility at work, the level of success and efficiency brought about when applying LEAN will be higher.

In short, LEAN is an effective method in production activities in the world but in Vietnam is quite new. That is why many private enterprises in Vietnam do not know this method. Therefore, to be able to apply LEAN successfully, each of the private enterprises in Vietnam needs to focus on developing strategies and appropriate roadmaps, carefully preparing inputs such as investment capital, machinery, equipment, human resources for the whole implementation phase of this tool application plan. Also, the Government needs to have policies to encourage the development of Lean manufacturing by preferential policies such as lending, opening centers to support private enterprises and introducing training programs. creating LEAN into the university ... Thus, with the best efforts of the business together with the support from the State, this governance model will develop, thereby creating advantages for businesses. In particular, industry and benefits for Vietnam's economy in general.

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THE IMPACT OF THE 4.0 NETWORK ON VIETNAM'S SUSTAINABLE ECONOMIC DEVELOPMENT

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Abstract: *The article introduces the era of artificial intelligence and an overview of the industrial revolution 1.0, 2.0, 3.0, 4.0, introduces the concept of the revolution 4.0 and its impact on the sustainable economic development in the current period. In addition to the positive sides, the article points out negative impacts on today's society and economy. By analyzing the influence of the 4.0 revolution, the article discusses about the problems posed in Vietnam, especially Vietnam Government's perspectives on this issue. The article proposes a number of solutions to deploy and implement the 4.0 revolution in Vietnam today. In conclusion, the article affirms that this revolution is both an opportunity and a challenge. If done well, it will open a bright future for the country and people of Vietnam*

Keywords: *impact, 4.0 network, sustainable economic development*

Literature Review and Previous Research Studies:

Nguyen Thi Bich Loan (2018) in the summary report of the Workshop “Industrial Revolution 4.0: Opportunities and Challenges for Vietnam’s Economic Development”. The article deeply analyzes the challenging opportunities of the Industrial Revolution 4.0. Opportunities: Vietnam, with an emerging regional economy, a golden population, is ready to embrace new technologies, and has easy access to the technologies of the Industrial Revolution 4.0; large market scale with a population of more than 90 million people; have access to science in the world. In terms of challenges, Vietnam lacks a source of high-quality labor, has not yet attracted talent, and there is still a melanocytosis phenomenon, if not overcome soon, Vietnam may fall into a middle-income trap and a trade trap. free translation is unavoidable.

Nguyen Dinh Bac (2018) “Industry 4.0 - World trends and development policies in Vietnam” published in the Journal of Industry and Trade. The author points out the positive and negative impacts of the industrial revolution 4.0 on the development of high-quality human resources in our country. On the positive side: in the face of opportunities, Vietnam is a country with well-established, qualified and sensitive labor force with market mechanism.

In terms of limitations: the source of high-quality labor in Vietnam is still inadequate, unable to meet the raised demand. From analyzing the current situation, the author has proposed a number of solutions such as: (1) building and completing an overall strategy for developing high-quality human resources in the new period; (2) actively renew and perfect the system of mechanisms and policies on building and developing high-quality human resources (3) promoting fundamental,

comprehensive, and synchronous innovation of education and training. Nguyen Chi Truong (2018) “Industrial Revolution 4.0 and requirements for the education system in Vietnam”. The author analyzes the content of the Industry 4.0 and its impacts. From analysis, the author shows the situation of human resource development in the context of this industrial revolution. Along with the author’s point of view article points out opportunities and challenges. From analyzing the current situation, the author proposed some solutions such as: developing education, building a team of teachers; building a team of scientists to create a legal corridor

Nguyen Dinh Duc (2018) “Opportunities and challenges in the 4th industrial revolution” The author analyzes the characteristics and impacts of the industrial revolution 4.0 on the development of high-quality human resources in the country. me. From the analysis, the author concludes a strong innovation of higher education, especially higher education. According to the author, in order to catch up with the industrial revolution 4.0, it is necessary to develop education and training of high quality human resources.

In addition to the above-mentioned authors, there are many authors writing about this topic.

In summary, although the authors have different approaches, the authors also have some common points: an overview of the 4.0 revolution, pointing out the opportunities and challenges, and stating some possible solutions.

Methodology and Proposed Model: The article uses a number of methods such as: synthesis - analysis, systematic method, interpretation, inductive, statistics ...

Research Results

Revolution 4.0

The 21st century is the opening of the artificial intelligence age. Smart factories with digital production lines creates high-speed labor productivity; The robots step by step replace the human labor force in all fields. Therefore, in order to develop a sustainable economy for the country, each country has no other option but to promote the growth of the 4.0 technology revolution. Because, the 4.0 revolution is the inevitable revolution of human history. When it comes to revolution 4.0, you must first know revolution 1.0, 2.0, 3.0. The first industrial revolution marked a turning point in human history, when mankind invented the steam engine, replacing the manual production method. This period opens a new era for human to switch from manual production to machine production. This period is also known as the Industrial Revolution 1.0.

The second industrial revolution entered this period with the development of oil. Thanks to this invention, the internal combustion engine was born, replacing the steam engine. This period showed a great development with numerous scientific achievements. This is also the opening period for information technology (IT) such as telephone, television, radio. This period is called the Industrial Revolution 2.0.

The third industrial revolution started in the second half of the twentieth century. In this period, semiconductors were strongly developed, which impulsed the developmet of supercomputers. In the 1970s and 1980s, personal computers gradually became common. In the 1980 to the 1990, programming technology began to develop. Many new scientific inventions had been applied in

practice. Technology engines and transmission lines were quickly converted to automation. This period was the Industrial Revolution 3.0.

As Marx said: "The bourgeoisie, in the process of dominating the class for less than a century, had created more and more massive production forces than the production forces of all previous generations. combined", until the peak period of the 4.0 revolution, it only took a few years for the society to create the same amount of material wealth as previous years. Basically, the 4.0 revolution is the 4th Industrial Revolution, with the combination of physical networking systems, artificial intelligence automation, high-speed Internet and cloud computing.

The essence of the 4.0 revolution bases on digital technology (artificial intelligence) with intelligent materials, integrating all intelligent technologies on the basis of encryption from the human brain (from the memory of the human brain, the person who creates the memory of the machine, the processor of the nervous system, the one who makes the microprocessor of the machine and even the combination of human brain's information processing system with machines through the frequency of waves to optimize processes, production methods, and connect with the global internet system.

Industry 4.0 emphasizes existing and future technologies such as: digital production lines, which are fully automatic based on programming techniques (meaning that if it takes tens of thousands of workers to run a factory in the past, with new technology lines, only a few workers can operate the factory with the productivity of dozens or even hundreds of times of the old technology line). In the near future, people gradually master the 3D printing technology (this is a new technology. If now with the production line using existing technology, people produce a car, it will take a lot of time. But for the 3D printing technology, people just put the design on the printer, after a scanning process, the car will be produced in a very short time).

When the 4.0 revolution in biotechnology, especially the gene-encoding technology develops, people will find their own smart genes, maintain the development of those genes and eliminate the poor genes. With this ability, people will be able to self-improve both physically and mentally. Moreover, people can create functional foods to sustain life with a small amount. Technology applied in the field of transport: in the near future, people will create high-speed vehicles with the ability to transport goods around the world without the need for direct control of the person by using artificial intelligence ... In fact, the 4.0 revolution is only a infant thread. When it becomes well-known, it will have the ability to change all economic problems of society.

The impact of the 4.0 revolution on economic issues

- Positive effects

In the field of manufacturing: With artificial intelligence, humans will create a system of intelligent machines that gradually replace human labor in all fields even the dangerous jobs that human refuse to do. People can create "smart factory" with artificial intelligence, connect it to the internet. With just a smartphone or a laptop, people can control the details of the whole factory operation with the fastest time.

In production activities, there is a shift in the structure of industries. As the 4.0 revolution gradually progressed to perfection, people in manufacturing industries are no longer dominate,

but gradually move to service industries. In the future, service industries such as tourism, hotels and restaurants will thrive since labour manufacturing has been replaced by artificial intelligence.

In the field of science: thanks to the 4.0 revolution, human invention speed is much faster than before with the support of supercomputers. The scientific inventions became more and more plentiful and became a large market. People can buy and sell scientific ideas easily. The exchange of technology between countries around the world takes place quickly. The application of scientific inventions into practice does not take as long as before. If before, a scientific invention applied in practice took a few years, even decades, in the 4.0 revolution those inventions were only counted for months.

In the field of transport: people increasingly find intelligent vehicles that move at fast speeds. If people used to travel thousands of kilometers and took an hour to fly, with intelligent transportation, people could travel thousands of kilometers in just a few minutes. In fact, some advanced countries in the world have been gradually perfected the supersonic engine. If this engine is applied in the civil field, serving the traffic, the travel between countries will greatly be shorten.

In the field of biology: by decoding the genetic map, people find out the errors of the genes, overcome those errors, cure dangerous diseases, increase the longevity of people. In food technology, with the 4.0 revolution, humans can detect the genetic changes of plants. Recently, humans have created asexual reproduction, duplicated millions of cattles and poultries in the shortest time. In the near future, people will have the ability to find functional foods with only 1kg that can sustain human life for hundreds of days without having to eat other foods.

For industries related to finance and accounting: revolution 4.0 in the near future, people will create super-speed computers with high-precision software, helping people to perform tens of billions of operations in a second. Therefore, people take a very short time to accurately calculate the financial problems of many companies.

Revolution 4.0 penetrated many other industries and professions such as: public administration, security, defense ... Thanks to the 4.0 revolution, it created great economic efficiency. Therefore, in order for sustainable economic development, each country must quickly approach the 4.0 revolution. However, apart from the positive problems brought about by the 4.0 revolution, it has certain negative effects.

- Negative impact

For the issue of labor and employment, by creating lines of automation technology with artificial intelligence working to replace people, the unemployment rate will increase. Workers lose their jobs gradually, leading to unemployment. Social problems are increasingly complicated, new evils have emerged, especially high-tech crime is a concern for people. The settlement of social problems, especially job creation, will be a burden on the Government.

The gap between the rich and the poor is widening: In society, those who have capital invested in technology to produce, they become rich quickly, while those without capital lose their jobs, leading to poverty, the rich are getting richer; the poor are getting poorer. Even though labor productivity is very high, the wealth and the material belong to the minority.

Social conflict arose: The worker lost his job, became unemployed, and had no money to buy

goods. In contrast, producers make a lot of goods but cannot sell them. At this time the economic crisis arose. Economic crisis in the coming time is inevitable, especially redundant crisis and financial crisis. We have seen the economic crisis of 2008 - 2009, the economic crisis, the financial crisis that C. Marx predicted before.

The risk of high-tech war: The Second World War was mainly mechanical war with sound-speed weapons, the high-tech war was much more dangerous. In the future, the war will consist of battlefield robots along with hypersonic weapons and even light speed weapons like laser weapons. From these analyses, we come to a conclusion: revolution 4.0 has both positive and negative impacts on the socio-economy, industries and fields including economics, politics, culture and society. , security, defense ...

Revolution 4.0 and the problems posed in Vietnam

In recent years, the Party and State have identified revolution 4.0 as an objectively indispensable part of the era. Therefore, all levels, branches and fields have been directed to plan implementation under the direction of the Government. The Government has issued Directive No. 16 / CT-TTg May 4, 2017 of the Prime Minister stated “Enhancing productive capacity and competitiveness in the product chain; creating a big change in the form of the service business; creates many opportunities for innovative startups; significantly reduce transaction and shipping costs; creating attractive and potential investment opportunities in digital and Internet technology, and also a great opportunity for industrial production with advanced science and technology ”². Recognizing the role and the importance of the evolution of the 4.0 revolution, Resolution 52 / NQ / TW of the Politburo dated September 27, 2019 also offers the guiding view: “Initiatively and actively participate in joining the fourth industrial revolution is an objective indispensable requirement; is a mission of a particularly important strategic significance, both urgent and long-term for the entire political system and the entire society, closely linked to the process of deep international integration; At the same time, fully and properly aware of the content and nature of the Fourth Industrial Revolution to be determined to renew thinking and action, considering it as a breakthrough solution with a suitable step and roadmap is an opportunity for Vietnam to make a breakthrough in socio-economic development”³. Along with the promulgation of the Party’s principles and guidelines, the State’s legal policies, all levels and sectors have been proactive, innovative and advanced, transferring public works, and promptly grasping new issues, especially urgently upgrading 5G internet, gradually upgrading facilities, creating high-speed supercomputers to reach 6G internet.

Joining the trend of international integration in the current globalization context, Vietnam has been preparing all the best conditions to seize opportunities, constantly improving the economic integration environment, ready to approach the Revolution. Industry 4.0, take advantage of the new opportunities that this Revolution brings. To comply with the direction of the Government, all levels and branches in the political system elaborate plans and organize the implementation of national socio-economic development strategies and plannings. After the Covid-19 pandemic, Vietnam immediately began to support businesses in capital to apply renew technology, manage production, improve product quality, with a view to create products, goods with Vietnamese brands which have high value and are capable of high competitiveness in the domestic and international

markets. Particularly, Vietnam gives priority to large-scale scientific and technological research and development tasks in order to meet urgent problems posed by reality. According to the Bureau of Statistics, although the economic decline of countries in the world caused by the Covid 19 epidemic, Vietnam “in the first quarter of 2020 is estimated to increase 3.82% over the same period last year”⁴. Apart from the advantages, there are still certain limitations.

Although the policy has been directed, the implementation is still slow: Although the Party and State have issued mechanisms and policies to pick the head. However, implementation of this problem is slow. Some sectoral levels are not fully aware of the 4.0 revolution, so the implementation under the direction of the Government has many shortcomings. Human resources in the basic sciences are inadequate, failing to meet practical needs, especially high-quality human resources. In recent years, students are appointed to study abroad to access new technologies. However, the effectiveness of studying abroad is not high, some students who are sent to being trained abroad do not return home. The problem of brain drain, not attracting talent, is still happen at some industry levels.

There is a lack of new technology for practice in the education and training of the country. Students graduated university still have to be retrained to access new technology. Technological transmission lines for production are outdated compared to advanced countries. Although in recent years, Vietnam has imported many new advanced technology lines, but it is only advanced compared to the country, and the importer for Vietnam, is still not the most advanced technology. Some businesses do not change technology, even some businesses even import outdated and poor quality production lines.

The restructuring of the industry structure is still slow. The 4.0 revolution will create many new professions and occupations, at the same time it will also lose some traditional professions. Therefore, transforming the industry structure to adapt to the 4.0 revolution is very important. However, a number of sectors are not highly aware of this issue, and have not yet developed new industry and career schemes.

Some levels and sectors implementing the projects to adapt to the 4.0 revolution are still slow. For example, the automatic traffic toll collection, although the Government has issued a document directing the transport industry to collect automatic tolls since 2017, until now, by the end of the second quarter of 2020, the implementation on many roads is still has not been implemented yet.

The implementation and construction of projects on labor and employment issues are still a problem. The rate of unemployed workers after the Covid – 19 pandemic is still high. “Quarter I / 2020 is 2.22%, up 0.07% compared to the previous quarter”¹.

Issues related to the ecological environment and the environment are still complicated. If Vietnam does not control these issues well, it will become a landfill of industrial waste and the risk of seriously affecting people’s health is unavoidable.

If the industry 4.0’s fields of biology, chemistry, the creation of genetically modified animals

¹ <https://tinnhanhchungkhoan.vn/thoi-su/quy-i2020-ty-le-that-nghiep-222-thieu-viec-lam-2-tang-do-thien-tai-dich-benh-320161.html>

and plants and foods with chemical ingredients are not controlled well, the risk to human health in the community is very high. Issues related to cybersecurity: in the era of the 4.0 revolution, hackers developed strongly. The problem of network attacks, stealing computer data is become more and more sophisticated, causing considerable damage to the economy.

The implementation of the 4.0 revolution still faces objective difficulties such as natural disasters and epidemics. For example, at the end of 2019 and early 2020 the Covid-19 pandemic slowed down economic development.

Some solutions to deploy and implement revolution 4.0 in Vietnam today

Firstly, rapidly innovate the economy in the direction of gradually perfecting the socialist-oriented market economy, integrating into the international economy with new economic models, based on science and technology, bringing out opportunities for academia, research institutes and enterprises to invest in research and development, applying new technologies, creating new products and services, and quickly commercialize research results.

Quickly shift the economy, expand the development of services. The 4.0 revolution is not only an opportunity but also a challenge for sustainable economic development. Therefore, it is necessary to shift in the direction of increasing the proportion of services sectors such as banking, real estate, insurance, information technology and reducing the proportion of manufacturing, agricultural and mining industries.

The transition from a production economy to a service economy is one of the most urgent issues. Because of the development of 4.0 revolution, the demand for services in the near future will increase rapidly. Purchase and sale of scientific products, goods transportation services, travel services, restaurant services ... will be serviced with great economic efficiency. Therefore, Vietnam needs to prepare well for this issue.

Secondly, develop human resources with sufficient quantity and quality to perform activities of converting, upgrade technologies and researching and developing new technologies, products and services. Focusing on higher education and postgraduate education, training high-tech human resources; develop human resource development strategies, focusing on developing scientific topics in the fields of electronics, smart materials, biotechnology and information technology application capabilities, team building a team of scientists with qualified and ethical qualities to meet the requirements of the industry, contributing to improving competitiveness, shortening the gap in qualifications compared to the region and the world.

Thirdly, invest in the development of internet systems with high-speed servers, perfect the 5G speed internet connection and urgently research the 6G network to keep up with the development of the times.

Fourth, support enterprises to apply technology, import or self-produce technology lines carrying artificial intelligence and innovation to optimize the allocation of resources to encourage businesses to build model of "smart factory"; build management methods according to digital models; develop new software products, improve labor productivity of enterprises based on the principle of digital technology production line innovation.

Fifth, continue to promote research and development of artificial intelligence products; focus on resources for effective investment in science and technology activities and research and development of new technologies, with special emphasis on electronic technology, information technology, biotechnology ... Project development is capable of going ahead and being proactive in the production of products and services using digital technology.

Sixth, rapid reform of mechanisms and policies for building a “digitized” model in administrative management

Seventhly, promote international cooperation in the field of science and technology and technology transfer; organizing seminars on developing new technologies and new materials; to set up scientific institutes and centers, to invest capital and equipment and machines for scientific research development. Invite experts from around the world to lead innovation in teaching at universities, institutes, and cooperate in science and technology with partners with a long history of research, especially in qualified countries. advanced science and technology.

Eighthly, to create a legal corridor for scientific activities, science and the transfer of new scientific products; building a monitoring management mechanism suitable to the Vietnamese context and international scientific research standards.

Ninth, promote the development of revolution 4.0 in association with the environment. We can not sake the environment for economic development. Therefore, environmental issues must be put on top, making the ecological environment clean, ensuring the health and lives of the people. Thus, the development of revolution 4.0 will be ensured to serve the sustainable development of the economy.

Discussion and Conclusion: If Vietnam want to have sustainable economic development, it must promote revolutionary development 4.0. to do this, all levels and sections must have true awareness, see it as opportunity and challenge. if this is done well, the 4.0 revolution will open a fresh future for the country.

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BUILDING HIGH QUALITY HUMAN RESOURCES FOR SUSTAINABLE DEVELOPMENT IN OUR COUNTRY AT PRESENT

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ABSTRACT: *High quality human resources can be seen as an important factor leading to the socio-economic development of all countries in the world. Vietnam is in the process of deep and fast international economic integration, with the aim of transforming our country's economy from an agricultural one into an industrial economy that develops in a modern and sustainable direction. But the human resources in our country currently do not meet the requirements of development. To accomplish this goal, the problem is that the Party and the State must have a strategy to build high quality human resources to meet the requirements of the country's construction and sustainable development of the country. In this article, the authors base on the most general methodology of materialistic dialectics and historical materialism and some specific research methods such as analysis, synthesis, statistics, etc, the aim gives an overview of the role and current situation of human resources for socio-economic development, thereby providing a system of perspectives on requirements in building high quality human resources for sustainable development in our country at present.*

Keyword: *Human; Human Resources; high quality human resources; sustainable development.*

1. INTRODUCTION

Man has been considered a decisive factor in all activities of society since ancient times. Today the concern for the human factor in many countries, is not only socially significant, but also effective investment strategy for the future.

The Party's documents affirms that: People are always at the center of the whole socio-economic development strategy, considering the promotion of human resources as the basic element for fast and sustainable development. The history of human development has been tested and proven that: Human resources are the most durable and the most important factors in the socio-economic development and the progressive advancement of mankind.

Vietnam is currently entering a new stage of development, with the goal of striving to become an industrialized country towards modernization. In particular, in the context of a deepening socialist-oriented market economy; international economic integration is strongly taking place and is expanding day by day; requirements for rapid and sustainable national development; requirements for the protection of sovereignty and territorial integrity are in place, etc. But the

human resources in our country currently do not meet the requirements of development. In order to stand firm and develop in the new circumstances, to fulfill the above objectives, it is a requirement for the Party and the State pay attention to building high-quality human resources; must know to promote all human resources of the country.

On the other hand, there has been the world trend of increasing scarcity of natural resources, the development and the profound impact of the Industrial Revolution 4.0 on all aspects of socio-economic life. In that context, Vietnam is required to have high quality human resources, which is essential for increasing efficiency in management, production and business.

Therefore, building high-quality human resources for development is an urgent issue for our Party and State at present. The objective of the article comes from the authors' assessing the role of human resources in the development of society; overview of the current situation of human resources in our country, thereby making a number of requirements in building high quality human resources for sustainable development in our country today.

2. RESEARCH METHOD

The article is based on the most general methodology of materialist dialectics and historical materialism. The article uses some specific research methods such as analysis, statistics, systematization, interpretation, inductive, etc.

3. RESEARCH CONTENT

3.1. Some basic concepts

*** *Human:***

Human resources can be seen as the subject of various scientific disciplines with different perspectives on human resources depending on different approaches. The term human resources can be understood in a number of respects:

First, manpower is the strength of the person, in every human being and making him active. That strength is growing with the development of the human body and to some extent, people are eligible to participate in the process of labor and social production.

Second, manpower encompasses all human potential in an organization or society.

Third, manpower is also understood as a workforce with corresponding skills using different resources to create products that meet market and social requirements, etc.

*** *Human Resources:***

There are many different definitions human resources: According to the International Labor Organization, a country's human resources are all people of the working age capacity; The World Bank considers that human resources are all human beings, including physical strength, intelligence and professional skills of each individual.

Thus, according to the first way of looking at the quantity, the human resource is the labor supply source for social development, the total number of people of working age according to the state regulations and working time that they can participate. In the second way of recognizing the

quality, human resources is a combination of several factors including physical strength, intellect, professional qualification, skills of employees.

According to the United Nations approach, human resources are all human knowledge, skills and competencies related to social development. With this perspective, human resources are considered in terms of quality, the role and power of people for the development of society, etc.

But in general, these concepts are all agreed on the basic content: human resource is the source of labor supply for society, is a constituent element of production forces, and plays a decisive role in socio-economic development of all countries.

**** High quality human resources:***

In the spirit of the 11th National Party Congress, high-quality human resources are the most elite part of the country's human resources, including those who are representative of political, ethical and lifestyle qualities; have high educational and professional qualifications; good health (by age); always at the forefront of labor, scientific creation, positive and effective contributions to the cause of national construction and defense. These are the "leading cadres, good managers, contingent of experts, good business administration, skilled labor and leading science and technology officials"[1].

Thus, high-quality human resources must meet the market's requirements, namely: having professional knowledge, economics and information technology; have skills, techniques, find and create jobs, work safely, work collaboratively; have good working attitude, working style, responsibility to work, etc.

Recent economic growth theories show that an economy that wants to grow fast and at a high level must rely on at least three basic pillars: applying new technology, developing existing infrastructure, modernizing and improving the quality of human resources. In particular, the most important driving force of sustainable economic growth is people, especially high-quality human resources, that is, people are invested to develop skills, knowledge and occupations, experience, and creative capacity to become "capital - human resources, human capital".

3.2. The role of human resources for socio-economic development

Firstly, human resources are the prerequisite for the success of socio-economic development.

The socio-economic development process will promote development and change in many aspects with human resources. For example, it changes the structure of human resources, changing from an outdated structure to a more advanced structure; structure of major economic sectors, structure of economic and technical branches, internal structure of each sector, structure of human resources in each region and each locality to the structure of human resources within each business. Socio-economic development is a very strong factor affecting human resources and human resource development.

On the contrary, quality human resources will create prerequisites and conditions for socio-economic development, especially for Vietnam at present on entering the stage of industrialization and modernization, to access to the knowledge economy in the context of low socio-economic development level, thus requiring the improvement of the quality of human resources, especially

the intellectual power is crucial to the success of industrialization and modernization process of the country and sustainable development. The reason is: Vietnam is in the process of deep integration into the world economy, particularly in terms of economic development, this goal is to increasingly expand the market, sell more goods and services. In order to do so, there must be strength in competition, i.e. quality and price. Quality and price of goods depend on two key factors: the technological level of production and the professional and technical level of human resources. Moreover, the process of international economic integration is the process of exchanging and cooperating between Vietnam and other countries in the world in goods and services, currencies and new technologies, both inbound and outbound. Foreign investment and new technologies moving into Vietnam create jobs, new occupations, experience and management skills, etc. These developments directly impact human resources and develop high quality human resources in Vietnam.

Therefore, human resource development in Vietnam is an important factor for the success of socio-economic development, industrialization, modernization and international economic integration. Also, it is necessary to create and improve all the necessary conditions for developing fast, quality human resources, meeting the urgent needs of the renovation, industrialization, modernization and association enter the international economy.

Secondly, high-quality human resources are a condition to ensure economic growth, shorten the development gap between the regions.

Vietnam is a developing country at a low level, mainly an agricultural country, so even the so-called high quality human resource still carries outdated habits and practices of small farmers, lack of dynamism, the organization and discipline in modern industrial production is still weak, enjoying freedom, low industrial manners, and educational level. The quality of human resources in Vietnam is still quite lower than some East Asian countries. Specifically, we are close to Indonesia, but lower in the quality of human resources than most of other countries and territories such as Japan, Korea, Singapore, Taiwan, China, Malaysia, Hong Kong, Thailand, Philippines, etc. This has led to a series of other weaknesses such as poor application of science and technology, low labor productivity, high production costs and leading to the low competitiveness of our economy, the competitiveness of the economy has not improved more but also declined.

With the development goal of making our country basically become an industrial country, with an industrial and service structure in GDP accounting for about 85-90%, agriculture only 10-15%, the needs to train high-quality human resources are urgently proposed, and considered as a prerequisite for the success of this goal.

Therefore, the basic and strategic issue in developing high-quality human resources is to quickly increase the number of employees to raise the percentage of trained workers, with special emphasis on vocational training, to ensure a reasonable training structure between universities, colleges or higher education compared to secondary schools and vocational training, while improving the quality of human resources with standards of professional qualifications, occupational skills, qualities and competencies suitable for the requirements of knowledge economy in Vietnam, thus shortening the gap compared to other countries in the region and the world, contributing to rapid growth and sustainability.

Thirdly, high-quality human resources allow leaps and bounds to the development of the knowledge economy.

In fact, the process of industrialization in many countries around the world indicates that: in the process of industrialization, if any country focuses on the exploitation and use of the capacity of human resources, it can always keep up with the speed. There has been high and stable growth in such countries as Japan, Singapore, Finland, Ireland, etc, which are the most resource-poor countries, but have risen to become the top rich countries in the region.

No other country has more oil than Middle Eastern countries, but none of these countries have moved up to join the “developed countries” group, but has always ranked in “developing countries”. No other place has the land area larger than Africa, but most of those countries are still “underdeveloped”.

New York Times journalist Thomas Friedman came up with the concept of using the weight of a product to compare national level. Take a look at this example: what can one do to earn \$ 500?[5].

To earn 500USD? Farmers in the Mekong Delta sell 2 tons of rice, Chinese sells 100kg motorbikes, Sony sells 10kg TVs, Samsung sells 0.1kg phones, Intel sells computer chips weighing 0.01 kg, Microsoft Corporation sells a software weighing 0 kg. There are many more example, the most valuable products but weighing only 0 kg are inventions or brand values, etc. Such, the higher the knowledge content, the lighter the product weight, the higher the crystallization value of the product.

Nowadays all powerful nations rely on one factor: education, and hence technology. That is the era of the knowledge economy. This is also what Vietnam is aiming for in the future.

Fourthly, high quality human resources are conditions for international economic integration.

Economic globalization continues to grow in size, extent and form of expression with both positive and negative impacts, complex opportunities and challenges. Interdependence, integration, competition and cooperation among countries are becoming more and more popular. Knowledge economy thrives, so the quality of human resources becomes more and more a determining factor for the development of each nation. Our Party advocates the development of high-quality human resources, especially attaching importance to the development of a contingent of excellent leaders and managers, experts, good corporate governance, skilled labor and advanced science-leading technology; considering this as a necessary condition for integration and competitiveness in the region and the world, as well as affirming the position of Vietnamese knowledge and intelligence in the global field.

Thus, the decisive factor for the sustainable development of nations is the high quality human resource, not just the source of material wealth. Therefore, the formation and development of high quality human resources is the most important factor not only in the socio-economic development of each country, but also creating opportunities to access the knowledge economy.

3.3. Building high quality human resources for sustainable development in our country currently

To sustainably develop and accelerate the industrialization and modernization process, it requires the application of new technologies and the development of modern technical infrastructure.

But in Vietnam, the quality of human resources at present is a big problem in comparison with the requirements of the country's development. Over the past years, human resources in our country have also had significant improvements such as: abundant labor force and young labor structure. According to the labor and employment survey data of the General Statistics Office, in 2018, the country's population size reached 94.7 million people, of which the population under 15 years old was 22.1 million people, accounting for 23.3 million people. % population; the population from 15 years of age and older is 72.6 million, accounting for 76.7% of the population[4]. However, human resources in our country are still limited, weak and need to be improved. Specifically: Vietnam is now also facing the problem of aging population, which will diminish the advantage of the young labor force over time; The rate of trained laborers is still low, the shortage of highly-skilled labor has not yet met the needs of the labor market and integration; lack of skilled workers and technicians to meet the increasing demands of society for the development of Vietnam's key economic sectors; the gap between vocational education and labor market needs is increasing; the shift in the model and economic structure caused changes in the supply and demand in labor, while the training sector at educational levels could not keep up with the trend of labor use of enterprises; sense of responsibility at work, professional ethics, civic morality, corporate culture, a sense of compliance with labor discipline of a significant portion of workers are not high; not only is the intellectual capacity of Vietnam's human resources still limited, but the physical strength of Vietnamese human resources is also weak, a big gap compared to other countries (According to the Ministry of Health's announcement on January 31, 2018, the average height of Vietnamese people for men is approximately 1.64 m and female is 1.53 m. This height is very low compared to the average height of most countries in Asia and much lower than European countries)[4]. Etc. Based on current situation, the question has been raised to improve the quality of our country's human resources today to meet the requirements of a sustainable socio-economic development. This means that human resources must be invested in order to develop and create skills, knowledge, competencies and creative capacity. Therefore, building human resources for sustainable development in the coming time must ensure the following requirements:

Firstly, ensure to build high quality human resources in terms of quantity

The number of human resources for sustainable development is the social workforce capable of providing to carry out the duties and tasks of socio-economic development. If the quantity is not commensurate with the requirements of the development, there is no guarantee that the socio-economic development process will proceed smoothly.

The quantity of human resources for sustainable development depends on many factors such as technical qualifications, tools and equipment for employees, professional qualifications, employee awareness and length of working days in each different period. Therefore, the requirements for the number of human resources are only determined relatively, with no general formula.

The more technologically and technically advanced, the more the number of employees directly using technology and technology will decrease and this requires a qualified manager to use high technology. The specified length of labor day has a direct effect on the number of employees needed. A common trend: the more advanced science and technology, the higher the level of people and the quality of labor, the shorter the working day.

Technological changes lead to a change in the labor structure. Technological innovation will cause a redistribution of labor, redundant labor requires expansion of production, thereby forming new different industries.

In fact, our country currently has the advantage of abundant labor resources, low cost labor. This is an advantage, but also a great obstacle to the cause of industrialization and modernization because abundant human resources are conditions for expansion of production scale, development of industries, but pressure on settlement employment. Also, other social needs are affecting the growth, economic development and human resource construction. In order for the quantity of human resources to conform to the requirements of socio-economic development in the present and the next period, we need to lower the population growth rate. Renewing technological and technical processes must be associated with expanding production scale, strongly developing service industry and small and medium enterprises in order to effectively use human resources.

Secondly, ensure construction of high quality human resources in terms of quality

The quality of human resources refers to the physical, intellectual and working style of the employees. This is a decisive factor for sustainable development as well as the process of industrialization and modernization of the country.

In term of physical strength of human resources: It is a prerequisite for intellectual maintenance and development, an indispensable means to transfer knowledge into practical activities, to turn knowledge into physical power. The physical strength of human resources can be expressed as: height, weight, longevity, etc, formed, maintained, developed by nutrition, health care, etc, it depends on economic development level, income distribution and social policies in each country. In our country, the physical strength of human resources is very low compared to other countries in the region in terms of both weight and height due to the low level of economic development, affecting the nutrient supply and health care conditions of Vietnamese people. In addition, physical strength is influenced by the spiritual factors, the training of each person and individual. Thus, the quality of human resources is maintained and developed by material, mental, ideological support and attitudes of people, in which the material needs must be ensured to certain extent necessary to offset the wasting energy of the human body. Improving the health of workers to increase the quality of human resources is a very important requirement currently in our country to implement rapid and sustainable socio-economic development.

The intellect of the human resources is expressed in the educational level, professional qualifications, skills, good qualities of patriotic citizens, love for socialism, pure hearts, good feeling, a good work culture, a sense of discipline in labor, etc. These qualities of human resources are reflected in their creativity, sharp flexibility, quick adaptability to study and mastery of advanced techniques and technologies. It is the objective realization, the ability to overcome and conquer nature, serve the requirements of life and benefit people. Intelligence is also manifested in knowledge, skills, techniques, professional qualifications, the ability to plan and apply policies, the capacity to choose economic solutions and implement economic development. The measure to evaluate the qualifications of each type of cadre in human resources must also be suitable for the country's development stage. Firstly, it is necessary to develop a common norms to standardize the

level of trained human resources uniformly across branches and domains, especially civil servants, gradually raising the level of each type of manpower to par with the standard level of countries in the region and the world at basic standards. Training must be linked to practical needs, the need for human resources to use both the level structure and the industry structure to solve the “imbalanced but very redundant” imbalance of human resources in our country currently.

The working style of employees is expressed in morality, behavior, a sense of organization of discipline, a sense of compliance with laws, and culture of manner; an individual’s political attitude to the situation of the country, a quality of fairness, integrity, taking law and social norms as a measure of his own behavior. It is an attitude of observance of common moral standards, ethical morals and common rules of the community. At the same time, it also shows the norms of the profession, has a professional conscience, respects the achievement of labor and honors the careers in society.

Thirdly, ensure the labor structure in building high quality human resources

In each stage of the socio-economic development process, human resource structure must be appropriate. The structure of human resources is considered in the following key aspects: structure by level; structure by industries; regional structure.

The structure of qualification of human resources includes the proportion of trained employees in the labor force (the proportion of employees with university, college, professional secondary school, technical workers in the trained labor force).

In our country, according to the results of the 2018 General Statistics Office of Labor Statistics, the structure of human resource qualifications: about 44.81% of the labor force has been trained from primary and vocational certificates or higher. up, in which primary certificate is 2.67%; technical workers is 24.07%, professional secondary school graduates 2.18%; College or university graduate or higher is 10.26%. In 2018, the rate of illiterate workers nationwide was 3.95%, not yet graduated from primary school is 7.15%, graduated from primary school was 35.59%, graduated from lower secondary school was 40.61% , high school graduation is 20.71%.[4] Moreover, the training structure of the labor force is still unreasonable: The number of workers with professional secondary education and technical workers is too low compared to the demand. Therefore, in the upcoming time, it is necessary to focus on training human resources in this group that businesses are urgently demanding.

Industry structure: In recent years, the aim of building human resources is to shift economic structure and labor structure in the direction: reducing the rate of value of agricultural products, increase the value of industrial products and services in GDP. Therefore, the labor structure by sectors needs to be shifted towards: agricultural labor decreases absolutely; industrial and service labor increases in the total labor force, of which service labor needs to increase at the fastest rate. Besides, the economic structure continues to shift towards industrialization and modernization, which has brought about efficiency in socio-economic development in recent years. Specifically: the proportion of industry and construction increased from 36.73% in 2011 to 45.24% in 2018; The proportion of agriculture, forestry and ages decreased from 24.53% to 18.91%; The proportion of services was from 38.74% to 39.85%[4]. The structural change by sectors is the basis for predicting

the training needs of the human resource structure in order to better suit the resource requirements for the country's industrialization and modernization in each period.

Therefore, the development of high-quality human resources in the upcoming time should pay attention to the construction of human resources according to the industry structure to ensure the balance in the uses and promotion of human resources in our country.

4. CONCLUSION

In order to develop sustainably, industrialize and modernize the country according to the socialist orientation, it is necessary to develop a high quality human resources in Vietnam with sufficient capacity and qualities to make a motivation in building our society into a fair, loving, good and increasingly progressive society. Only on the basis of creating a team of workers who develop both physically, intellectually, positively politically, morally and emotionally can we have high quality human resources to ensure sustainable development, accelerate the process of industrialization and modernization of the country.

Vietnam is in the process of industrialization and modernization, we still lack many conditions for development such as capital, technology, management knowledge and experience, requiring the promotion of advantages of those existing resources, especially strategies and solutions to promote and improve the quality of our human resources. The XII Party Congress continued to affirm the important role of high-quality human resources, through the viewpoint: "Industrialization and modernization in the coming period is to continue promoting the implementation of the model of industrialization and modernization in the context of socialist-oriented market economy development and international integration in association with developing the knowledge economy, taking science, technology, knowledge and high quality human resources as the main driving force ..." [2]. This shows that the training and effective use of high quality human resources has become one of the key factors promoting sustainable socio-economic development.

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THE DEVELOPMENT OF ECO-INDUSTRIAL PARKS IN THE WORLD AND THE IMPLICATIONS FOR INDUSTRIAL PARKS IN VIETNAM.

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Abstract: *Industrial Parks (IPs) play an important role in enhancing the development of almost all countries in the world, especially of developing countries. That the IPs are developing at a high rate in Vietnam has created a great deal of significant economic benefits such as: investment attraction, updates and applications of advanced technology, employment creation, transformation of economic structure in compliance with reform of economic growth models,...The development of IPs, however, has been leading to environment degradation, resource depletion, economic inefficiency and insustainable elements. The model of Eco-Industrial Parks (EIPs) was created and has globally been recognized as an effective tool to overcoming challenges related to inclusive and sustainable industrial development within the scope of economic growth and sustainable development goals. This writing will mention some typical models of EIPs in some countries, leading to some recommendations to the development of EIPs in industrial parks in Viet Nam.*

Key words: *development, industrial park, ecological, Viet Nam*

1. Introduction

The world has witnessed the transformation in problem-solving approach to environmental issues due to industrial manufacturing over the past time. Countries have gradually been shifting from a passive approach which deals with environmental incidents when they have occurred to a proactive approach which deals with environmental issues during production process via energy saving and cleaner production. At the same time, the symbiotic and cyclic industrial production has been promoted. That is, the output and waste of one enterprise are used as the input of another enterprise, minimizing the environmental impacts of the waste. This is the premise for the formation and development of EIPs in which the relationship between entities in the industrial park is highly symbiotic, simulating the operation of natural ecosystems, minimizing to deleting the waste, garbage and environmental negative impacts. With a large number of IPs in Vietnam, it is essential to apply the EIP approach, transform existing IPs into EIPs and construct new EIPs. Promoting the development of EIPs will not only bring socio-economic benefits to businesses in EIPs, but also benefit workers and the community outside the industrial park fence through waste minimization and environmental impact reduction. Through cooperation, the EIP community will together create benefits that can outweigh the collective benefits possibly gained from each business when trying to optimize its operations individually. Currently, in the world, there are a number of definitions for EIPs. According to Lowe and Warren (1996), “An Eco-Industrial Park is a community of manufacturing and service businesses seeking enhanced environmental and economic performances through collaboration in managing environmental and resource issues including en-

ergy, water, materials ...the community of businesses seeks a collective benefit that is greater than the sum of the individual benefits each company would realise if it optimized its individual performances.” The concept of EIPs was initially introduced in the late 80s of the twentieth century but started to develop in the early 1990 on the basis of industrial ecology. It is now largely understood that an EIP is a ‘community’ of manufacturing and service businesses with close ties aiming at the same benefit: high quality socio-economic and environmental activity through cooperation in environmental and resource management. By working together, the EIP community will achieve a much greater collective benefit than the sum of the individual benefits each company would realise if it optimizes its individual performance. In Korea, an EIP is defined as “a community of manufacturing and service businesses together aiming at enhancing economic and environmental efficiency via cooperatively resolving environmental and resource issues. There are seven basic principles to build an industrial park in the direction of an EIP as follows: Harmony with nature; Energy systems; Management of material and waste flows; Water supply and drainage; Effective EIP management; Construction / renovation; Integration with the local community.

2. The development of EIPs in some countries

The model of EIPs has been researched and developed strongly in developed countries such as the US, Canada, Denmark, China, South Korea ... and brought tremendous benefits to the socio-economy and environment for these countries. It is estimated that there are about 30 EIPs in the world of different groups: Burlington, Vermont, USA; Cabazon EIP of renewable resources, California, USA; Quzhou EIP of Chemicals, Zhejiang, China... However, EIPs can be classified into the following 5 groups: agricultural EIPs; EIPs of resources regeneration; EIPs of renewable energy; EIPs of power plants and EIPs of petrochemicals or chemicals. The difference between these EIPs depends on each country’s development policy, characteristics of natural, socio-economic and environmental conditions in the area where EIPs are located or EIPs are rebuilt from IPs.

In South Korea, in the period of 2005 - 2014, 51 IPs were transformed to operate under the model of EIPs and generated economic benefits of about USD 1.3 billion. It was 2003 when EIPs began to be researched in Korea and since 2005 the model of EIPs have been implemented. This model was considered a South Korean strategy to reduce energy consumption, decreasing greenhouse gas emissions and dealing with climate change. In EIPs, businesses work together to reuse or recycle raw materials, by-products, waste heat and energy to gain economic benefits for businesses, and maintain harmonious, symbiotic relationships with the community and the surrounding environment, aiming at emissions reduction and no gas release into the environment. The model of EIPs in South Korea was built and developed under the National Program of EIPs monitored by the Department of Energy and Resources of the Ministry of Trade, Industry and Energy of South Korea and implemented by the South Korean Industrial Park Development Group. The comprehensive objective of the program was to form an ecological society in which the EIPs and their surrounding communities would benefit from industrial symbiosis activities. The EIP model was a part of South Korea’s sustainable industrial zone development strategy, building EIPs in the chain of resource reuse, committing to symbiosis to the surrounding community and aiming at the goal of production without causing environmental pollution. The program was built in 2003 and implemented in 15 years, from 2005 to 2019, into 3 phases: (i) Phase 1 from 2005 to 2010: Building infrastructure for EIPs and developing networks of resource exchange. The pilot transformation was conducted as follows: demonstration of a pilot

model of EIPs; building consensus on models among stakeholders and building infrastructure for EIPs. The pilot was conducted in 5 EIPs: Banwol-Sihwa, Cheongju, Pohang, UlsanMipoOnsan, Yeosu; (ii) Phase 2 from 2010 to 2014: Expanding the network of resource exchange through regional EIPs. The goal of this phase was to expand regional EIPs, supporting businesses to participate and promoting cooperation with local communities. During this period, 46 EIPs were built in 9 local areas, attracting 850 businesses; (iii) Phase 3 from 2015 to 2019: Completing the model of South Korean EIPs. In phase 3, the industrial symbiosis network was replicated nationwide, community-friendly projects were expanded and resource-saving industries were developed. At the end of phase 3, South Korea would have 150 more EIPs in 12 local areas with the participation of 1,500 businesses. The total budget for the program in 3 phases was 152.1 million USD. The development of IPs gained some benefits: (1) Economic benefits: each business in the EIP would reduce production costs through efficient use of resources and materials, water reuse and improvement of production activities that may harm the environment. Businesses in the same EIP cooperated with each other to reuse materials and by-products, participate in training, share the same environmental information system and support services in the EIPs. That the businesses achieved economic benefits helped to increase the competitiveness of the whole EIP compared to conventional industrial zones. By the end of phase 2 of the National Program on EIPs, South Korea had 195 symbiotic projects that were commercialized, generating profits of US \$ 1.33 billion, including a production cost reduction of about US \$ 0.55 billion and revenues from new manufacturing sectors of about US \$ 0.77 billion; (2) Environmental benefits: The EIP model minimized sources of pollution and waste as well as reduced resource use and environmental pressure on industrial zone infrastructure investors by promoting cleaner production activities. The design of new EIPs or transformation of existing IPs to EIPs is determined on the basis of local conditions and ecological characteristics of IP sites. South Korea's EIPs reduced oil consumption of 9.9 million tons, greatly reducing toxic emissions; (3) Social benefits: The implementation of EIPs in South Korea brought economic benefits to businesses in IPs, as well as created positive impacts on the surrounding community. Developing EIPs created more jobs in cleaner production activities, increasing the demand for services and products by the EIPs, which meant more opportunities for enterprises in the surrounding communities in providing services and products for the EIPs. People around the EIPs benefited from the improvement of environment, land, water, waste and emission management by the EIPs. The model of EIPs of South Korea is being transferred to many countries in the region.

In Denmark, Kalundborg Industrial Park is considered the first typical EIP in the world to develop an industrial symbiosis system through the exchange of energy and materials among companies. The main component of this industrial symbiosis system is the Asnaes power plant with a capacity of 1,500 MW. Most power stations use fossil fuels and their optima efficiency of converting energy generated from burning coal into electricity is only 40%. The remaining 60% of energy is released into the external environment as heat mostly of which is in the form of steam, Ethane and Methane gas, excess heat, solvents, plaster, coal slag, sludge, ash, etc. Excess energy and waste are effectively used for factories in the same industrial park. Companies participate in the exchange of materials and energy for the common good. The waste from one company would accordingly be used as low cost input for another company. The symbiosis model among factories in this EIP is illustrated in the below figure:

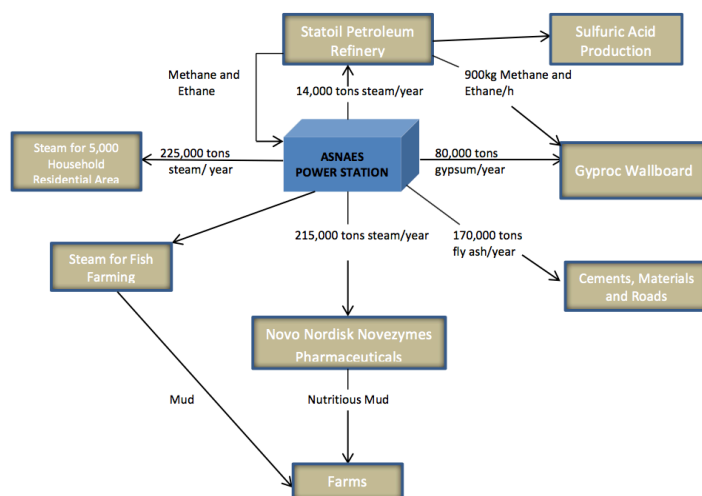


Figure 1.1: The Kalundborg symbiosis.

According to Jorgen Christensen, the basic principles for the formation of symbiotic relationships in Kalundborg Industrial Park are mentioned as below: The compatibility between industries in terms of “waste exchange”; The reasonable geographical distance between factories; Information transparency among factories in the Industrial Park; Sustainable economic development as the common motivation for factories to participate in the EIPs; The voluntary coordination among factories in accordance with the regulations of the functional agencies and authorities.

In China: The Guangdong region in Southern China is the largest source of sugarcane, producing more than 40% of the country’s sugar output. Guangdong’s sugar production costs are quite high while most sugar refining plants do not recycle their waste. This deprives them of a second source of income and releases large amounts of waste into the air, water and soil. Guitang Group is China’s largest sugar refining company with more than 3,800 workers and 14,700 hectares of sugar cane. The Guitang Group created a complex of companies in Guitang to reuse waste and thus reduced pollution. This complex consists of sugar mills, wineries, fertilizer plants, pulp and paper mills, toilet paper mills, limestone plants, cement plants and other associated plants. The primary goal is to “reduce pollutants, reduce costs and make more profits from reusing waste.” Products of Guitang Group of companies are 120,000 tons of sugar / year, 25,000 tons of limestone / year, 30,000 tons of fertilizer / year and 8,000 tons of alkali / year, 30,000 tons of fertilizer / year and 8,000 tons of alkali.

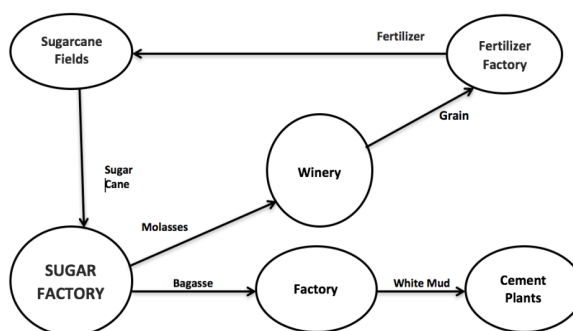


Figure 1.2: The Guitang symbiosis

The plan to build Guitang City as an eco-industrial City is as follows: The plan to call small sugar manufacturing enterprises to transport their waste to the Guitang eco-industrial complex and setting a goal of reusing the waste most: “Reuse up to 80% slag and bagasse, 100% molasses, 100% alcohol residue”; at the same time, calling for the merge of sugarcane growing areas into a wider sugarcane growing area. The plan also includes training of managers for the government and industrial zones, organizing the implementation of IPs and disseminating widely symbiosis manufacturing strategies. Some of the long-term goals of this plan are as follows: Developing the ecological sugarcane industrial zone so that organic sugarcane can be grown, increasing sugar content of sugarcane, increasing yields per 1m² of land and increasing numbers of crops; Expanding paper factories with the goal of production increase to 300,000 tons / year; Partially converting sugar products into fructose, a better consumption type; Facilitating the production of fuel alcohol from molasses (capacity of 200,000 tons / year). This fuel alcohol product will contribute to the reduction of air pollution due to vehicle exhaust. Through a technology that uses less chlorine to bleach pulp, paper made by this technology will be whiter than paper made by the traditional technology.

3. The development of EIPs in Vietnam recently

According to the Ministry of Planning and Investment, regarding the establishment of IPs and economic zones of the whole country in 2019, as of November 2019, the country has had 09 IPs which are newly established and approved to be established, expanded 01 IP. As of now, the total number of IPs throughout the country has reached 335 with a total natural land area of about 96.5 thousand hectares, of which 256 IPs have been put into operation and 79 IPs are in phase of compensation and site clearance. The occupancy rate of IPs has reached 53%. The occupancy rate particularly for IPs in operation has reached nearly 75%, an increase of 2% compared to that rate in same period in 2018. However, industrial manufacturing activities are causing many challenges to the environment and human health. In particular, about 13% of operating IPs do not have wastewater treatment plants while 20% of industrial waste is hazardous waste. The model of IPs has made positive contributions to Vietnam’s economic growth. However, besides the positive contributions, the process of industrialization and development of IPs at a fast pace are generating huge challenges and negative impacts on environmental issues. The reasons for that fact are inefficient use of resources, a lack of linkages among enterprises in the same IP, harming the living conditions and environment of the community around IPs.

The EIP model was first institutionalized in the Decree No. 82/2018 / ND-CP dated May 22, 2018 by the Government on management of IPs and economic zones, which laid the legal foundation for the transformation of conventional IPs to EIPs, for the implementation of the model-related activities and for the expansion of this model in the near future. The implementation of the EIP model has contributed to the goal of green growth and sustainable development in Vietnam. In Vietnam, the EIP model is a new one, currently being studied and piloted by the Ministry of Planning and Investment in collaboration with the United Nations Industrial Development Organization (UNIDO). From 2014 up to now, pilot activities have been conducted in 03 IPs including: Khanh Phu Industrial Zone in Ninh Binh Province, Hoa Khanh Industrial Park in Da Nang City and Tra Noc Industrial Park in Can Tho City. After 3 years of piloting, 72 enterprise

participants in the project have saved VND 72 billion by reducing waste to the environment as well as making efficient use of resources for cleaner production, which improves their competitiveness. Particularly in Hoa Khanh Industrial Park in Da Nang, according to the preliminary evaluation of the pilot results, 8/8 company participants in the pilot of transformation have saved from 5 to 10% electricity, 3 to 5% water, 510.1 tons of CO₂ emission reduction/ year; 95 kg of COD reduction/ year; 51.1 µg of Teq PCDD / F reduction/ year. These enterprises are implementing the model of industrial symbiosis with 6 symbiotic solutions (heat, water, solid waste). Enterprises have conducted initial procedures of the cycle in which waste of this enterprise can serve as input materials for the other enterprise or enterprises can utilize excessive heat and excessive energy in the production process of the enterprise next to them. With 335 IPs in Vietnam, the transformation of conventional IPs into EIPs is a new development direction in order to get industrial development attached with environmental protection and improvement of life quality of the community in the surrounding of the IPs.

Transformation of conventional IPs to EIPs not only benefits enterprises themselves in IPs, managerial agencies of IPs and surrounding communities but also aims at sustainable development. Developing the EIP model also serves as one of practical solutions to the implementation of the National Green Growth Strategy and the United Nations Comprehensive and Sustainable Industrial Development Strategy of the United Nations. Implementation of the model of EIPs in Vietnam is still very challenging because the concept of EIPs is still new in Vietnam and the regulations and legal documents on EIPs are not yet available. Many experts believe that transforming a conventional IP into an EIP with symbiotic links will face many difficulties. For example, the definition of waste is itself inconsistent. On the other hand, the current management of waste in Vietnam is not sufficient to the demand for waste reuse. Besides, some hazardous waste that can be reused cannot be treated on site but must be transported to an appropriate place and a permit for that is a must. Meanwhile, the common infrastructure in IPs currently meet only the basic requirements of electricity, water and wastewater treatment. To be able to connect material flows between enterprises, it is necessary to re-invest, or upgrade the entire infrastructure, paths ..., which requires a large amount of investment.

4. Some implications for Industrial Parks in Vietnam

IPs in Vietnam currently play an important role in attracting foreign investment, growing exports, contributing to GDP and creating jobs for workers. The orientation of the EIP model promises to contribute to the implementation of Vietnam's green growth strategy. But the development of IPs must be associated with environmental protection, natural disaster prevention, climate change adaptation, exploitation and effective use of the existing infrastructure systems among industries, inter-regional district and localities in the province ... So provinces need to develop IPs in the ecological orientation. The experiences in the establishment and development of the IPs of other countries brings significant lessons for Vietnam in the industrial development in general and particularly in the development of IPs in the sustainable orientation.

Firstly, in order for IPs in Vietnam to develop in the EIPs' orientation, four main factors must be considered: (i) Environmentally friendly design which focuses on outer space, factories, working rooms and ensures the green space network within each production establishment and in an IP;

(ii) Efficient planning of physical and energy flows through the design of energy and resource use systems, reuse and recycling systems of waste; (iii) Establishment of industrial symbiosis through sharing of resources and information; (iv) Forming the features of the industrial park as common services for the industrial zone and adjacent residential areas.

Secondly, regarding independent management agencies and institutionalization of IPs: Experience from other countries shows that the presence of an independent agency is required to the management and promotion of EIP development. This agency is assigned to develop development plans, designing incentive policies, managing budgets for EIP development, performing the monitoring and evaluating of the EIP operation. In addition to the presence and enforcement of policies on sustainable development and environmental protection, the successful development of IP systems in some countries shows that there should be clear regulations on EIPs in the legal system.

Thirdly, the process of transforming from an existing industrial zone to a new EIP should firstly focus on changing the enterprises' own perceptions of environmental protection. Local authorities should set the priority for environment protection to make sure all the criteria of an EIP are met when establishing new industrial complex and industrial zones. The State and the overall policies of sustainable development and environmental protection play an important role in the development of the EIPs system. The role of the State through institutions that promote the development of EIPs will be vital. The development of EIPs in other countries also shows the sequentialness in industrial development in general and IPs in particular.

Fourthly, an EIP is a "community" of manufacturing and service businesses with close ties aiming at the same benefit: Towards a high quality socio-economic and environmental activity through cooperation in the management of environmental and resource issues. By working in close cooperation with each other, the EIPs' "community" will achieve a greater collective effect than the sum of the individual benefits each company would realise. It is necessary to develop and maintain a complete and clear system of enterprise information in industrial parks; build new EIPs with detailed construction design from the beginning phase, in accordance with the criteria of EIPs. However, other countries usually first focus on transformation of existing IPs into EIPs and later move on to the stage of constructing new EIPs. This experience would also fit the situation of Vietnam. The development of EIPs should be based on the principle of economic benefits for businesses and businesses must be responsible for the balance of costs versus benefits in the implementation.

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SOLUTION ORIENTED FDI WITH THE GOAL OF SUSTAINABLE ECONOMIC DEVELOPMENT OF VIETNAM

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Abstract: *The article proposes solutions to orient FDI with the goals of sustainable economic development in Vietnam. By qualitative methods and partly by quantitative methods. Combined with scientific research methods such as: aggregated statistical method, synthetic method to make general assessment of research problem; Comparative method to evaluate between periods, the authors proposed five solutions policy of linking FDI with the goal of sustainable economic development of Vietnam to 2025, vision 2035. (1) Develop and soon implement a new generation of FDI attraction strategy in line with the orientation, strategy and goals of sustainable economic development of Vietnam; (2) Continue to review, amend, supplement and perfect the system of legal documents to suit the new Strategy; (3) Amend, supplement, complete and publicize the master plan on FDI for sectors, localities, territories, and economic regions; (4) Focus on developing infrastructure of special economic zones, regions and localities with favorable conditions to support foreign direct investment activities; (5) Continue to reform administrative procedures, improve the efficiency of state management. Based on research results, the author has given the most urgent and necessary solution.*

Keywords: *Sustainable economic development, FDI attraction, sustainable development goals.*

After nearly 35 years of opening up integration, participating in many regional and global economic forums, signing many bilateral and multilateral trade and investment protection agreements, Vietnam has achieved great achievements in development socio-economic development has been creating new investment opportunities for foreign investors.

Advantages, *First,* the opportunity to expand Vietnam's FDI attraction effectively is geographical location advantage, natural conditions, availability of resources for development investment, political stability. After nearly 35 years of regional and global integration, with the increase in FDI in the economy, Vietnam's economic structure has shifted positively towards increasing the proportion of industrial and service values, and gradually decreasing the proportion of industry and services agriculture. The economic structure of the sector and regions has shifted towards improving regional and international competitiveness advantages, forming key economic zones, industrial parks and export processing zones, contributing to lower investment costs, increase profits and facilitate the application of modern science and technology. This is an important basis

and basis to encourage foreign investors to seek opportunities and decide to invest in Vietnam, contributing to the expansion of this type of investment.

The conclusion of Vietnam's negotiation for two new generation trade agreements, namely TPP, on October 5, 2015 (signed on February 4, 2016); EVFTA, on December 1, 2015 and the efforts with 10 remaining TPP member countries (after the US announced to withdraw from TPP), negotiated and came to the CPTPP signing, on March 9, 2018, not only to There is a great opportunity to increase the proportion of FDI when many foreign investors seek investment opportunities in Vietnam to take advantage of the preferences of the new generation trade agreements to which Vietnam is a member, but also an opportunity to for Vietnam to shift the target of selecting investment partners, from low level partners to high level partners from developed countries.

Vietnam has abundant human resources, is in a period of golden population, industrious, creative, fast adaptive to new technology, especially cheap labor costs are also an advantage of foreign investors center; Vietnam is considered to be one of the most politically stable countries in the world and the region with many uncertainties, and is a successful investment destination for production and business of many hi-tech FDI enterprises. This is an important driving force to encourage transnational corporations, target investors to deploy investment, expand projects, transfer technology, research and development in Vietnam in the coming time increase the sustainability of FDI.

Difficulties, First, the challenge of the consistency, transparency and consistency of the law: The system of legal documents on investment, protection of intellectual property rights, environmental protection ... is generally lacking. Weak, inconsistent, and non-transparent documents, many documents are not consistent with international standards, many documents still carry subjective elements of the managing unit in the direction of increasing power, reducing responsibility, causing many problems. Concern for foreign investors in investment decisions, technology transfer in Vietnam, and at the same time reveal many gaps for foreign investors to invest not associated with the goal of sustainable economic development in Viet Nam.

Second, the challenge in the direction of regulating the appropriate investment structure for FDI when the orientation and regulatory tools of Vietnam are weak and lacking. Lack of a system of indicators to evaluate sustainable economic development goals to guide FDI policy. FDI in Vietnam over the past time heavily depended on subjective calculations of investors, FDI mainly focused on outsourcing and assembly in processing, manufacturing, and exploiting natural resources and minerals ... with outdated technology causes waste of natural resources, destroys the environment; Common type of business is 100% foreign investment, not ensuring the goal of sustainable economic development as analyzed.

Third, the lack of and weak infrastructure, not ensuring the systematic and synchronous nature is also a major barrier in the direction of high-quality FDI inflows to invest in Vietnam. Good, synchronous and connected infrastructure is the basic condition to ensure efficient production and business, help reduce costs, lower costs, create convenience and enhance connectivity and support between industries, local, economic sector and among businesses, to encourage target investors to seek opportunities and participate in investment in Vietnam.

Fourth, inadequacies in the management and administration of the State: State management still has some shortcomings. Administrative procedures in some areas such as appraisal, licensing, investor capacity assessment, export, import, customs, land ... are quite complicated, causing troubles for investors investment and selection of appropriate projects are not ensured. Administrative procedures are still one of the discouraging factors for foreign investors. Besides, there are harassment phenomena, overlapping inspection and examination that distort FDI incentive policies, causing negative impacts on the goal of sustainable economic development.

Fifthly, there is a serious shortage of high-quality human resources: encouraging and effectively facilitating foreign direct investment requires Vietnam to have a large number of management staff and professionally, a team of skilled workers, with a high sense of organization and discipline. Only then can Vietnam proactively formulate effective and appropriate FDI development plans and roadmaps. This ensures a good preparation of domestic factors to limit negative impacts and enhance the positive effects of FDI for sustainable economic development.

1. Develop and soon implement a new generation of FDI attraction strategy in line with the orientation, strategy and goals of sustainable economic development of Vietnam

The Ministry of Planning and Investment and the World Bank are developing and finalizing the draft strategy and direction of the new generation of FDI attraction strategy for the period of 2018-2030 to achieve the target: Improving the overall investment situation. and effective policy implementation; Reform the institutional framework to be capable of implementing the strategy; Successful transition to Business Environment 4.0; Increase the number and proportion of FDI projects with high added value; Improved connection and spillover effects of FDI. To achieve strategic results, it is necessary to select a number of priority sectors to promote investment in the immediate, medium term and long term and implement 8 recommendations (Ministry of Planning and Investment - World Bank , 2018).

The strategy plays a very important role, is the basis of reference, creates qualitative changes and ensures the achievement of the set objectives in a certain period with certain resources. The new generation of FDI attraction strategy must ensure the harmonious and efficient selection, exploitation and use of FDI for the goal of sustainable economic development; must reflect correctly and focus on promoting potentials and strengths, effectively exploiting Vietnam's comparative advantages in general and comparative advantages of each industry, product, and locality in particular; proposed objectives and policy solutions must be specific, clear, favorable in evaluation and control...

Lack of overall strategy, lack of long-term vision are often likened to a boat without rudder. Therefore, the Ministry of Planning and Investment, with the support of the World Bank, develops a draft Strategy and Orientation of Strategy for FDI attraction of the new generation, in the period of 2018-2030, is very necessary, and needs to be completed soon and put this Strategy into action. However, with the important role of the Strategy, the completion and implementation, in addition to mobilizing the participation of departments, ministries, branches and localities, should mobilize to the utmost wisdom of experts and experts a scientist to ensure the breakthrough and feasibility of the Strategy.

2. Continue to review, amend, supplement and perfect the system of legal documents to suit the new Strategy

The development, amendment and enactment of the Law on Investment 2014, the Law on Enterprises 2014, the Law on Environmental Protection 2014, the Law on Science and Technology 2013, the Law on Land 2013, the Law on Technology Transfer (Amended) 2017 and Planning Law 2017 ... to meet the requirements of socio-economic development and international integration in the new stage, including aiming to select and effectively regulate projects with direct investment capital. In addition, ensuring FDI develops in the right direction and making a positive contribution to the sustainable economic development goals of Vietnam in the coming time, soon making Vietnam basically become a modern industrial country.

However, the Law on Planning, the Law on Environmental Protection, the Investment Law, the Enterprise Law and other legal documents governing investment-related relations in general and FDI in particular are only at framework institutions, general, not taking into account specific factors and differences between investment entities to encourage and select investors, projects in the right direction with partners, sectors, areas, form ... serving the goals of sustainable economic development.

In order for the legal system on FDI to be synchronous, consistent with Vietnam's development orientation and strategy, the new generation FDI attraction strategy should be assigned to the Ministry of Planning and Investment to assume the prime responsibility and coordinate coordinate with ministries, branches and localities in studying, assessing the current situation and closely reviewing to propose the Government and the National Assembly to consider amending, supplementing, perfecting, and ensuring compliance with regulations violate relevant specialized laws, at the same time soon formulate, perfect and promulgate documents guiding the implementation in order to perfect mechanisms and policies and promptly remove difficulties and problems. FDI aims to mobilize and bring into full play the potentials and advantages of this economic sector, contributing to arousing all potentials and resources of the country, creating a new position and force for the goals of sustainable economic development.

FDI, with its inherent potentials and advantages is a positive factor contributing to the motivation for Vietnam to continuously improve productivity, quality, efficiency and competitiveness of the economy, ensuring the implementation of target macroeconomic stability, develop harmoniously between width and depth, focus on deep development; develop knowledge economy, green economy, towards the goal of sustainable economic development in the coming time. The amendment, supplement and improvement of the system of FDI legal documents will be an effective tool to regulate FDI in accordance with Vietnam's oriented objectives, so there is a need for careful consideration and consideration. to have a suitable direction in the finishing process.

In addition to the positive impact FDI also revealed many shortcomings, the main reason is the lack of strictness, lack of uniformity of the legal system on investment, the ineffectiveness of policy tools in the orientation of the cooperation, quality, model, field and location of investment. In the coming time, Vietnam needs to continue researching and perfecting the legal system on investment in order to have a suitable orientation with a number of focuses on partners, fields and occupations, in order to promote advantages and link with the goal of sustainable economic development of Viet-

nam. To encourage investors from countries with developed economies to invest in infrastructure. Encourage joint-venture model, support Vietnamese partners to buy back shares when mastering technology and access international markets like experience of Korea and Malaysia ...

To ensure the promotion of internal resources, take advantage of the best external forces in the trend of strong regionalization and globalization and ensure that Vietnam is truly a reliable partner, a responsible member of the community. Internationally, the amendment, supplement and improvement of the law on FDI must be based on a review and adjustment in accordance with international practices and Vietnam's commitments to avoid unfortunate events happening later. For example: According to the CPTPP that Vietnam negotiated to join, the investor has the right to sue the host country to international arbitration to claim compensation when an investment dispute violates their legal interests.

Completing the investment law must ensure the consistency, synchronization and development orientation of FDI to serve the goal of sustainable economic development, targeting large transnational and multinational corporations from countries development, investors with advanced, modern and high added value technology and technical solutions; to expand investment forms in accordance with international practices and the new generation FDI attraction strategy.... The legal documents governing FDI must be synchronous, consistent, avoid conflicts, overlaps, and inconsistencies on a certain content that cause difficulties and troubles for investors and difficulties in management, inspection and supervision by state agencies. The contents and measures to ensure the quality of investors such as the mechanism of consultation, appraisal, verification, escrow ..., assessment of the quality and feasibility of investment projects need to be clearly and uniformly specified. Most apply with similar conditions across the country, especially with the appraisal stage of selecting qualified investors, avoiding the race of achievements, unfair competition between localities leading to failure planning, receiving waste of resources and many negative consequences for the country like Vedan or Formosa...

The legal system of investment must be clear, open, transparent, easy to understand, uniformly applied, and ensure the implementation taking into account the peculiarities of FDI. There should be clear regulations on the responsibilities of central agencies, the focal point being the Ministry of Planning and Investment, closely coordinating with relevant ministries and agencies in reviewing, amending, supplementing, and completing relevant legal documents, at the same time strictly implementing the inspection and supervision of law enforcement on FDI in the locality. Local governments are only allowed to attract and implement FDI projects with quality assurance, in accordance with the plan and within the legal framework.

3. Amend, supplement, complete and publicize the master plan on FDI for sectors, localities, territories, and economic regions

Based on the Socio-economic development strategy and sustainable economic development goals of Vietnam to review, amend, supplement and complete the plan for sustainable economic development and orient the FDI promotion. Ensuring cohesion and consistency between regional planning, industry planning, product planning, land use planning ... with planning for sustainable economic development.

Planning must be based on the advantages of the country and regions, must be linked to market demand, the ability and efficiency of resources and a long-term vision, with a rational and efficient structure between sectors. High technology ensures connectivity and high competitiveness for each industry, locality as well as for the whole economy. Combining the work of planning with the planning management and implementation, ensuring management consistency and coordination among levels, branches and localities:

- Focus on the planning to attract FDI to sustainable development of 6-8 large deep-water seaports, reasonably distributed from the North to the South, according to the investment model on the principle of sustainable economic benefits, harmonious benefits between parties; to develop storage systems and infrastructure connecting seaports with economic centers, international border gates ... in order to develop shipping services. Pay attention to choosing locations that do not harm the marine environment, scenic areas and marine tourism.

- Planning for sustainable development of the tourism industry towards attracting FDI with a focus and focus on sustainable tourism development. Harmoniously combine tourism development with conservation, emphasis on developing differentiation, developing local linkages, regional links between famous tourist sites and centers and developing economic branches, tourism services in attracting FDI to develop tourism. Avoid overlaps between localities as well as between investment projects leading to unhealthy competition, adversely affecting the interests of the whole industry and the economy.

- Planning for sustainable development of the agricultural sector by regions and products, on the basis of climatic conditions, soil and advantages of each region, with appropriate incentive and support policies towards develop a high-quality commodity agriculture. Develop and implement solutions to accumulate agricultural land in a suitable form (land consolidation - exchange, purchase - sale, land contribution ...), ensuring the interests of farmers, the state and investors to encourage foreign investors to invest in the development of Vietnamese agriculture and agricultural industries, as well as introduce new agricultural industries and products to Vietnam, contributing to sustainable development of Vietnamese agriculture.

Besides, it is necessary to focus on planning towards effectively attracting high-quality FDI inflows into the development of a number of key industries and fields of the economy and advantageous industries and fields of Vietnam competition such as mechanical engineering, precision engineering, supporting industries, electricity, electronics, information technology, high technology.... FDI must come from essential internal needs of the economy, industry, locality and domestic enterprises, to ensure the goal of sustainable economic development.

The planning must ensure FDI in the direction of selecting investors and FDI projects associated with the goal of sustainable economic development, and at the same time screening and eliminating investors, investment projects that do not guarantee quality. There is a potential risk of negative impact on Vietnam's goals of sustainable economic development. It is necessary to focus on investment screening mechanism from promotion and calling for investment, international consultants can be used to select investors with necessary criteria. To encourage joint ventures, based on local plans and proposals, enterprises evaluated and approved, the Ministry of Planning and

Investment and concerned state management agencies support and facilitate the locality. companies looking for suitable joint venture partners. Or, on the basis of development plans and proposals of foreign investors, the Ministry of Planning and Investment coordinates with line ministries and localities to organize bidding to seek and select Vietnamese enterprises Best response to the requirements to join the joint venture.

All plans need to be publicized and supervised, FDI must be balanced and harmonized with the planning, avoiding the situation that ministries, branches and localities do not comply with planning and harm benefits. interests of the country or of the investor. Periodically evaluate to detect arising problems, inadequacies of the planning to promptly amend, supplement, update, ensure the selection of investors, investment projects to meet the sustainable economic development of the country.

4. Focus on developing infrastructure of special economic zones, regions and localities with favorable conditions to support foreign direct investment activities

Investment capital is still limited, but the annual state budget is still distributed equally among regions. As a result, investment capital is spread out and ineffective. The evidence is that infrastructure in most localities is not invested synchronously, the scale does not meet the demand; many unfinished projects could not be completed for a long time due to lack of capital. Poor infrastructure is a negative factor in attracting FDI. Inadequate infrastructure is one of the reasons for the high cost of investment, production and business in Vietnam. Shortages of electricity, water, lack of roads ... are still common, causing concern for investors planning to invest in Vietnam.

Therefore, the state should base on regional planning, industry planning, product planning, planning for sustainable economic development, on the basis of evaluating the effectiveness between the socio-economic benefits obtained and investment capital, in order to have centralized and key infrastructure development planning, ensuring synchronization, going first, and being proactive in order of priority. Select localities with competitive advantages, favorable geographical location, labor and development resources to focus investment in building synchronous infrastructure, ensuring the provision of conditions. High quality infrastructure to increase attraction of targeted foreign investors.

Infrastructure development investment requires a large amount of capital, a long payback period, and limited resources, Vietnam needs to strengthen the socialization of effective infrastructure investment. In addition to maximizing mobilization from many sources: private capital, FDI, ODA, budget capital, it is necessary to evaluate, select projects, investors ensure quality, eliminate projects that do not bring With high socio-economic efficiency, at the same time, it is necessary to strictly inspect and supervise the implementation, implementation of the project and the exploitation of the project.

Investment in the development of technical infrastructure, social infrastructure, and transport infrastructure must ensure connectivity and synchronization. In the field of transport, transport, it must ensure connectivity between modes of transport (road, railway, waterway, sea, air), connection between regions, localities and countries. Economy on the basis of future transportation demand forecast, natural geographic conditions, security and national defense and investment capi-

tal. Focusing on investment in developing a number of large seaport clusters and railway system connecting to port clusters, contributing to the development of logistics services, facilitating and reducing transportation costs for foreign investors in commercial transactions.

Investing in synchronous and modern construction of technical infrastructure system, social infrastructure, connected traffic system, energy supply system, information technology, environmental pollution treatment... In addition to the fences of industrial parks, export processing zones, hitech zones, and economic zones in areas where investment is given priority in Vietnam, contribute to cost reduction, increase efficiency of project implementation, and encourage high-quality foreign investors to invest in sectors, fields and localities in the direction of ensuring the goal of sustainable economic development.

5. Continue to reform administrative procedures, improve the efficiency of state management

Although the Government covers many measures to improve administrative procedures, the main apparatus of Vietnam is still assessed by international organizations. According to Transparency International (TI), the perceptions index in Vietnam in 2015 Ranked 112/168 countries, at 31/100 points. According to the ranking in 2015, Vietnam has increased 7 places compared to 2014. However, this is not a reliable signal. First of all because in 2014, TI ranked with 175 countries, and in 2015 this organization only evaluated and ranked with 168 countries. Besides, if looking back from 2012 up to now, the reference identity index of Vietnam has not had any change on a scale of 100 (Transparency International, 2015).

To continue to improve the competitiveness of Vietnam's investment environment, anti-corruption, reform administrative procedures, improve the efficiency of state management, the quality of the contingent of cadres and civil servants need to be given first priority. Although Vietnam soon enacted the Law on Anti-Corruption in 2005, amended and supplemented in 2007 and 2012, and now the National Assembly is consulting on the promulgation of the Anti-Corruption Law to replace the Law on, anti-corruption 2005, however, the corruption situation in Vietnam has not changed significantly.

In addition to the effective enactment and implementation of the Anti-Corruption Law, it is necessary to improve the mechanism to ensure that state agencies and cadres and civil servants have to truly consider investors and enterprises as subjects of submission service. In addition to clearly defining the responsibilities, the relationship between state agencies and investors, and sanctions against violations, strengthening the Government's management capacity and coordination among ministries and agencies. Regarding foreign investment, first of all are the Ministry of Planning and Investment, the Ministry of Industry and Trade, the Ministry of Science and Technology, the Ministry of Natural Resources and Environment, the Ministry of Finance, and the Government Office. "The State should only intervene in the economy when markets are ineffective and / or inequality and when interventions help improve outcomes and / or equity" (World Bank and Australian Government, 2016).

The State urgently needs to build a professional and modern contingent of civil servants, resolutely removing from the state apparatus troublesome, harassing civil servants who are incapable and irresponsible when implementing equipment. Clearly define the powers and responsibilities of

each ministry, sector, locality, agency, as well as each title in coordination in organizing the implementation of State management tasks on FDI:

- Continue to innovate and develop the thinking and capacity of leaders and managers associated with integration, a set of transparency indicators, and at the same time innovating the approach in FDI policy formulation associated with the goals sustainable economic development for the next period in order to achieve maximum benefits, long-term and promote restructuring. Promote the self-reform spirit of the staff by changing the mindset according to the spirit of service and the development of society.

- Promote democracy among cadres and boldly apply the principles of market economy in training, selecting, and employing really qualified staff for promotion. Well implementing forms of application, recruitment, public recruitment with many leadership and management titles.

- Improve the efficiency of payroll streamlining work, abolish the practice of only recruiting without discharge for the contingent of state cadres and civil servants. Implement the mechanism of recruiting, dismissing and training cadres scientifically, transparently, closely and strictly on the basis of law and established standards of cadres, civil servants and public servants.

In the reform of administrative procedures, it is necessary to thoroughly implement the one-door policy, the one-stop shop, create favorable conditions for investors to access information, research, and seek investment opportunities; constructing, completing projects, registering for licensing and implementing investment projects. Maintain a regular dialogue mechanism between Government leaders, ministries, branches and localities with investors in order to detect and promptly handle difficulties and problems.

Minimize troublesome procedures in licensing (pre-check) for reputable investors, improve the efficiency of post-check to ensure the quality of investment projects, as well as fulfill commitments of Investors, timely detect projects of poor quality through Vietnamese parties, through joint ventures and relations in the chain and through supervision of state agencies to take measures to handle and limit damages for the economy, at the same time, to support investors when problems arise, to overcome the situation of the very low disbursement rate and the delay in project implementation for many years of many FDI projects in recent years by. Thoroughly use legal tools to evaluate, inspect and supervise activities after investment licensing, both creating transparency and openness in investment activities and ensuring the effectiveness of management physical.

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SOLUTIONS TO PROMOTE POSITIVE EFFECTS OF FOREIGN DEBT ON SUSTAINABLE ECONOMIC GROWTH

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Abstract: *The article proposes solutions to promote the positive impact of external debt on economic growth. By qualitative methods and partly by quantitative methods. Combined with scientific research methods such as: aggregated statistical method, synthetic method to make general assessment of research problem; Comparative method to evaluate between periods, the authors proposed seven solutions (1) Prepare the scenario of "ODA graduation"; (2) To work out a roadmap for proactive foreign debt management; (3) Improve institutions for foreign debt management; (4) Reevaluate the debt threshold set by the National Assembly; (5) Promote the development of the private economy from the national force; (6) Effective allocation of foreign loans; (7) Building debt management information system to meet the demands of reality. Based on research results, the author has given the most urgent and necessary solution.*

Keywords: *foreign debt, solid economic growth, proactive foreign debt management.*

Since 2010, Vietnam officially rose to become a middle income country. This is a good sign for the economy, but also poses the problem when ODA capital - capital provided by governmental organizations, nongovernmental organizations to promote economic development and social welfare. Association of developing countries - not in abundance. With the advantages of lower interest rates than commercial interest rates, loan periods as well as long grace periods, non-refundable aid accounts for at least 25%, Vietnam has always considered ODA as an important source of capital in building infrastructure, absorbing scientific and technical achievements, developing human resources. The reduction of ODA, certainly, will create considerable pressures on the state budget and development, but it is not without bringing positive colors.

Difficulties, In poor and developing countries like Vietnam, ODA received is mainly used to invest in infrastructure, important projects such as roads, energy and industrial projects, hospitals, schools... Funding is decreasing and aid will completely cut off aid, affecting the construction progress of works under construction, or limiting development investment capital of host countries. Growth and competitiveness will therefore also be affected. Especially in the case of Vietnam, despite being out of poverty, the development process is still not really stable and stable, the country is still in the process of industrialization and modernization. just improved, infrastructure is rudimentary, the role of ODA, is very large in providing potentials for the economy. It is estimated that the capital for infrastructure investment accounts for 40% of the total ODA. How to manage to continue investment and development when this aid source is cut will be a big challenge for Vietnamese managers.

With aid sources becoming less and less preferential, interest rates increasing, loan terms decreased, conditions increased, Vietnam is now and will face increasing pressure to repay debts.

According to information from the Ministry of Finance, on average, each year, the State budget pays ODA debt about 1 billion USD, the most payment time will be 2022-2025. This is a major challenge in the context of Vietnam's relatively weak public finance sector, including relatively high and steadily increasing public debt, along with a vulnerable banking sector. Specifically, the state budget deficit has lasted for many years. In 2017, the state budget deficit was about 174.3 trillion VND, equaling about 3.48% of GDP. Although still lower than the rate approved by the National Assembly of 3.5% of GDP, the state budget is continuously in deficit, making it difficult to reduce government spending to meet debt repayment needs. Raising taxes and fees to increase revenues or giving new loans to repay old debts is not a long-term measure, especially when Vietnam's financial market is still relatively young and underdeveloped. Not to mention, Vietnam has quite limited foreign exchange reserves, the reduction of ODA capital will partly cause the shortage of foreign currencies, with impacts from the global context easily leading to instability of government, so the size of government debt increases.

Advantages, First, cheap and concessional aid always comes with the conditions and requirements to ensure the profitability of companies from the donor country, thereby losing or reducing opportunities and profits for companies belonging to the donor country. ODA recipient countries. Borrowers may have to gradually remove tariff barriers on goods from the lending country, or purchase equipment, hire services and personnel from the lending country at a relatively high cost. For loans from Korea, one of the mandatory requirements is that the contractor must be a Korean company or a partnership in which the Korean company holds more than 50% of the shares. Or in the case of China, the recipient of ODA is forced to allow Chinese workers to come to the project. The decreasing ODA capital means that these conditions will also be removed, opportunities for domestic enterprises will also increase, investment capital for programs and projects may be reduced somewhat. *Second*, before the more expensive loans, Vietnam is forced to calculate to use the loan source most effectively. In fact, the effectiveness of ODA investment projects is always a hot issue, when with the mentality of giving away, many project implementation units do not have strict calculations, causing a lot of loss and waste. Decree 52/2017/ND-CP on the re-lending of foreign loans of the Government to the People's Committees of provinces and cities is considered as one of the important steps to prepare for the graduation process of ODA in Vietnam. Male. Provinces with difficulty in budget are still allocated, but more developed localities such as Hanoi, Ho Chi Minh City, Da Nang ... will sharply reduce the allocated capital for projects. Thus, localities will have to calculate whether this source of capital can be effective from the collection of fees and taxes to repay the debt or not, if the project is ineffective, unable to repay the debt, it will borrow less. Raising the responsibility of the unit receiving the capital will partly reduce the situation of widespread aid applications but ineffective use. *Third*, in the long term, when reducing ODA, Vietnam will be forced to increase independence and independence in capital mobilization and business activities. Instead of depending on foreign aid, Vietnam will have to rise up on its own and promote to the maximum extent the internal capacity of the economy. Besides, when cheap capital sources become scarce, capital users must also become more strict to ensure efficiency. The losses and waste will also be closely monitored and reduced.

1. Prepare the scenario of “ODA graduation”

The difficulty due to the decline in aid capital can be completely overcome if Vietnam is well prepared for the ODA graduation process. It is expected that the total demand for mobilizing and using ODA and concessional loans in the 2016-2020 period is very large, about 39.5 billion USD (in addition to 22 billion USD for the transition period 2011 - 2015). Currently the longest loan in Vietnam is up to 2055, the average loan period is 12.5 years. Thus, in the next 40 years, Vietnam will continue to have to repay ODA debt. However, a detailed plan to “graduate” from ODA within the next 15 to 20 years is extremely necessary.

When ODA ends, Vietnam will be forced to increase domestic borrowing and foreign commercial concessional loans to mobilize more resources. But the inevitable consequence is that the public debt burden will become worse, as this source of capital bears a higher interest rate. The first solution is still tightening the spending budget for the public apparatus. For signed or on-going projects, it is necessary to strengthen inspection and supervision to ensure investment efficiency, accelerate implementation progress and increase disbursement rate, avoid prolonged situation of cost. The fight against negativity, corruption and waste must be further strengthened. With the programs and projects about to be signed, priority should be given to important public investment projects in key sectors or with potential for capital recovery. Instead of a pure loan, programs and projects should accompany elements of long-term value and decisive in the development of transfers, support with experience, ideas, expertise, data ...

2. To work out a roadmap for proactive foreign debt management

Building a roadmap for the implementation of an active external debt management mechanism means having a clear, specific plan and orientation that is suitable to the current context of the country as well as international practices.

First, it is necessary to continue to review and remove problems, issue fully and synchronize national public debt and foreign debt management mechanisms and policies. Focusing on amending and supplementing regulations on the management and use of ODA official development assistance, foreign debt criteria by source of formation, foreign loan repayment and management mechanism of enterprises, credit institutions under the self-repayment method, borrowing and debt repayment of local governments, mobilization and use of concessional loans, foreign commercial loans, risk management mechanism, credit rating country in order to continue creating an effective legal environment for debt management, in line with international practices.

Secondly, it is necessary to study and promulgate policy mechanisms on PPP (public private partnerships), BOT, BTO, BT ... to socialize mobilized capital sources for infrastructure development and exploitation. This resource is effective in order to gradually replace the ODA capital which tends to decrease gradually and reduce the investment burden from the state budget.

Third, the supervision and management of risks must be strengthened, ensuring strict control of the Government’s foreign debt limits. To do this, it is necessary to have sanctions forcing all units using the Government’s foreign loans to register for loan limits and conditions to assess the impact of debt, considering it as a condition. It is prerequisite for the loan to be effective, in order to proactively warn against risks, contributing to ensuring national financial security.

Besides, in order to avoid rampant project formulation by localities to apply for central budget, approval as well as supervision from the central level is necessary. While the central budget is willing to commit a certain amount to localities, the projects submitted by local authorities need to ensure some necessary criteria such as being practical with local development and not disruptive. If the general planning is broken, it will be disbursed. This approach has been implemented by countries providing ODA capital to Vietnam. While every year, countries give Vietnam a certain amount of budget, but only a very small part of it is disbursed because Vietnam fails to submit feasible projects that meet the criteria of the that country. These ODA projects themselves, once disbursed, will also be overseen by the funding organizations. The policy on the one hand ensures local autonomy in project formulation and selection, but on the other hand prevents the locality from building rampant projects, disrupting general planning.

Developing a roadmap for proactive foreign debt management to success when completing the following tasks:

Firstly, the completed external debt management apparatus with the focus is that foreign debt management is not influenced by other policies. That is, the decision making for external borrowing, debt repayment or debt restructuring built in the strategy is not influenced by other decisions.

Second, the foreign debt management tool has been completed, including the policy system, information system, and foreign debt plans such as the Government's medium and long-term debt management program; the annual plan for foreign borrowing and foreign debt repayment ... The foreign debt management tools of the Government have been used synchronously and in smooth coordination.

- The content of the fully developed management mechanism includes debt strategy, foreign debt risk management, sustainable debt assessment, linking the management of foreign loans with debt repayment ... The full contents of the foreign debt management mechanism are the conditions and basis for applying proactive debt management. Vietnam's debt market both domestically and internationally develops, making the planning of foreign loans easy, flexible, and proactive for the economy.

3. Improve institutions for foreign debt management

Currently, the overlap in foreign debt management in Vietnam is one of the obvious bottlenecks; Accordingly, there are many agencies involved in management at all stages, from the Ministry of Planning and Investment, the Ministry of Finance to the State Bank. Therefore, Vietnam needs to unify the key management role for external debt through the experience of other countries in the world with the establishment of a National Debt Management Council (including public debt and external debt) on duty. Government membership with members from the Ministry of Finance, the State Bank and the Ministry of Planning and Investment following the model that many countries around the world have adopted. This reduces the overlap in foreign debt management among the three above-mentioned ministries. In which, it is necessary to pay attention to the human resource of this council on the basis of capacity and expertise to meet international practices on foreign debt management.

Along with that, building a mechanism for using foreign loans on the basis of information transparency. Projects using external loans need to disclose the implementation progress, cost estimates and cost allocation for each stage to avoid project suspensions, disbursement delay

and extended project implementation on the basis of Close supervision department of relevant agencies. Doing this will contribute to reducing group benefits in winning the bids for the above projects. Strengthening the supervision of state-owned enterprises' use of loans due to the recent emergence of many cases of inefficient use of loans and insolvency of these enterprises.

4. Reevaluate the debt threshold set by the National Assembly

In many other studies, more complete statistics and the use of several multivariate quantitative models have shown the positive effects of external debt on economic growth as well as proposed effective external debt thresholds. at 65%, 70% even 80% of GDP. However, the fact that the foreign debt ratio of Vietnam has approached the debt threshold allowed by the National Assembly (50% of GDP) is a barrier for the use of this capital in investment in infrastructure construction for the economy. Therefore, in order to remove this barrier, external debt management should be based on monitoring the debt solvency ratios instead of offering the current debt threshold. The National Financial Supervisory Commission needs to have oversight on indicators to ensure the solvency of debts to mobilize foreign capital for Vietnam's economic reform.

5. Promote the development of the private economy from the national force

According to research on transmission mechanism of Nautet and Meensel (2011) shows the impact of private investment on economic growth. Therefore, using foreign debt to develop the private sector is an important foundation to ensure the solvency. To do this, the government must pay attention to private economic development.

According to the Report at the Party's Central Meeting of the 12th session, the private economic sector has attracted 85% of the national workforce, contributing 43.22% of GDP (2015). Also at this conference, the Central Committee of the Party issued a Resolution on private economic development, which is a testament to the concern of the Party and the Government, creating a driving force for the development of this region and the whole of the world. economy set. Despite making a large contribution to the economy, 95% of the private sector is still household, individual and small and micro enterprises and over 90% has capital of less than one billion VND.

Therefore, the Government needs to create favorable conditions to free up production and exploit capital from the people to invest in the economy. To do this, the Government needs to urgently enact a legal framework on the basis of respecting market principles, respect for the law and fair competition to concretize the Party's Resolution as well as the Law on Enterprise Support. small and medium sized ones were passed by the National Assembly on June 12, 2017. In addition, line ministries should step up administrative reform in the direction of creating favorable conditions for private economic development as well as focusing on training human resources in favor of vocational training to serve the region. personal economic. At the same time, promoting the equitization of state-owned enterprises under the central management to improve operational efficiency as well as access to modern management methods. Create favorable conditions for enterprises in the economy to access capital, especially concessional capital sources, to invest in high added value. On the other hand, it creates fairness in bidding for State projects between the public and private sector, in order to increase competition for businesses to always improve, improve and survive in the market economy.

6. Effective allocation of foreign loans

Effectively allocating foreign loans to develop the economy on the basis of improving loan absorption capacity. The Government should eliminate the ask-and-give mechanism for State-owned enterprises in the allocation of foreign loans. On the basis of considering ICOR in sectors to allocate investment capital, ensure a sustainable source of debt repayment in the future. Prioritize the allocation of foreign loans to economic sectors that contribute much to GDP growth as well as create jobs. Finally, as analyzed in the structure of external loans, it is necessary to pay attention to efficiency in use as well as increase in ODA attraction. ODA has been proven through key national projects, associated with national development as well as key economic regions with low cost, long loan period, suitable for developing countries. like Vietnam. Therefore, in the coming time, it is necessary to speed up the disbursement progress of ODA-funded projects, avoid prolonged problems, increase costs due to price slippage as well as negative impacts on reputation from sponsor. On the other hand, in the coming time, this source of capital will be narrowed because Vietnam is in the group of middle-income countries, so it is necessary to set up priority projects using this capital on the basis of the ability to pay back as well as generate future debt repayment sources from the project. To avoid too much dependence on this source of capital, the Government needs to develop the domestic bond market, paying attention to foreign investors.

7. Building debt management information system to meet the demands of reality

Currently, the public's access to information on public debt in general and on external debt of the Government in particular is still quite limited. Because, Vietnam does not have an accurate, consistent and comprehensive set of data and there are no regulations on information disclosure related to the Government's foreign debts. This situation can lead to a decline in the confidence of the public and foreign creditors. Therefore, in the coming time, Vietnam needs to have practical solutions to build a foreign debt management information system, ensuring openness, transparency, and increasing accountability of regulatory agencies.

First, it is necessary to compile or estimate the government external debt data and other macroeconomic data in an up-to-date, consistent, accurate and verifiable manner. These data are the basis for orienting foreign debt management policies in the short, medium and long term, thereby building a reasonable loan and interest payment strategy for each program and project.

Second, it is necessary to develop a regulation on the disclosure of the Government's foreign debt database. On that basis, the debt management agencies are required to provide information on the Government's external debt in a unified form, and only provide it once to the information storage agency. Ensure the database is complete, accurate, up to date on the Government's foreign debt by lender, loan term, interest rate, loan structure ..., for analysis and newspaper. The data must be fully and consistently combined to produce a summary and debt analysis. It is very important to provide information in a consistent, clear, and well-supported way in the current context, avoiding instability and doubt in the market.

Third, it is necessary to specify the period of time to periodically publish the debt database, which can be quarterly, six months or annually. Thereby, information on debt will be provided in a timely manner to the public and other users of information, actively supporting the analysis, fore-

casting and prevention of debt risks. From there, raising awareness about the management and use of foreign capital of enterprises to prevent prolonged losses leading to bad debts for the country.

Fourthly, to equip modern tools and equipment for debt recording, calculation of costs and risks, and sustainable assessment of external debt; tracking tools that quickly update market information. External debt management needs to be supported by a comprehensive and confidential accurate information system. This requirement not only obtains debt data, ensures debt service payments on time, but also aims to improve the quality of reporting on state budget as well as improve transparency in government financial accounts.

Fifth, early study and apply large specialized software for public debt management in general and external debt in particular to manage, control, analyze and statistics to ensure the provision of a comprehensive information system. sync for foreign debt management. Currently, DRMS (Debt Recording and Management System) software is being used for the Commonwealth. This is a software with a lot of utilities such as, to help control from negotiating to maturity, help assess debt needs, use of loans, and monitor disbursement ...

Sixthly, improving the capacity of planning, statistics, reporting, analysis, forecasting, and identifying debt risks based on debt information database to make close assessment. on debt situation, forecasting possible situations affecting the national financial security. In addition, organizing staff training programs associated with foreign experts, learning management experience, collecting and analyzing data accurately and promptly for debt management agencies.

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EFFECTIVE FDI ATTRACTION OF CHINA FOR SUSTAINABLE ECONOMIC DEVELOPMENT

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Abstract: *There is no denying the role of FDI inflows in general and China's FDI in particular has been making positive contributions to Vietnam's economic development, since the US-China trade war happened. China's FDI inflows into Vietnam tend to increase faster than other countries in 2018 and 2019. Although Vietnam's economy has always been heavily influenced by the Chinese economy from imports and exports, to FDI invested in Vietnam. However, in addition to the positive contributions, FDI in general and especially China's FDI capital has had negative effects on Vietnam's economic development, such as: causing environmental pollution. increasingly serious, transfer prices to evade taxes, use outdated production technology ... The author's article below will focus on analyzing the negative side of FDI inflows of China in Vietnam over the past time and bring Basic solutions to attract FDI from China more effectively to limit the downside of this capital flow in our country for sustainable economic development in the coming time.*

Keywords: *Chinese FDI, the negative sides of Chinese FDI, sustainable economic development.*

1. Why has China increased FDI capital into Vietnam last time?

China's FDI inflows from 2018 up to now tend to increase rapidly, reaching 2.11 billion USD in 2018, 2.3 billion USD in 2019 and 2.02 billion USD in the first 7 months of 2020. Chinese FDI has been present in 55/63 provinces and cities in our country and China has surpassed Japan to become the third largest investor in Vietnam, the problem to be explained is why. China has increased FDI investment in Vietnam again in recent years?

The first reason is that labor costs in Vietnam are still cheaper than China. The Vietnamese government has long considered the relatively cheap labor force a competitive advantage in attracting foreign investment, including investment from China. This is especially relevant at a time when labor costs in China are rising. Currently, the average labor price per month in Vietnam ranges from 300-350 USD, half the price of labor in China. Vietnam also encourages foreign companies to come here to introduce new and more advanced technologies as well as the latest management models. This is a good opportunity for local businesses to learn and improve their management skills and productivity. Chinese enterprises in Vietnam have contributed significantly in this area.

Second, Vietnam is a potential market with foreign investors, including Chinese ones. With a potential market of nearly 100 million people with high consumer demand, ecommerce in

Vietnam is a sector attracting FDI. In the years 2016-2018, the two most developed e-commerce sites in Vietnam, Lazada and Tiki, both received large investments from Chinese businesses. In 2016 and 2017, China's Alibaba Group invested US \$ 2 billion in Lazada. In early 2018, the Alibaba Group said it would double its investment in Lazada to fund its regional expansion in Southeast Asia. In January 2018, the second largest ecommerce group in China, JD.com, confirmed a \$ 44 million investment in Vietnam's online retailer Tiki.vn to compete with Lazada. These investments are partly driven by Vietnam's prospects for attracting a relatively young and growing population and the potential to be largely untapped to develop online retail.

Third, Vietnam has been identified by Chinese investors as a location in its investment strategy. Chinese businesses have been choosing Vietnam as their investment destination as part of China's government's long-term strategy of pursuing economic integration with the world and its neighbors. In fact, for many years, China has actively pursued the goal of international economic integration, especially after it joined the World Trade Organization (WTO) in 2001. The Chinese government has signed more than 100 bilateral or multilateral trade and investment agreements with other countries. In the early years, such agreements provided a basis for China to attract FDI. Now, these agreements pave the way for China to invest abroad in search of new sources of growth. In this respect, Vietnam is a viable destination for Chinese businesses thanks to the inherent advantages below: i, China is now one of the 10 largest investors in the world; ii, in recent years, the productivity and capacity of Chinese businesses have increased significantly; iii, Chinese businesses ventured abroad to achieve the goal of expanding external markets, boosting exports of goods and harnessing external resources. Moreover, the slowdown in domestic growth is pushing China's manufacturing industry to look for opportunities abroad. Chinese enterprises' investment projects in Vietnam are also in line with China's ambitious "Belt and Road" (BRI) Initiative. Among the projects within the BRI framework in Vietnam, there is also a project to build an expressway linking southern China provinces with Hanoi and northern ports of Vietnam and projects to upgrade or build new ports in this area.

2. The positive impact of Chinese FDI on Vietnam

Over the past few years, Chinese FDI inflows to Vietnam as assessed by economists have also had positive impacts on Vietnam's economic development and shown in the following aspects: *Firstly*, Vietnam is in the process of industrialization and modernization, the demand for investment capital is huge. Although in the long term, domestic capital is decisive, foreign capital (including ODA, FDI and indirect investment) is still a very important source for Vietnam. China's FDI has contributed to supplementing the capital demand for Vietnam's investment and development. Compared to Japan, Korea, Taiwan, Singapore, the US ... China's FDI into Vietnam is still small, not commensurate with its potential, although we cannot deny certain contributions in FDI. China in the process of overcoming capital shortage, strengthening the completion of infrastructure system, creating capacity to promote economic growth of Vietnam.

Second, China's FDI has contributed additional capital to the balance of payments. As China's FDI inflow into Vietnam is increasing, the impact of Chinese FDI enterprises on Vietnam's balance of payments is quite positive. However, the positive impact only really happened when: Export turnover of Tung Quoc FDI enterprises in Vietnam was increasing, but these enterprises did not

increase more strongly in import turnover; or the value of interest payment and dividend payment transactions did not increase sharply; or China's FDI should focus on sectors where Vietnam has a comparative advantage, export-oriented industries, not protected import-substituting industries; or Chinese investors do not seek to transfer much of their profits back home and transfer capital abroad.

Thirdly, China's FDI to Vietnam has contributed to economic restructuring towards industrialization - modernization. Many studies show that China's investment in Vietnam in recent years has shifted from light industry and consumer goods industry to

construction, processing and manufacturing industries. Currently, China's FDI is present in 55 provinces and cities of Vietnam, from the northern border provinces such as Lang Son, Lao Cai, Cao Bang, and Ha Giang, to the southernmost provinces of the country, including Mui Ca Mau, China's FDI are all towards. This has contributed to accelerating the process of urbanization and modernization of backward areas, narrowing the development gap between the poor and backward provinces in the North and other regions of Vietnam.

Fourth, FDI from China has contributed significantly to creating jobs, restructuring labor and improving the quality of human resources. Data from the Ministry of Planning and Investment of Vietnam shows that the number of direct jobs in foreign direct investment increased from 330,000 in 1995 to 3.6 million in 2017, and also created indirect jobs for about 5 -6 million workers. Although there is no detailed data on the number of jobs created by Chinese investment, the huge role of Chinese FDI shows that it has significantly increased employment opportunities. In addition, China's FDI has also made a certain contribution to training Vietnam a team of managers, workers with technical and professional skills, fluent in Chinese and manner. industrial labor, contributing to transforming social labor structure towards reducing agricultural labor, increasing industrial and service labor.

Fifthly, China's FDI into Vietnam has contributed to the integration of Vietnam's economy into the economies of Asian countries and the world economy. in the world and in the world, the increase of Chinese FDI investors in Vietnam has had a strong impact on other foreign investors in and outside the region, making them more confident in the way. Vietnam's policies as well as increasing the attractiveness of this potential market. With nearly 100 million people and the low labor cost, foreign investors have been attracted to invest in Vietnam. In addition, Chinese FDI in Vietnam has also contributed to increasing exports and expanding international markets. markets in China as well as some Asian countries. China's FDI in particular, FDI of countries in general has contributed to increasing the competitiveness of the economy and increasing Vietnam's position and power in the process of international integration.

3. The negative sides of China's FDI in Vietnam and solutions

In addition to the positive effects that were analyzed and evaluated objectively, Chinese FDI in Vietnam has also appeared to have many negative sides (ie negative impacts) as follows: *Firstly*, along with the deepening of international economic integration, opening markets, Vietnam is increasingly perfecting an attractive investment environment for foreign investors. For China, when investing in Vietnam, there are favorable conditions that not all foreign investors have. However, due to many factors, both objective and subjective, both external and internal, the effects

of Chinese investment in Vietnam have been limited in recent years. It can be seen that China's FDI into Vietnam has not really been commensurate with the existing potentials and conditions, still at a small scale, mainly in normal production areas. Before 2017 according to the chart China's FDI rank in Vietnam ranked only 9/101 countries and territories investing in Vietnam, with 1,029 valid projects and a total registered capital of 7,852 billion USD.

Meanwhile, China's FDI into Cambodia increased sharply: In 2008, China rose to become the largest investor in Cambodia with a total capital of 4,371 billion USD, accounting for over 40% of total investment in Cambodia. In 2009, China's total investment in Cambodia surpassed US \$ 6 billion, tripling China's investment in Vietnam for nearly 20 years. According to the Report of the Cambodian Investment Council, China has so far invested in 522 projects in Cambodia with a total capital of 9.8 billion USD. In addition to the projects that have been implemented, China has committed to invest in many large projects in Cambodia in the past years in areas such as thermal power, hydroelectricity, cement, oil refinery, railway, seaport, agriculture, husbandry, resorts ... estimated total investment of about 20 billion USD. In addition, China has invested in Cambodia through development aid, as of 2017, China's total development assistance to Cambodia was about US \$ 2.5 billion (including non-refundable aid and preferential loans).

With Laos, in recent years, China's FDI in Laos has increased rapidly. According to statistics of the Foreign Investment Department - the Ministry of Planning and Investment of Laos, from 2001 to the end of 2010, China invested in Laos 369 projects with a total registered capital of over US \$ 2.9 billion, become the biggest investor in Laos. China has more than 10,000 km² of project land, equivalent to about 4% of the total area of Laos, the Chinese control most of Laos' economy, from mining, hydropower, rubber, even both retail and hospitality services. In recent years, China's FDI in Laos has increased sharply, currently China has 801 investment projects in Laos, with a total capital of 3.92 billion USD (if including the joint venture capital with Laos, the total FDI capital of China reached about 5.2 billion USD), ahead of Vietnam's FDI in Laos (5.012 billion USD) and Thailand (4.8 billion USD).

The above situation shows that China's FDI in Vietnam, the country with the largest market, having the fastest economic growth rate among the three Indochina countries, are all neighboring China, but Chinese FDI Korea invested in Vietnam increased the slowest. *Secondly*, China's FDI inflows in Vietnam are not yet consistent with Vietnam's economic and sectoral development planning. Chinese FDI does not pay much attention to investing in agriculture, forestry and fishery, paying much attention to exploiting Vietnam's resources. This is an unexpected investment structure, because the exploitation and processing of ores in Vietnam to transfer raw materials (coal, ore, tin ...) to China do not bring economic benefits to Vietnam, very little spillover effect but bad impact on environment and sustainable development of Vietnam. China has divided the areas of its search strategy for fuel into three regions: First, neighboring countries of China, around China's coast and borders; The second is the Middle East and the Gulf Persian; The third is, Africa and America. Vietnam is in the first area to search for raw materials of China. In fact, China has invested in many projects to exploit natural resources stretching from the North to the South in our country. This situation has caused a disturbance in Vietnam's sectoral, regional and economic planning. On the other hand, if the management of these projects is not

good, there will be a risk of environmental pollution, affecting the sustainable development of Vietnam. The development of China in the coming time is a big challenge for Vietnam before the risk of resource depletion.

Thirdly, the issue of Chinese labor following China's FDI projects is becoming more and more complicated. If there is no solution sooner, it is likely to become a "national problem". Indeed, where China's FDI goes leads to Chinese workers migrating there. Chinese workers are present in almost all Chinese projects invested or contracted in Vietnam. In Hai Phong, there are currently 1,300 Chinese laborers at the construction site of the No. 2 thermal power plant (Tam Hung commune, Thuy Nguyen district). Chinese laborers are overwhelmingly in force, so a few Vietnamese workers who are fortunate enough to find work here are always subject to forced execution without knowing who to call. That comes from the fact that Chinese FDI enterprises often do not form trade unions, violating Vietnam's Investment Law. Meanwhile, the union is the organization that protects the rights of workers. In Ninh Binh, 1,988 Chinese people are working on the construction site of the Ninh Binh nitrogenous fertilizer factory. In Quang Ninh, Bac Ninh, Bac Giang ... everywhere are Chinese people working in Chinese investment projects. In the central and southern provinces such as Thanh Hoa, Ha Tinh, Binh Thuan, Lam Dong, Binh Duong ... Chinese labor is increasing more and more. According to the March 19, 2014 report on the foreign labor situation of the Management Board of Vung Ang - Ha Tinh Economic Zone, currently Vung Ang Economic Zone has 3,730 foreigners, mostly Chinese, of which 1,560 people were granted work permits. Many Chinese people come to Vietnam by tourist routes and then stay behind. In Tra Vinh province, there are 920 employees, mostly Chinese, working at the Duyen Hai Power Center (Duyen Hai district, Tra Vinh province). However, only 517 workers are granted work permits, the rest are unlicensed, or by tourist Visa. In Binh Thuan, the number of Chinese laborers has flocked to Vinh Tan commune (Tuy Phong district, Binh Thuan) to execute the construction of Vinh Tan Thermal Power Center in recent years, turning this place into a "village" of Trung. Quoc. For example, by December 2013, Chinese laborers in Binh Thuan amounted to 610 people. Chinese people rushed to Vietnam along with Chinese FDI, it is worth mentioning that many of them are illegal unskilled workers, doing business, trading, violating the law, causing problems. society, causing insecurity in the local order ... While Vietnam is actively sending workers to markets in South Korea, Japan, Malaysia to solve the problem. jobs for surplus and idle labor, the fact that Chinese investors rarely use local labor has greatly affected Vietnam's investment attraction policy. What is even more remarkable is that, in this day and age, the flow of migrants often goes from poor, underdeveloped countries, to higher-income developed countries, the presence of thousands of Chinese workers in "Special" in Vietnam - a country with income many times lower than China, is unusual, really hard to understand.

It can be said that the phenomenon of Chinese labor present in Chinese FDI projects in Vietnam is not a policy issue but a matter of implementation, associated with the responsibilities of agencies. The project manager, first of all the project licensing agency, is primarily responsible for project supervision. Secondly, the place where the work permit is issued is responsible for inspecting and supervising the operation of the enterprise in accordance with the contract, and the locality where the project is located is also responsible for direct supervision. For Chinese

workers, there may be some respect, which is not appropriate in economic cooperation. Because in the field of economic cooperation, violations need to be treated seriously as a solution to maintain sustainable relations. The fact that China sent laborers, old and outdated technology machines and equipment to work on FDI projects in Vietnam may be intentional, partly due to the attitude of Vietnamese authorities. This invisibly gives the Chinese FDI enterprises and projects the ability to take advantage of policies and pinch the development of Vietnamese enterprises. As mentioned, in fact, Chinese FDI in Vietnam is not as much as other countries, but the benefit level is much higher from foreign ODA projects investing in Vietnam. Overseas labor is rampant in Vietnam, obviously only happening to Chinese investors. China is completely against the purposes, regulations and laws on FDI that any investment partner must follow. According to current regulations, businesses are not allowed to recruit unskilled foreign workers to work in Vietnam. According to Decree 102 issued in 2014 and Circular 03, which takes effect from March 1, 2014, continues to affirm that Vietnam only recruits managers, executives, experts and employees. kinetic engineering. The provisions so far are consistent that Vietnam does not accept unskilled foreign workers to work in Vietnam, including jobs requiring experts, executives or technical workers if Vietnamese If we can meet it, we have to recruit Vietnamese labor. Therefore, the Chinese labor to do unskilled labor in works and projects in Vietnam is not in accordance with the law, it is necessary to have the strength and control to force them to strictly implement .

Fourth, China's FDI has almost no effect in technology transfer, most of which are outdated technology or belong to industries polluting the environment. China's goal is to shift labor-intensive manufacturing facilities, low wages, and goods Cheap chemical and high technology abroad. This is the biggest limitation of Chinese FDI enterprises in Vietnam. With the advantage of cheap prices, many types of machinery and equipment from China are being imported according to orders at all prices for Vietnamese businesses. Low price is a factor that helps the old Chinese production lines dominate the market compared to domestic products and imports from source technology markets such as the US, EU, Japan ... Besides , another factor that makes low-quality Chinese goods rampant is the policy "gap". In particular, many imported lines and machines enjoy zero import tax rates, thus competing fairly easily with domestic goods such as machine tools, paper machines, canning machines and many other types of restoration machinery. other production. Therefore, there are concerns that the import of machinery and equipment from the Chinese market is really effective? or Vietnam is a country that consumes obsolete technology for China ... The import of technology and equipment for short-term use is clearly a problem that needs to be considered. According to a survey of managers of the Ministry and Department of Planning and Investment, 66% said that the technology level of Chinese enterprises is average and more than 33% said that the technology level of They are poor and consume a lot of energy. When the technological level of such Chinese enterprises, the technology transfer to Vietnam, even though it takes place, is only called the process of pushing outdated technology for Vietnam.

Fifth, the problem of production linkage among enterprises has not been as expected. Chinese FDI enterprises often carry machinery and equipment, including those that Vietnam can meet. Many Chinese machines brought to Vietnam are those that Vietnam can produce. Along with FDI, China sometimes imports massively cheap consumer goods, strangling some of the country's consumer goods manufacturing industries, especially those that are incipient. In fact, the domestic manufacturing

industries in Vietnam are heavily dependent on Chinese raw materials and markets, especially export industries. For example, Vietnam's agricultural sector, from agricultural materials to commodity trading is also dependent on China, which is a huge threat to life, income and employment of 70% of people. agriculture, 50% of Vietnam's common labor. China's increasing investment in Vietnam is raising concerns about Vietnam's loss of economic control, especially with Chinese companies gradually acquiring Vietnamese companies in the textile and apparel sector. , real estate, mining, thermal power, construction, processing, infrastructure, etc. Because many Vietnamese companies are facing financial difficulties, having to sell part of their capital to foreign enterprises, Chinese companies are increasingly buying shares of Vietnamese enterprises. After a while, those companies are in danger of turning into Chinese companies, which are no longer Vietnamese companies, if they buy a lot of shares and occupy a majority of the seats on the board.

The Chinese warnings "silently" acquire Vietnamese businesses are increasing in the media and public opinion. In fact, there can be some significant deals like Firstland company (China) has become a major shareholder of Bao Minh Joint Stock Corporation (BMI) with the ownership rate of 5.63%. At the end of December 2013, Gaoling, a fund of Chinese investors, also spent 40 million USD to buy 6.2 million shares and became the second largest shareholder of Vinacafe Bien Hoa. It is evident that China's increasing investment in neighboring Vietnam is indispensable in the trend of integration, openness and economic liberalization. But the risk here is that the Vietnamese economy itself is too weak, private enterprises are not allowed to develop, SOEs operate inefficiently, so they have to rely more and more on their heads. foreign investment.

Sixth, the transfer pricing situation of Chinese FDI enterprises. The cost of investing in projects using Chinese technology is usually 2-3 times higher than the cost of investing in similar projects in the country depending on Japanese and European technology. This gap leads to misleading assessments of the effectiveness of FDI, thus distorting indicators of overall economic efficiency. Research shows that loss reporting is not unique to a particular industry, but is particularly common in industries such as apparel and footwear manufacturing, retail and soft drinks. For example, according to the report of Ho Chi Minh City Tax Department, foreign enterprises in the garment industry in Ho Chi Minh City reported losses, but most of the domestic companies operating in this sector have interest. This phenomenon seems difficult to explain because domestic companies are often said to have lower productivity and less competitive advantage compared to foreign partners. According to the Department of Corporate Finance (Ministry of Finance), about 40% of foreign businesses reported losses annually. In 2017, 37.9% of foreign businesses reported losses; In 2018, this figure was 36.7%. Notably, there are foreign enterprises that reported losses over a period of 10 years or even 20 years, but continued to increase capital and expand investment in Vietnam. This shows that the transfer price situation in foreign investment sector is increasing and complicated. The Vietnam Chamber of Commerce and Industry (VCCI) and the United States Agency for International Development (USAID) conducted a survey in 2014 to investigate the transfer pricing behavior of foreign businesses in Vietnam and found that It appears that 20% of these firms admit to price transfer. According to experts, the price transfer process involves the foreign enterprises' declaration of their initial investment value, leading to tax losses, reduced profits and unfair competition, and negative impact on consumers. pole to the host country. Foreign businesses are often considered to be large

corporations with modern technology and equipment, and are therefore expected to contribute capital. As Vietnamese partners are often unable to value modern technology and equipment, foreign partners tend to appreciate their contribution, resulting in an inflated capital contribution to any joint venture. Then, in the course of production and business, foreign enterprises often declare high input prices, and seek to increase other expenses such as advertising costs. Report to reduce or eliminate profit. These companies will also take advantage of interest payments to make transfer pricing. Therefore, even if the branch of a company in Vietnam is nominally profitable, that profit will be used to pay interest and be calculated as an expense, thus eliminating be profitable. This has led to the phenomenon of a number of foreign businesses in Vietnam expanding their production activities and increasing their revenue streams despite continuous losses. Currently, most cases of transfer pricing in Vietnam have not been brought to court due to the weakness of Vietnam's legal framework for handling transfer pricing and the sophistication of FDI enterprises in covering up en this.

To overcome the negative aspects of China's FDI inflows in Vietnam as analyzed in the coming years, some basic solutions need to be implemented as follows:

Firstly, change the perception in attracting Chinese FDI.

Attracting FDI selectively oriented to minimize the environmental impacts, technological landfills. Attracting FDI needs a strong, oriented orientation in the fields of infrastructure; environmentally friendly projects, "green" industrial projects; projects with high technology content, using less energy and resources; ... Restricting FDI attraction in non production sectors, increasing trade deficit, inefficient use of natural resources and land, outdated technology, causing environmental pollution, ... Attracting FDI is suitable with the advantages of each industry and each locality. In addition to large-scale FDI projects, Vietnam will also promote the attraction of small and medium-sized projects suitable to each economic sector, each locality and in line with the restructuring orientation. advantages of each region. However, this attraction of FDI must ensure compliance with the central planning and direction of the central government, along with appropriate decentralization to localities on the basis of economic and social conditions. staff capacity. In addition, when attracting Chinese FDI, localities need to harmoniously resolve local interests with national interests, in principle, having to put national interests above local interests and ensure security. best country.

Secondly, the Government needs develop a master plan to attract unified FDI.

The development of a master plan to attract foreign direct investment (FDI) in general and Chinese FDI in particular is essential to increase the attraction of Chinese FDI and improve the efficiency of China's FDI for the country. the socio-economic development of our country.

Although Chinese FDI has a certain position in investment and in GDP, many people argue that Vietnam has not yet succeeded in China's plan to attract FDI for economic development in terms of: contribution for GDP, creating jobs, developing auxiliary industries, industrializing and modernizing the country, ...

Third, Improve the efficiency of China's FDI management.

In order to improve the efficiency of China's FDI management, the Vietnamese Government should effectively implement the following tasks in the coming time:

Firstly, complete the legal documents related to FDI.

Continue to review legal documents and regulations on FDI to revise asynchronous and inconsistent content, supplement missing contents and remove conditions for applying investment incentives. in line with Vietnam's commitments under the WTO integration framework

Secondly, strengthening the state management of Chinese FDI.

The state management of FDI in China should aim to improve and strengthen the capacity to inspect and supervise the activities of Chinese FDI enterprises in provinces and cities to promptly detect difficulties and obstacles. find support and disassembly solutions; urge projects that are behind schedule, slow to implement or not yet comply with commitments; at the same time, handling violations of the law to ensure the rigidity and fairness of the law of Vietnam. Building a national information system on foreign investment to help the supervision work continuously and closely; regularly update and classify the situation of foreign investment attraction and activities in service of the management, administration and policy making of state agencies at all levels. Promote the review and rectification of disputes related to FDI.

Besides the three basic solutions above, it should be done synchronously and effectively with the following solutions:

Firstly, Chinese labor management in FDI enterprises in Vietnam is tighter and more effective. Secondly, Strengthen production links with domestic enterprises effectively. Thirdly, Improve the quality of human resources and complete technical infrastructure. Fourth, continue to reform economic and institutional policies directed at the effective management of Chinese FDI.

Conclusion: The above are the basic solutions that help Vietnam promote the positive effects of Chinese FDI on economic and social development in our country. Other will overcome the negative (negative effects) of Chinese FDI to our country. However, in order for the above solutions to bring practical effects, it is necessary to resolutely implement the above solutions.

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VIETNAM'S PARTICIPATION IN GLOBAL APPAREL VALUE CHAIN IN THE CONTEXT OF 4.0 INDUSTRIAL REVOLUTION

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Abstract: *Global value chain (GVC) in apparel manufacturing can deliver significant opportunities, including employment and income for any participant, especially for developing economies. In the context of Vietnam, many studies have shown that wages of Vietnamese apparel manufacturers were higher than that of similar types in non-international ones. The export position of a country within garment GVC is likely to be determined by available resources, especially by relationship with international brands... Vietnamese apparel manufacturers have abundant labour, but limited capital, technology as well as indirect relationship with international brands, therefore they participate into GVCs mainly as subcontractors. The fourth industrial revolution (Industrial 4.0) in the world nowadays is expected to bring new fresh air to world economic after periods of ups and downs and many industries could be affected both positively and negatively. So as to manufacturing industries are not out of this trend. In the framework of GVC, manufacturing industries including apparel is suggested to be significantly affected in the context of the fourth industrial revolution. Vietnamese apparel manufacturing, although being top three apparel producer, has still been facing difficulties in capturing more added value from GVCs. Base on study of Industrial 4.0 and global apparel value chain, this paper analyzes the participation of Vietnamese apparel manufacturers and the ability to improve participating capacity in global apparel value chain, especially in the scene of Industrial 4.0.*

Keywords: *global apparel value chains, export position, labor cost, value added, Industrial 4.0*

1. INTRODUCTION

Global value chains has defined since 1980 by Michael Porter, Gary Gereffi developed the frame work of global value chains in 1994, especially deeply study refered to manufacturing sector such as apparel, footwear etc. Gereffi (1994) also devided global commodity chains into two distinct types of international economic networks, namely “producer-driven” and “buyer-driven”.

Apparel chain is the typical model of buyer-driven value chains refered to labor-intensive industries. The apparel value chain is made up of physical transformation of raw materials into final products, while the value chain consists of activities that add economic value to the product at each stage (Lopez-Acevedo & Robertson, 2012). The chain is operated around five main stages: raw material supply, component for apparel assembly, production networks, export channels and retail to the final consumer, in which large retailers, marketers, and branded manufacturers play the pivotal roles in setting up decentralized production networks. In another words, apparel production is generally carried out by tiered networks of third world contractors that make finished goods for foreign buyers who are large retailers, marketers or global brand names supplied specification of those finished goods.

Apparel value chain is carried out totally as the following mechanism.

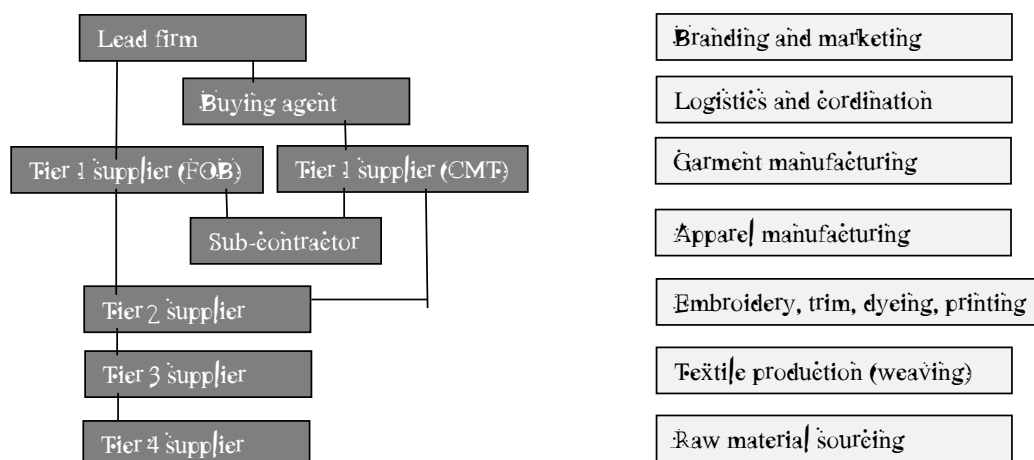


Figure 1: Supplier tier framework in the global apparel value chain

Source: Shelvey Arifin, 2017

1.1. Research content

- Global apparel value chain and participation of Vietnam' manufacturers
- Influences from industrial revolution 4.0 to the world apparel industry as well as Vietnam' ones
- Recommendations for Vietnamese apparel enterprises to increase value-added from participation of GVC in the context of the industrial revolution 4.0

1.2. Research method

Qualitative is the main research method that the author used in this paper. This is an appropriate research method in the field of social sciences, does not require research costs, especially a rich, diversified and reliable research source. The authors have used specific qualitative research methods in the research process including case study research, record keeping, process of observation, one-on-one interview.

With the results of the above research methods, the author conducted analysis of qualitative data such as notes, images and text documents. In which, the method to analyze qualitative data used by the author is mainly text analysis. This is also a commonly used method and is being shared widely across social media platforms.

2. PARTICIPATION OF VIETNAMESE APPAREL MANUFACTURERS IN GLOBAL VALUE CHAIN

2.1. Vietnamese apparel manufacturers are high volume exporters

Global trade in apparel is dominated by specific group of exporters. It was shown in 2018 that ten countries produced 69% of the world export volume, in which Asia was the so-called clothing factory for the world which accounting for 44% of global exports in apparel (HS 61 and HS 62). China was in top of 15 global apparel exporters by value which counting for about 30% of global apparel exports by value, and making up over 60% of all apparel exported by Asia's ten largest manufacturers. Following by China, Vietnam and Bangladesh were the largest apparel producers in Asia, also in the world.

Taking advantage of large working age population, Vietnamese apparel exports developed around high-volume. In the period 2011 - 2018, the number of textile enterprises increased nearly twice from 6,898 enterprises in 2011 to 11,959 enterprises in 2018. The number of textile enterprises accounted for 37%; apparel manufacturers accounted for 63% of the total number of businesses, in which about 2,500 manufacturers produced to export (MCSS, 2020). Low-cost and abundant labor are the main advantages of Vietnam’s apparel manufacturers. Vietnam has significantly increased its share of world apparel market, especially apparel production exports with HS code 61 and 62.

Table 1: Top ten apparel export countries in 2015 - 2019 (including HS 61, 62)

Unit: million US\$

No.	Country	Exported value				
		2015	2016	2017	2018	2019
	World	437,950	433,134	449,334	475,783	475,072
1	China	162,349	147,794	145,564	144,973	138,238
2	Bangladesh	26,532	33,649	35,095	39,509	40,412
3	<i>Vietnam</i>	<i>21,434</i>	<i>22,410</i>	<i>24,396</i>	<i>28,152</i>	<i>33,283</i>
4	Italy	19,400	20,032	21,401	23,434	23,771
5	Germany	16,179	16,533	20,318	23,380	23,885
6	India	17,125	16,959	17,350	15,663	16,242
7	Turkey	14,844	14,784	14,788	15,306	15,540
8	Spain	11,241	12,257	13,775	14,134	14,282
9	Netherlands	8,519	9,052	10,265	12,202	13,043
10	France	9,803	10,054	10,725	11,992	11,987

Source: author based on ITC TradeMap

In the period 2015 - 2019, Vietnam always ranked third of the top ten apparel export countries in the world. Accordingly, the share of Vietnam apparel exports also increased from 5% in 2015 to 7% in 2019. To exploit Vietnam’s advantages, there are many retailers and brands sourcing from Vietnam, namely Gap, Nike, Mango, Uniqlo, Adidas, Levis, Place... Thanks to strongly investment of those retailers and brands in producing to export, Vietnam apparel exports have grown rapidly.

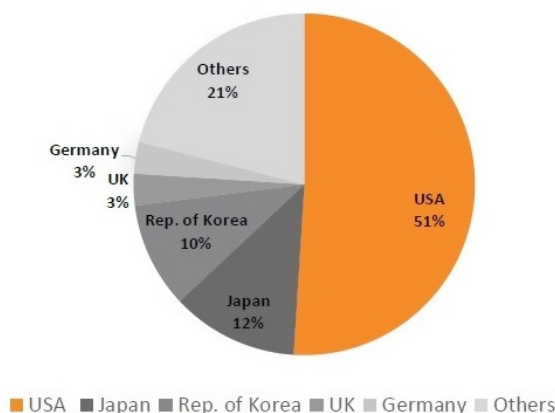


Figure 2: Vietnam’s key exporting countries - apparel

Source: ThreadSol, 2018

Vietnamese apparel exports have increased its share since early 2000s, primarily driven from United States’ buyers. According to Office of Textiles and Apparel (OTEXA), in June 2020 and the first 6 months of 2020, Vietnamese apparel exports to United States (US) reached nearly US\$ 6,054 million, and US\$ 13,680 million, lower than that of the same period in 2019, but Vietnam’s apparel share still accounts for 14.2% in the United States market.

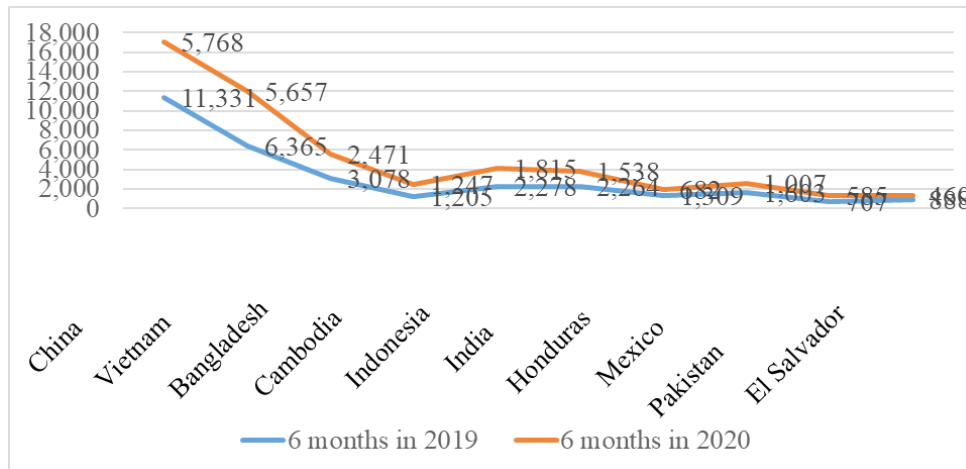


Figure 3: Top ten countries apparel exports to US in 2019 - 2020

US\$ million

Source: author based on OTEXA’s data

Obviously, the SAR-Covid 19 pandemic has certain affect to apparel exports of all countries in the world, especially apparel exports to the United States. According to the data in the above figure, all of the top ten countries apparel export to US decreased export value in six months of 2020. Vietnam alone decreased by 700 million USD, equivalent to 11% over the same period in 2019.

2.2. High volume but low value

As mentioned in figure 1, Vietnam’s apparel manufacturers play mostly as subcontractor and tier 2, 3 supplier, so their main activities are weaving, embroidery, trim, dyeing, and apparel manufacturing which also are least economic value in global value chain. These activities also are the least value added in apparel value chain. The higher value added steps mostly belong to foreign brands, buying agent or even tier 1 suppliers.

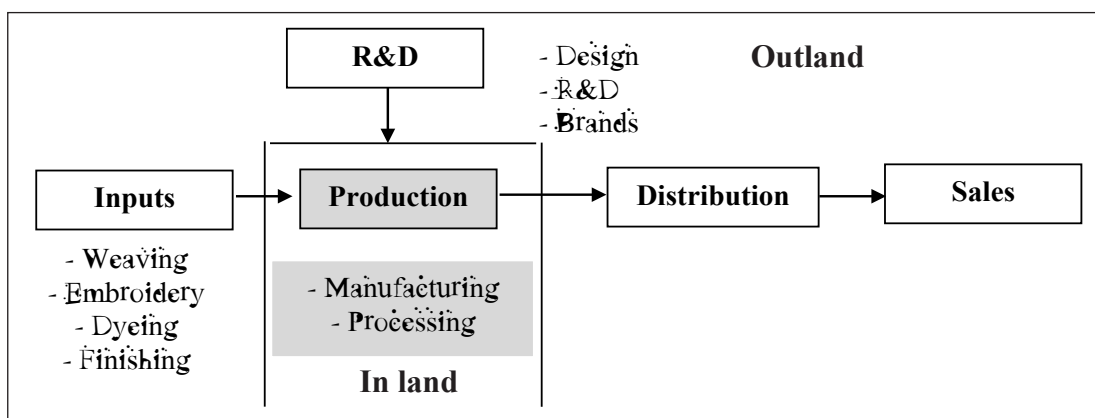


Figure 4: Vietnam’s apparel value chain

Source: author

The apparel value chain reflects the archetypal “smiling curve” of Stan Shih, where the lead firm, buyer take the greatest economic value and the least value is belonged to assemblers and manufacturers (Shelvy Arifin, 2017). Economic value addition depends on the model of supply chain organisation, which can be called export position in global apparel chain. There are four main categories of apparel production that refer to export position of manufacturers including CMT (Cut-Make-Trim), OEM (Original Equipment Manufacturing), (ODM) (Original Design Manufacturing) and OBM (Original Brand Manufacturing).

Vietnam’s apparel factories mostly produce in CMT and OEM contract. Even in OEM contract, Vietnamese manufacturers does not necessarily keep the actual apparel production in house. They may subcontract out the labor-intensive activities such as cut, make, trim to a network of second- tier supplier factories as Vietnamese manufacturers. Normally, processing unit price is 25 percent of export value and only 1 - 3 percent of after-tax profit. For FOB contracts, enterprises are responsible for importing raw materials and producing orders, enterprises receive about 30 percent of export value and net profit is about 3 - 5 percent of net sales. For ODM contracts, enterprises are responsible for designing, profit after tax is about 5 - 7 percent. Thus, for Vietnamese apparel enterprises turnover was US\$9.4 billion in 2016, assuming average net profit margin of 2 percent (CMT), 4 percent (FOB) and 6 percent (ODM), then their profit after tax was just only US\$ 0.26 billion (about 3 percent of export turnover) (Le Hong Thuan, 2017).

In the context of 65% of Vietnam’s apparel manufacturers produce in CMT contract, 25% OEM, 9% ODM and 1% OBM (Shelvy Arifin, 2017), Vietnam’s apparel manufacturers are in the bottom of the chain. The value added in apparel industry decreased from 20.3 percent in 2006 to 13.2 percent in 2013 (UNIDO, 2015).

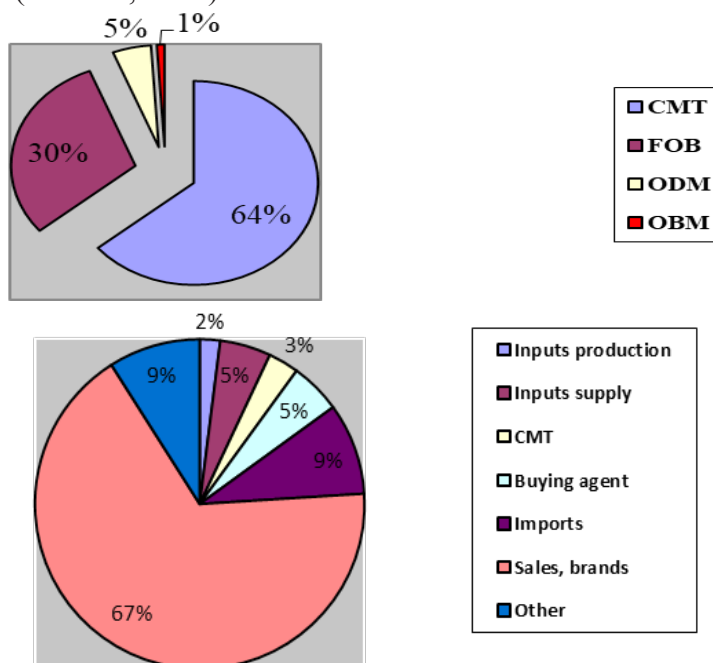


Figure 5: Export position of Vietnamese apparel manufacturers - Value added of each activity for men’s shirts

Source: author based on LeHongThuan, 2017

The above figure relating to the rate of Vietnam's apparel manufacturers classified of export position and value added of each activity for men's shirts demonstrate that Vietnam apparel manufacturers mainly participate in low value added activities, so apparel productions can not reach target of sustainable development.

This situation also demonstrated the case of Vietnam apparel exports to the United States market - the potential market for apparel exports. There are many countries considering US as target market and have strategy to enlarge its share in US market. US's brands and retailers, in turn, step up investment to outsource in developing countries. It is shown in the top five apparel exporters mainly based on advantage of labor to produce apparel, namely China, Vietnam, Bangladesh, Indonesia and India.

The global apparel value chain is organised so that countries that export their own brand names could take the highest unit values, followed by countries that produce in full-backage production without owning brands as ODM-based. Conversely, countries that produce apparel production mainly based on CMT contract could exploit advantage of cheap labor cost by using mass production of low value-added apparel to remain profits.

Moreover, the majority of costs incurred in apparel production are direct cost referring to raw materials. This is particularly the case for CMT suppliers and subcontractors as Vietnam. Low cost are no longer an efficient advantage in apparel export, especially in the context of the fourth industrial revolution (I4.0).

3. GLOBAL APPAREL VALUE CHAIN IN THE CONTEXT OF 4.0 INDUSTRIAL REVOLUTION

3.1 - Global apparel value chain in the context of I4.0

I4.0 will make a new wave of fragmentation which is focusing on service, and is expected to reallocate tasks between developed and developing countries. The use of machines, robots and computers in the production process is expected to diffuse widely into all sectors of the economy. Artificial intelligence, humanoid, mobile and collaborative robots will be further developed and used in small and large firms. This development will continue to replace and transform jobs, particularly in manufacturing sector such as footwear, textile... Global apparel value chain in the context of 4.0 industrial revolution has the following expressions.

Trend of green global apparel value chain

The more global economics develop, the more social, environmental problems increase. In this context, many countries have changed their development strategy to the trend of green economics, green growth. The researchers gave the concept of green economy with three main characteristics, namely friendly to environment reducing greenhouse gas emissions to mitigate climate change; deeply growth with less fuel consumption, enhance the ecological industry, technological innovation; and sustainable growth with poverty reduction and social development. In another words, a green economy is an economy using energy efficiency and natural resources, with low emissions, minimizing risks on the environment and improve social justice (Nguyen Hong Nhung, 2016).

Apparel industry is considered as one of the most environmental pollution sector. In the framework of green economy, concept of green global apparel value chain also be researched.

Thus, green global value chain in apparel industry is the system of activities that execute toward green economy, sustainable development.

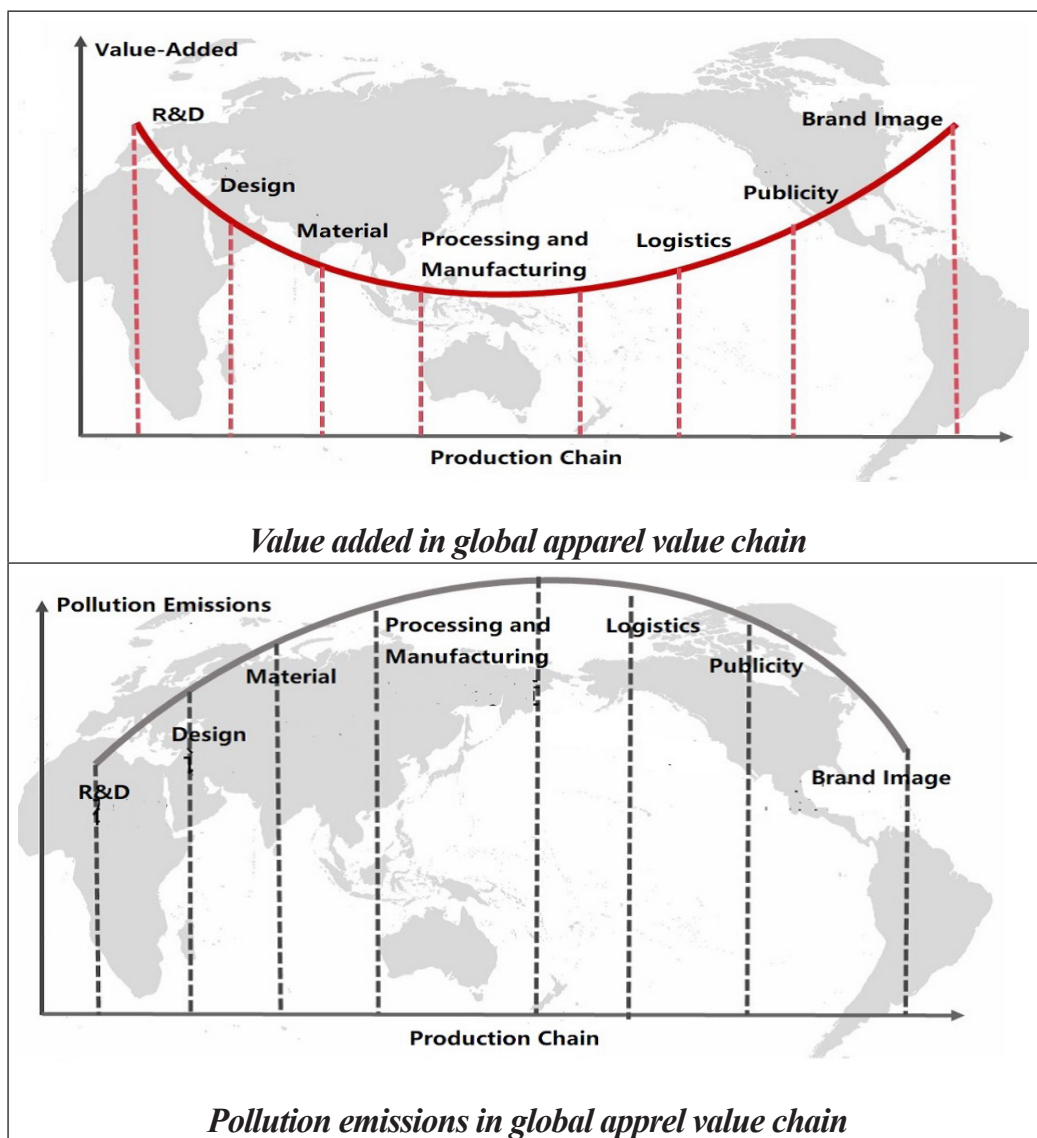


Figure 6: Value added versus pollution emissions in global apparel value chain

Source: UN Environment, RIGVC UIBE, 2017

Value added versus pollution emissions from activities in global apparel value chain. The activity which achieve low value added also pollute more environmental problems (manufacturing and processing), conversely the activity which bring higher value added also friendly to environment (R&D, sales). In words, the low value added activities the more pollution emissions arise. To reach target of greening global apparel value chain, each activity in chain have to balance between value added and pollution emissions.

In I4.0, the application of the digitized management software has allowed countries to easily censor which “green” elements in one apparel products. The aims of “greening” the global apparel value chain will create development of apparel industry more sustainably; however, this is the challenge for apparel manufacturers come from developing economies as Vietnam.

Trend of fast-fashion

I4.0 with online trading have been developing strongly and lead international trade turn into period of fastly growth. Online transactions take place easily, conveniently by increasingly using of many kinds of media as well as many online sales enterprises. This lead the gap in geography between manufacturers as well as between manufacturers and consumers increasingly shrinking. Thus, I4.0 has had a major impact on shaping global apparel value chain under the new trend - the trend of “fast fashion”.

The global apparel value chain on the trend of “fast-fashion” was considered as a inevitability for a product as apparel. This trend is supported by short fashion cycles which require firms to rapidly respond to new fashion trends. Since people want fashionable apparel production immediately and supply chains struggle to keep up, this “speedfactory” (known as smart factory) will shorten this cycle. This trend is formed from two sides, the fashion brands and the consumers. The goal of fashion brands is maximized profits, and from the side of the consumers, it is the need of changing constantly due to much improving live standard.

Trend of “fast-fashion” in global apparel value chain is expressed through increasing of many fashion season in each year. Normally, apparel fashion is divided into two seasons, “Spring/Summer” and “Autumn/ Winter”, but from 2014, the fashion world had 54 “microphone seasons” each year (Cline, 2012). With the aim of boosting consumer demand, world fashion brands has to move the business strategy. Instead of competing with high quality and limited amount of consumption, brands move to compete by speed and price, low quality with large quantities consumption.

At the forefront of this trend is the Zara which produce 10,000 designs every year, launch new collection twice a week on 1,670 of Zara shop in worldwide. H&M and Forever21 which are Zara’s competitors also launch to market a range of new styles, while Topshop also introduced 400 designs on the site each week. Accordingly, the time produced a line of Zara or H & M has changed from 30-45 days to 10-15 days (Le Hong Thuan, 2017). The trend of “fast-fashion” in the global apparel value chain shows the rapid growth of the fashion industry, but this is a race not for sluggish players. It is significantly difficult for apparel manufacturers who participate mainly as subcontractors. Apart from of enlargement scope of producing, they have to face with challenge of improving productivity, decreasing processing fee to meet requirement of fast-fashion.

Online shopping significantly increasing also express trends fast-fashion clearly. On the one hand, this is a good signal of strong development in fashion industry, on the other hand, this is shown unsustainable development arising from social and environment problems. Increasing consumption scale will create a market of “out of fashion”, “old-fashion” market which cause waste, injustice with limited consumption market.

Trend of automation, decreasing of using labor

I4.0 makes differences between a typical traditional factory and an Industry 4.0 factory, called smart factory. In the current industry environment, providing high-end quality service or product with the least cost is the key to success and industrial factories are trying to achieve as much performance as possible to increase their profit as well as their reputation.

In smart factory, collaborative robots augment human tasks, and allow workers to increase productivity by focusing on the more sophisticated non-routine tasks. Those robots will compete with developing countries' workers, therefore, the comparative advantage of low-cost labor is not sustainable, even tend to be decreased. The goal is to increase productivity by automating the full apparel value chain in manufacturing and integrating autonomous robots and computer into a data network that connects manufacturers, suppliers and retailers.

This situation may lead apparel manufacturers in developing countries to decrease labour cost in order to improve attractive advantage, and wages are therefore most likely to suffer from competitive pressures. Research by JETIs, 2015 shows that, 65 percent of supplies surveyed accepted a price that was lower than total production costs per unit because they feared they could lose business. Vietnamese manufacturers are not out of this situation.

Labor in apparel industry is forecasted that be at high risk of automation with the rate of displacement by robot at 64% in Indonesia, 86% in Vietnam and 88% in Cambodia in the next 10 years. In 2025, the world average rate of automation will be increased from 10 percent to 25 percent in all of sectors (Chang, 2016). Relating directly to apparel sector, using of sewbots is likely to be more economical than using labor.

In 2015, sewbots named LOWRY were launched by Softwear Automation Inc could automate fabric handling as sewing machine. That sewbots were built with machine vision and computing technologies can run on a continuous basis without a human operator (Softwear Automation, 2018). Sewbots are prove to be economical such as decreasing labor cost, overhead and other operational expenses. Moreover, additional benefits of using sewbots include reducing human error, increasing workplace safety, consistent quality and stability in output quantity (Chang, 2016).

In fact, Tianyuan (Chinese apparel enterprises) invested sewbots for new factory be built in Arkansas (United States). On each line using of sewbots just need 3 - 5 workers instead of 10 workers, that means number of using labor will decline 50 - 70 percent. In other words, a person who operate sewbots can make volume of shirt each hour equivalent with 17 people can do. So a sewing line can produce 669 shirts in 8 hours, while the chain which use sewbots in Tianyuan can produce 1,142 shirts. That means factory can increase 71 percent output, equivalent with 1.2 million units in a year (DevicePlus, 2018).

Moreover, producing cost also is decreased. Normally, labor cost of a denim shirt is at US\$7.47, but using sewbots decreased that cost at US\$0.33 (DevicePlus, 2018). It is even higher than labor cost in Bangladesh, about US\$0.22, however, producer save shipping and duty cost. This may lead manufacturers who provide apparel production for US brands and retailers to sale also in US market will move factory to US. In fact, Tianyuan built new factory in US instead of in China where is considered having advantage of cheap labor cost. This situation may appear in the case of Vietnamese apparel manufacturers, especially advantage of labor would be decreased in global apparel value chain.

4. CONCLUSION

Success in increasing Vietnam's share create popularity image of "Made in Vietnam" apparel products in whole world. But sustainable development in apparel industry has been a big problem

that government, related agency, especially manufacturers have deeply paid attention since many years. Improving to a higher position in global apparel value chain becomes extremely importance in the context of I4.0. Higher position means higher gains in global apparel value chain which are prerequisite conditions for sustainable development in the future, especially catching up with I4.0 requirements.

In the framework of global apparel value chain, I4.0 creates new changes in producing process, logistic, distribution and retailing. In another words, I4.0 focuses on service activities in global apparel value chain and these are developed countries' advantages. Once again, I4.0 makes more facilitation for developed countries than developing countries.

In my opinion, there are four main problems that Vietnamese apparel manufacturers will face and need to find out solutions to improve participation capability in global apparel value chain in the context of I4.0.

Firstly, maintain advantage of labor through increasing productivity, labor skill as well as labor discipline

In Vietnam, apparel production is strongly characterized by low-skill and labor-intensive production. Given that the bulk of salaries jobs in the apparel industry (such as cutting, packing machine operators) require completing extensive routine and manual tasks. This requirement could make the large share of apparel workers to be at high risk of automation totally.

Textile, clothing and footwear are three industries that tend to be highly susceptible to technological substitution. In Vietnamese apparel industry, women are more likely than men to be employed in an occupation at high risk of automation. In ASEAN-5 (including Thailand, Philippine, Indonesia, Cambodia, Vietnam), the highest odds for women are in Vietnam, where their probability of being in a high risk occupation is around 2.4 times as high as their male counterparts (Chang, 2016).

Apparel is labor-intensive product, if evaluating on aspects of labor-intensive and low-skill production in apparel production, Vietnamese apparel manufacturers still maintain comparative advantage in short and mid terms. So Vietnam's labor advantage can continue to be promoted. Vietnam is chosen as the location for building apparel factory mainly depending on cheap labor cost, so foreign investors will not have to consider using of high tech machines into production, even robots, artificial intelligence or IoT. Foreign investors may replace some fragmentations that using unexpensive machines, therefore, small amount of Vietnamese apparel workers may be at risk of automation. However, the low risk of automation may occur with apparel productions that are cheap or medium quantity. If Vietnamese apparel manufacturers want to take part in segments of high quality apparel, the situation will be different.

Moreover, I4.0 requires a highly disciplined workforce and encourages the liberal thinking of the workers, limited discipline as well as less educated workers can not meet that requirement. Less educated workers face higher automation risks. For workers who owns only a primary degree or less, the probability of being at high risk of computerization is 10.3 percent higher than workers who graduated from secondary school. In Vietnam, around 75 percent workforce do not have secondary degree and those workers face higher automation risk than others. Moreover, in

Vietnam, high-skill employment as a manager, professional or technician exceed 10 per cent, while this ratio in Thailand is 14 per cent and in Philippines is 20 per cent (Chang, 2016).

The solution for this situation is improving labor skill and labor discipline. The quality of labor resources in the apparel industry of Vietnam is weak and has a considerable distance compared to other countries in the same region and in the world. Reasons for this problem could be analyzed as the following figure 8.

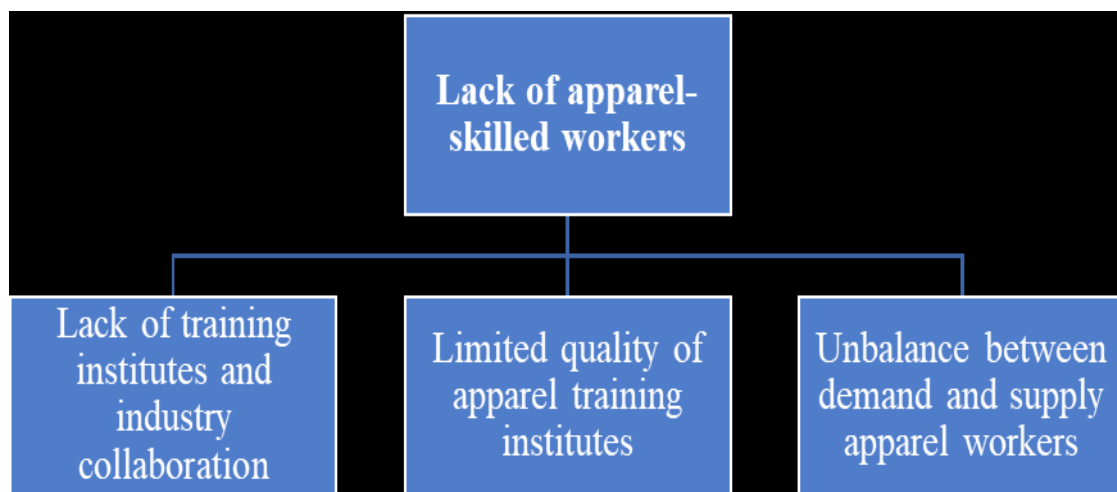


Figure 7: Problem tree analysis for labor in Vietnam apparel industry

Source: author based on Dang Tan Duc, 2016

The key party for solving the above problem is owner's apparel factories. Suggested measures for owner's apparel factories to improve labor skill and labor discipline of apparel workers as following:

i). Businesses need to have a separate policy in attracting, using qualified and discipline labor such as salary, bonuses, and social benefits. If the business does not have the remuneration policy for qualified and good working discipline workers, they have no working boost to create competitive advantage for enterprises;

ii). Businesses need to spend a parts of profit to invest in improving the qualifications of workers. In addition to the training programs in businesses, excellent workers have to be trained in specialized training apparel facilities. These specific commitments between enterprises and these workers will create good conditions in upgrading apparel-skilled levels;

iii). Businesses need to apply popularly advanced management methods such as Lean, 6 Sigma, Just In Time to increase apparel workers' discipline. These advanced methods would be a good model for managing apparel workers towards improving labor productivity as well as labor discipline. If apparel workers have limited awareness of labor discipline, the application of these advanced methods will contribute to raise their awareness and put pressure on them to change their sense of discipline.

Secondly, increasing competitiveness of local apparel manufacturers

Economic value from apparel export depends on the owners of factories involved directly in the global value chain. While almost two-thirds of apparel manufacturers are local manufacturers, but

FDI manufacturers are the main players in apparel exports with their share of total apparel export value was at 76.6 percent. The foreign-owned firms dominate the first tier suppliers while local apparel manufacturers make up approximately three-quarters (75%) of the second tier suppliers and subcontractors (Do Quynh Chi, 2017). This is shown that local apparel manufacturers have less competitiveness compared with FDI ones. Available resources such as capital, human, technology, especially close relationship with fashion brands, retailers create considerable advantages for FDI apparel manufacturers.

Vietnam's apparel manufacturers are mostly medium and small-size, unskilled workers, low technology. Their expectations are mainly towards maximize monetary benefits immediately despite of unsustainable development. "Higher position" is not their own problem, because exploiting advantage of cheap labor is enough to bring acceptable profits for them. In other words, these local manufacturers are satisfied with the current export positions in global apparel value chain.

Therefore, Vietnam government and related authorities namely Ministry of Industry and Trade, Vietnam Textile and Apparel Association, Vietnam National Textile and Garment Group have to focus on large-size local apparel manufacturers, especially equitized enterprises as flagships manufacturers to increase competitiveness of local apparel ones. Vietnam's large-size apparel manufacturers have available resources such as capital, human, technology to improve export positions through participation of higher value-adding activities in global apparel value chain.

Besides increasing apparel exports, local manufacturers have to increase their share in domestic market because requirements of domestic consumers are suitable for local manufacturers' capacity in both quality and quantity. Moreover, local manufacturers need to exploit FTAs relating to apparel production, particularly AFTA, free trade agreement with China, India, Korea to export through ODM or OBM contracts. If it is extremely difficult for local manufacturers to upgrade chain by changing export position in US, EU market, local manufacturers could choose neighbour markets in ASEAN, China or Korea as target market to improve export position.

Experiences from sales apparel in domestic market as well as exports to neighbour markets would be useful for upgrading export position of Vietnam apparel manufacturers in global value chain. On that basic, Vietnam apparel manufacturers could lead medium and small-size domestic apparel manufacturers participate in global apparel value chain. Large-sized apparel manufacturers in Vietnam have to play important role in executing strategy of improving competitiveness of local manufacturers.

Thirdly, promptly form apparel cluster in places which have advantages to develop textile and apparel productions.

Some provinces in Vietnam such as Hung Yen, Dong Nai or some traditional trade villages have strong cooperation between producers, suppliers, traders. It is embryonic signs of textile and apparel cluster formation. Textile and apparel clusters have strong competition than one apparel company individually, and could create higher position in the value chain. Vietnam government, related agencies and apparel manufacturers have to hasten formation apparel cluster process in the mentioned provinces. Textile and apparel clusters as quickly formed the economic efficiency from production-export apparel as soon achieve.

Due to unsatisfying the requirements of labor quantity, Vietnam apparel manufactures mostly participate as the second-tier. To be the first-tier of production, apparel factories usually have the number of employees in the range of 500 - 1,000, but the average export apparel factory size in Vietnam is just 255 workers (Jones, 2013). Forming of apparel cluster could solve this challenge efficiently.

Moreover, experiences in many developed apparel industries such as China, Korea etc are mostly based on formation and development of apparel cluster which is a complete network from textiles to apparel. This has increased ability to participate in the higher value activities in global apparel value chain, and strengthened competitiveness of local apparel manufacturers.

Apparel cluster is strongly concentrated on a specific location which have advantages of development apparel industry such as convenient traffic, close inputs resources as well as other involved factors create high competitiveness for apparel manufacturers. Meanwhile, this tight cooperation also increases position of Vietnam apparel manufacturers in negotiating with foreign partners, particularly global fashion brands and retailers.

Currently, apparel cluster has been formed through development of industrial zones which concentrated many apparel factories (Binh Duong, Dong Nai, Chuong My, Hung Yen). Although these industrial zones have not dedicated with apparel industry, but they have built competitive advantage based on geographical link. This is a positive signal for the initial formation of apparel cluster.

Vietnam export positions are mainly CMT and FOB contract, so formation of apparel cluster has shown characteristics of satellite model. This model limits the ability to participate in high value activities and brings low economical value, in which apparel MNCs play significant role as lead firms in global apparel value chain. Relying on apparel MNCs is inevitability for Vietnam apparel manufacturers because there are no any Vietnam apparel ones that has enough capacity to become a mainstay for other medium and small-sized factories. Therefore, it is crucial to develop one or some well-reputation apparel manufacturers with high competition to create as "axle" role in apparel cluster (kind of wheel - spokes apparel cluster). In my opinion, some local apparel brands as AnPhuoc, VietTien, PhongPhu... which have had good reputation and participation in higher export position such as ODM in export markets and OBM in domestic market are suitable options for this issue.

Fourth, improving social and environmental problems in industrial zone focus mostly on apparel manufacturers

This solution is belonged to management authorities namely Ministry of Planning and Investment, local government, local investment department. These offices play orientation role for apparel manufacturers having suitable development strategies. And social and environmental issues have to be included in those strategies.

There were many strikes against low social welfare, bad working conditions be headed by apparel workers in many industrial zones. In 2016, 40% of strikes in Vietnam were come from apparel and footwear manufacturers (H.Hoa, 2016). Boring life after working plus low education lead to many social evils arising from industrial zones where concentrated many apparel factories. In order to solve this problem, local authorities need to build relationship between apparel manufacturers with local agencies such as schools, colleges and form social organisations in

apparel manufacturers such as labor union, working youth union. These activities may create wholesome life environment for apparel workers, and then decrease social evils.

Moreover, favourable working conditions and friendly environment production lines show in executing standard of corporate social reponsibility in apparel manufacturers. In case of Vietnam, the best way to improve working conditions and production lines is applying international requirements and standards such as SA8000, ISO14000... Seriously complying with these standards creates more opportunities for apparel manufacturers to participate in global apparel value chain widely and deeply./.

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SUSTAINABLE DEVELOPMENT OF SMALL AND MEDIUM ENTERPRISES IN VIETNAM IN THE CONTEXT OF GLOBALIZATION

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Abstract. Nowadays, globalization and international integration have become the common trend of all countries and sustainable development is a global trend. The content of sustainable development is always completed in association with the level of economic development and international integration of countries. Globalization has expanded the "soft frontier" space, creating opportunities for all developed countries including Vietnam, so that goods, services, currencies and investment capital of other countries can circulate and rotate on a global scale and SMEs thus have increasing opportunity to participate in the global value chain. Therefore, this paper aims at finding the answer for the question of how to sustainably develop Vietnamese SMEs in the context of globalization. Using qualitative research method, the study summarizes the situation of development of Vietnam SMEs and then proposes 8 strategy solutions for SMEs themselves and 6 policy solutions for government in sustainable developing SMEs.

Keywords: Sustainable development, small and medium enterprises, globalization.

1. Introduction

Small and medium enterprises play a huge role in the economic growth of many countries or regions, including in developed and developing countries. Small and medium enterprises operating in all sectors of the national economy from industrial production, construction, trade, service ... to meet increasingly diversified and rich demands of consumers.

In economies with different development characteristics, the role of SMEs is shown to different degrees. But the reality shows that the importance of small and medium enterprises is growing when the scope of activities is expanding, reflected through the number of businesses, activities in many industries, fields and existence. as an indispensable part of each country's economy.

First, small and medium-sized enterprises create jobs for workers, contributing to reducing unemployment. Because SMEs participate in business in all industries and sectors of the economy with a wide variety of products, they can secure job opportunities for many different types of workers in different regions. On the other hand, because production and business characteristics do not require high qualifications, they can also employ workers in remote, underdeveloped and underdeveloped regions. Especially when the economy falls into recession, while large enterprises often have to lay off workers to cut costs, SMEs, with their flexibility and dynamism, can adapt quickly. With the volatility of the market, it is possible to stand firm without cutting workers, or can quickly re-engage the workforce when the economy goes into a cycle of recovery.

Second, SMEs play an important role in stabilizing and promoting economic growth. In most economies, SMEs are subcontractors to large firms. Adjustments to subcontracting at times allow for a stable economy. Therefore, SMEs are considered as shock absorbers for the economy in the face of great fluctuations. With the advantages of low investment capital and abundant labor force, in recent years, SMEs have grown rapidly and accounted for an increasingly large share of the total number of enterprises. SMEs provide the market with a variety of products in all sectors of the economy, creating many choices, meeting all consumers' needs, thereby promoting consumption of the economy. Therefore, the contribution of SMEs to the total output of the economy is very large.

Third, small and medium enterprises exploit and promote local resources, contributing to economic restructuring. In the economy, there are always remote areas, underdeveloped areas, with unfavorable natural conditions or underdeveloped infrastructure. If the economy only exists with large enterprises, which tend to be concentrated in cities, towns and industrial zones without small businesses, there will be an imbalanced development between regions, not making full use of national resources, reducing the efficiency of the economy. Meanwhile, with small investment capital, compact and easy-to-start organizational structure, SMEs can participate in many markets to exploit their potentials and strengths in land, resources and labor of each region, especially the agriculture - forestry - seafood industries and the processing industry. SMEs are also the most active actors in the maintenance and development of traditional industries such as bamboo, rattan, ceramics, textiles and soon. Therefore, it can be said that SMEs play a very important role in the work. Rural industrialization and modernization contribute to narrowing the development gap between urban and rural areas, at the same time promoting the development of trade, service and small business sectors, contributing to economic restructuring.

Fourth, small and medium-sized enterprises drive a dynamic economy. An economy that puts an excessive proportion of resources and labor into large enterprises will be sluggish due to its large scale leading to cumbersome management with slow business decisions. In contrast, with an appropriate proportion of small-scale, easy-to-adjust businesses, the economy will become more dynamic, flexible, adaptable to market fluctuations, to catch up with the trend of world economy.

This paper aims at finding the answer for the question of how to sustainably develop Vietnamese SMEs in the context of globalization.

2. Current situation of development of Vietnam SMEs

SME development is a process of quantity growth, associated with restructuring, changing the internal structure of SMEs towards progressing, increasing the capacity and performance of SMEs as well as the contribution of SMEs in the economy, which must be suitable with the level and development trend of the integration market economy, the Industrial Revolution 4.0 and the knowledge economy.

In Vietnam, SMEs play an important role in economic growth and development. Annually, SMEs contribute nearly 50% of GDP, 41% of state budget revenues, creating job for 63% of labor force. In recent years, the number of Vietnamese enterprises has increased rapidly: in 2012, there were 342,000 enterprises, of which SMEs accounted for 96%; in 2017, there was an increase of 51.4% with 517,900 enterprises; in 2018, the country had 715,000 businesses and by April 2020,

847,300 enterprises, of which SMEs accounted for 98.1%, along with other 5.3 million individual household businesses. However, along with the increase in the number of newly established businesses, the number of dissolved or ceased operations businesses is also very large. Specifically:

Number of newly-established, dissolved and ceased operation enterprises in the period 2012-2019

Year	Newly established enterprises	Dissolved enterprises	Ceased operation enterprises
2012	69.874	59.370	13.900
2013	76.955	60.737	14.402
2014	74.842	67.823	15.419
2015	94.754	80.858	21.506
2016	110.100	73.145	26.689
2017	126.859	72.666	26.448
2018	131.725	93.879	31.869
2019	132.300	28.200	21.200

Among the enterprises operating in the economy: large enterprises account for 1.9%, medium enterprises 23.1%, small and micro enterprises 74%. Although the number of enterprises has increased sharply, the SMEs sector is facing many challenges, because while there is a shortage of large and medium-sized enterprises, small and micro enterprises account for a large proportion (74%), which affects the competitiveness of Vietnam's enterprises and goods.

In the period of 2012-2018, enterprises and SMEs increased rapidly in number and at the same time restructured themselves in the direction of progress. Facts and figures in comparison between 2018 and 2012:

In terms of enterprise type: the number of state-owned enterprises decreased by 18.4% (down 4%/year) and labor force decreased by 23.1% (down 5.1% / year); The number of FDI enterprises increased by 54% (up 9%/year) and labor force 62.8% (up 10.2% / year); The number of non-state enterprises increased by 52.3% (up 8.8%/year) and labor force 27.9% (up 5%/year). It can be seen that the FDI enterprises section had the fastest increase and attracted most workers.

In terms of capital structure: Among the total capital of the whole enterprise sector: State enterprises accounted for 28.4% (equity ratio: 23.2%, debt capital 76.8%); FDI enterprises 18.1%, (equity ratio 39.6%, debt capital 60.4%); Non-state enterprises 53.5% (equity ratio: 30.7%, debt capital 69.3%). Therefore, the ratio of equity / debt of the SOE sector is the lowest.

From February 2020 until now, most SMEs in all fields and economic sectors of our country have been affected by the Covid-19 pandemic. In particular, SMEs in the tourism and service sectors are most affected because tourists from China, South Korea and Japan account for nearly 40% of those travelling to Vietnam. Industrial production enterprises participating in the value chain are also directly affected, because 50% of export turnover and 30% of import turnover depend on 3 markets of China, South Korea and Japan. This makes it difficult for Vietnamese SMEs to grow, even cease operation or dissolve.

Thus, SMEs have made important contributions to socio-economic development, becoming a

driving force for Vietnam's economy to grow continuously for many years. However, the efficiency and competitiveness of SMEs remain low, the growth has not been sustainable, and the number of enterprises ceasing operations and dissolution is still high. At present, sustainable development of SMEs is facing obstacles such as land, capital access, tax and administrative procedures and the current covid-19 pandemic. Recently, the Government has implemented many drastic measures to remove "barriers" to improve the business environment for SME development. With the motto "Government accompanying enterprises", many administrative procedures "binding" SMEs have been removed, many programs to support SMEs have also been implemented. In the context of globalization, drastic measures are needed for the sustainable development of SMEs.

3. Solutions for SMEs sustainable development in the context of globalization Need a section to describe the qualitative method used

After more than 33 years of the country's renovation and development of a socialist-oriented market economy, Vietnam has now become more and more deeply integrated into the global economy. Vietnam now has diplomatic and economic relations with over 200 countries, be responsible member of various international and regional organizations, signed 16 bilateral and multilateral free trade agreements, including new generation free trade agreements. International integration has been helping Vietnam expand its market, attract investment capital sources, acquire science and technology and "enjoy" opportunities from free trade agreements for developing enterprises and SMEs. However, the deeper and deeper international integration also made Vietnamese enterprises and products facing the challenges of fierce competition in both domestic and foreign markets, because Vietnamese SMEs have low management and technology level, limited financial capacity while they have to compete with large enterprises possessing high technology, strong financial potential, branded products of other countries. Currently, Vietnamese enterprises only participate in global value chains in stages of processing and assembly with low technology. In the context of globalization, there must be specific solutions from SMEs and the Government to attain sustainable development, specifically:

**** Firstly, solutions from SMEs themselves***

Sustainable SMEs development is a development that ensures the goals of economic efficiency associated with progress, social justice and environmental protection. In order to achieve that goal, Vietnamese SMEs need to select and build core competencies focusing on the areas where businesses can do their best to select products or market segments in order to make optimal use of their resources. Therefore, SMEs need to:

- *Define the right business goals:* In a market economy, the investment objective of an enterprise in an area or a product is profit, revenue, and payback period. For sustainable development, businesses need to determine which sectors products to invest in order to achieve the highest efficiency. Determining the right investment field and making the right investment decision will help businesses develop sustainably.

- *Build an effective business management system which is a sustainable development solution for SMEs.* The corporate governance system is the mechanism that operates businesses from the responsibility, coordination, decision-making method, principles of using resources to the relationships inside and outside the enterprise to ensure the operation of the system to be effective

and rhythmic in the right direction of strategy. In the corporate governance system, financial management capacity plays an important role in helping businesses optimize capital allocation, which help improve efficiency in each project. Therefore, SMEs need to improve the operational capacity of the standard financial accounting system, cash flow management capacity, and determine an appropriate financial structure. On the other hand, in order to win the competition with large enterprises, Vietnamese SMEs need to improve labor productivity, increase the efficiency of investment capital, and effectively use financial leverage.

- *Build the corporate culture, considering the corporate culture as the core and the foundation of SMEs sustainable development.* Nowadays, “culture should be put on par with the economy”, the corporate culture becomes the root for creating the brand of each enterprise. For sustainable development, enterprises need to put the core values into the corporate culture. The reason is that, in modern economy, the value of a product sold to customers is not simply only equal to the price minus the cost but is also defined by the life cycle of the product. If a product is used for countless times by customers, the profit of the business will be gross profit.

- *Brand businesses and products.* In a globalized economy, a brand has become an asset, an intangible capital of every enterprise. Value and reputation of the brand play an important role to increase revenue, profits, and added value for businesses while accounting for an increasing proportion of the enterprise value. Therefore, businesses need to pay attention to developing and protecting enterprises’ brand names and products to increase enterprise value in order to develop sustainably.

- *Constantly innovate and create measures for sustainable development.* In the context of globalization and the impact of industrial revolution 4.0, innovation and creativity are vital conditions for enterprise development. For SMEs, innovation and innovation are not only creating new products and new technologies but also changing the way of exchanging activities between enterprises and customers, customer care services, and ways of communication among employees inside and outside of the business.

- *Enhance the application of technological advances to business activities.* In a globalized economy, when new generation of free trade agreements are implemented, it is a must for SMEs, in order to survive and develop, to promote innovation, apply technological advances in business activities so as to raise the intellect in product value, create various new products of high quality, increase productivity, make rational use of materials,... Applying advanced technologies would help improve competitiveness, expand markets, develop sustainable business and production, which is the right direction of SMEs in the context of globalization for sustainable development.

- *Actively participate in the value chain.* Vietnam’s SMEs are also an important link in the value chain to enhance competitiveness. However, due to the small scale, SMEs have not been able to accumulate and concentrate capital to expand investment, technology innovation, and rapidly increase production scale rapidly. Currently, the linkage between SMEs themselves as well as between small and large enterprises is inconsistent which have negative effect on the participation in the value chain of enterprises. Currently, only approximately 21% of Vietnamese enterprises participate in the global value chain. When participating in the value chain, Vietnamese SMEs will benefit from technical assistance, technology, management, market, human resource training, etc. from strong enterprises in the chain, thus increasing opportunities for sustainable development.

- *Diversify material supplies and product consumption markets for sustainable development.*

In the context of globalization, issues of economic recession, epidemics, instability ... are global. Diversifying material supply and consumption markets will help SMEs reduce negative impacts on their business operations. The lesson learned from the Covid-19 pandemic where many Vietnam's SMEs were badly affected was that Vietnam heavily depends on China, Japan, and Korea for material supply, and more than 40% of the market share of SMEs exporting goods is to China and Japan. This is a confirmation that in order to gain sustainable development of SMEs, it is necessary to diversify material import and export markets.

*** *Secondly, Government's solutions for sustainable development of SMEs***

Sustainable development is the development where economic efficiency, social justice, conservation and preservation of the ecological environment must be ensured. With this criterion, globalization has a double impact on sustainable development in Vietnam, by providing both opportunities and challenges. Therefore, for sustainable development, we need to take advantage of opportunities, reduce challenges and turn challenges into opportunities.

Sustainable development of SMEs must be associated with the overall development of Vietnam's economy. It is a development that meets both current needs, but in the meantime, does not affect or harm the ability to meet future needs. In order to sustainably develop SMEs, in addition to SME's efforts to reform, the Government should:

- *Actively improve the business and investment environment for SMEs.* A motivated equal investment environment would create opportunities for SMEs to access and benefit resources for development. In recent years, in order to sustainably develop SMEs, the Government has made constant efforts to improve the investment and business environment through completing the legal framework for business activities with innovative ideas of "Government accompanying enterprises.", aiming to serve businesses, promoting administrative reform, improving the service quality of governmental agencies and authorities at all levels to businesses, eliminating all barriers, ensuring equality and freedom to do business for enterprises. The Government issued and implemented: Resolution No. 75/NQ-CP (dated August 2nd, 2015) (see [6]) on reducing costs for businesses, Resolution No. 19/NQ-CP (dated October 2016) (see [7]) on business environment and national competitiveness improvement, Resolution No. 35/NQ-CP (dated May 16th, 2016) (see [3]) and Directive No. 26/CT-TTg (dated April 4th, 2018) (see [1]) on supporting and developing enterprises to 2020, the Law on Supporting SMEs taking effect from January 1st, 2018 ... This is a significant step in completing the SMEs support policy and is expected to create a "kick-off" for sustainable development of SMEs in coming future.

- *Innovate and apply advanced technology to sustainably develop SMEs.* In order for SMEs to develop effectively and sustainably, becoming an important driving force of the socialist-oriented market economy, contributing to restructuring the economy and renewing the growth model, the Government has made a breakthrough in technology associated with improving technology capacity of enterprises in the context of the industrial revolution 4.0. The application of advanced technologies such as cloud computing, sensor technology, artificial intelligence, analysis and data management ... has helped businesses quickly master new products and services as well as new methods of doing business, thus improving efficiency and competitiveness for sustainable development.

- *Improve the competition regime and protect property rights* to increase the motivation for investing in human, capital and technology, contributing to improving labor productivity. The Government should take measures to improve the ranking position on enhancement of equal investment and business environment in line with the criteria set out by reputable international organizations. Moreover, restructuring the industry with a focus on developing higher technology products, saving energy and being environmentally friendly is also another measure of the Government to facilitate sustainable development of SMEs in Vietnam.

- *Effectively implement the National Brand Program*. The Vietnam National Brand Program aims at building Vietnam's image and Vietnamese products with the values of "Quality - Innovation, Creativity - Pioneering Capacity" to sustainably develop enterprises. The Government stipulates the support for SMEs to build their brand development capacity through training, consultancy and advertising activities in order to improve their business operations and product competitiveness for sustainable development.

- *Encourage building and developing the corporate culture for the sustainable development of SMEs*. Decision No. 1846/QĐ-TTg dated September 26th, 2016 (see [5]) of the Prime Minister, stipulating the date of November 10th each year as the day of Vietnamese Corporate Culture to affirm the role, position and importance of corporate culture. This helps raising awareness of the business community on corporate culture, promoting the building and development of corporate culture; It also create the legal supreme environment for businesses, promoting business ethics, social responsibility and healthy competition. The Government's interest in building corporate culture aims to support SMEs and businesses to develop sustainably, thereby contributing to the country's sustainable development and international integration.

- *Support resources for SMEs for sustainable development*. In a globalized market economy, SMEs are more vulnerable due to their small size compared to large enterprises when there are economic and political fluctuations. This is evidenced by the impact of the Covid-19 pandemic, causing many SMEs to be seriously affected, requiring government assistance to "save businesses" and "save the economy". Government's support for SMEs is provided through tax tools (reduction, extension and tax exemption), loan interest rate support through commercial banks or preferential loans through social policy banks, reduce rent, reduce (or exempt) SME's contribution to social insurance, health insurance thereby helping SMEs to develop.

The above solutions are closely correlated and should be launched together, aiming to create favorable conditions to promote the sustainable development of Vietnamese SMEs.

References:

1. Directive No. 26 / CT-TTg dated 6/6/2017 of the Prime Minister.
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3. Resolution No. 35-CP dated May 16th, 2016 on supporting enterprise development.
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EXAMINE THE EFFECT OF INTERNAL CONTROL ON VIETNAMESE BANKS' PERFORMANCE: CASE AT STATE-OWNED COMMERCIAL BANKS

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Abstract: *Sharp increases in the price of oil are generally seen as a major contributor to business cycle asymmetries. Moreover, the very recent highs registered in the world oil market are causing concern about possible slowdowns in the economic performance of the most countries. In this paper a Pooled Ordinary Least Square model has been considered for some Southeast Asia countries in order to study the direct effects of world oil price shocks and real interest rate on inflation. Our results can be summarized as follows: For seven Southeast Asian countries including Vietnam, Thailand, Indonesia, Malaysia, Myanmar, Philippines and Singapore, world crude oil price and real interest rate both have statistical significant negative impact on inflation.*

Keywords: World oil price, real interest rate, inflation, POLS.

1. Introduction

Sharp increases in the price of oil are generally acknowledged to have important effects on both economic activity and macroeconomic policy. In particular, the very recent highs registered in the world oil market are causing concern about possible slowdowns in the economic performance of the most developed countries. Thus, not surprisingly, a considerable body of economic research has studied the channels through which oil price shocks influence economic variables. Several economists have offered a number of theoretical explanations to account for the inverse relationship between oil price changes and the level of economic activity. The most intuitive justification is that oil price shocks are indicative of the increased scarcity of energy. Because high energy costs lower firms' profits they, normally reduce the willingness to purchase new capital goods; however, if the increase in energy prices looks to be permanent, firms might decide that it makes sense for them to invest in more energy-efficient capital, moderating the decline in their capital spending. Hence, in the long-run high energy costs may induce firms to reduce their investment in new capital or cause the existing capital stock to become economically and technically obsolescent. Therefore, there could be a reduction of the productive capacity of the economy of industrialized countries. Moreover, if consumers expect a temporary rise in energy prices, they could decide to save less or borrow more, causing a fall in real balances and a further increase in the price level. Another channel through which oil price shocks could influence economic activity is the income transfer from oil importing countries to oil-exporting nations. Rising oil prices can be thought as a tax levied from oil-exporting countries to oil-consumers. In the long-run, although the resulting reduction in domestic demand should be partly offset by the export demand from the foreign recipients of

the income transfer, nonetheless, in net terms, there will be a negative impact on the consumer demand for goods produced in the oil importing nations. In the short-run, however, consumers may be reluctant to cut non-energy spending below a accustomed level, leading them to reduce saving rather than spending. A third explanation is related to the concept of 'real balance' effect. Increases in oil prices not only slow economic growth, but also cause inflation to increase. Higher prices for crude are followed, almost immediately, by increases of oil products, such as gasoline and heating oil, used by consumers. Moreover, as people may try to substitute oil with other forms of energy the price of these alternative energy sources could increase as well. In addition to this direct effect on inflation, there could be an indirect effect due to the behavioral responses of firms and workers (second round effects). While the former could pass on their increased costs of production in the form of higher consumer prices for non-energy goods or service, the latter could respond to the increase in the cost of living by demanding higher wages. In this case, a reduction in real money balances has negative effects on household wealth and, consequently, on consumption and output. Moreover, there will be a 'liquidity preference' effect, as people tend to rebalance their portfolios towards liquidity. If the monetary authorities fail to meet growing money demand with an increased money supply, real balances will decrease and interest rates will increase.

Additional explanations of the effects of oil price shocks include adjustment costs, investment under uncertainty and the behavior of monetary authorities. Rising oil prices are usually amplified by the adjustment costs that could arise from the production technology embedded in the capital stock and short-term rigidities. After an increase in energy prices, firms would move from energy intensive to energy-efficient sectors; since these adjustments cannot be achieved quickly, there will be an increase in unemployment and an underutilization of resources (see, for example, Pindyck and Rotemberg, 1983). Furthermore, oil price shocks have the effect to temporarily reduce aggregate output due to sectoral shifts. Davis and Haltiwanger (2001) offered evidence of the effects of oil price change on U.S. manufacturing jobs. Lee and Ni (2002) showed that all sectors are not equally affected by the oil shock. More important, they find that the severity of these adverse effects of oil shocks is not correlated with the energy intensity of the sector. Other authors (for instance, Bernanke, 1983; Van Soest et al., 2000) have underlined the importance of uncertainty, since in periods characterized by oil price volatility firms have an incentive to postpone investment decisions.

Several economists (Tatom, 1988, 1982; Bernanke et al., 1997) indicate the monetary authority behavior as a possible explanation for the economic effects of oil price shocks. In conformance with the monetary authorities' dual mandate to promote high employment and price stability, monetary policy would ideally respond in some measure to both the recessionary and inflationary effects of oil price increases. On the one hand, monetary policy makers could focus exclusively on the initial impact of the shock on inflation rate. Given the initial oil price shock, an increase in interest rates would have the effect to stabilize overall, or core, inflation rates but at the cost of a reduction of demand. Moreover, assuming sluggish prices in their response to changes in unemployment, this approach could induce large increases in unemployment from the shock. On the other hand, monetary policy makers could give importance to the demand-reducing effect of oil shocks and try to stabilize output growth. Central banks would react with a reduction in interest rates which could temporarily offset the losses in real GDP.

The risk from this approach is that there could be a direct effect on prices. In this case, however, the continuing inflationary potential from the oil price shock would not be reduced. In this case, the analysis is complicated by the fact that oil price increases affect potential production. We have seen that, after an oil shock, the more energy-intensive parts of the real capital in the economy become obsolete and take time to be replaced. In this case, inflationary pressures will be higher. Therefore, relatively tighter monetary policy is needed to bring inflation back to its target level. The effects of oil price increases on potential production will become visible only after some periods.

Because different factors tend to affect policy, whether to ease or tighten monetary conditions following an increase in energy prices actually depends on how policymakers balance the risks of a higher unemployment rate or inflation rate. A policymaking approach somewhere between these two extremes has, therefore, been proposed. Monetary policy, for example, could try to keep overall nominal income on a steady path ('nominal income targeting'). Since the increase of unemployment would reduce price pressures, the initial inflationary boost would prove temporary. As a consequence the increase in unemployment could be temporary as well. A different approach suggested by some monetary observers (e.g. Gramlich, 2004) consists in following policy rules based directly on target values of unemployment and some appropriate measure of inflation (according, to a Taylor rule, under which the short-term interest rate is increased or decreased in order to respond to deviations in core inflation and unemployment from their target values).

The aim of the paper is to examine, by means of an econometric model, the economic consequences of oil price changes and monetary variables to economic inflation.

With respect to the previous literature our paper is novel in several respects. First, our study explicitly examines the effect of exogenous oil price shocks and monetary variables on inflation by using a pooled ordinary least square model for some Southeast Asian countries. The sample size (1983 to 2019) is chosen in order to eliminate the spurious relationship between oil and the macroeconomy of the 1970s. Second, we base the empirical analysis on a pooled ordinary least square model (POLS), which allows to consider the common impact of oil price shocks and interest rate on inflation. Section 2 discussed the method. Section 3 presented results. Section 4 covers the discussion and conclusion.

2. Method

2.1. Data

The data used in the study is sourced from the database of World Bank for relevant countries. Data that we use in this study were collected for Indonesia, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam. Using a sample dataset during the period of time from 1983 to 2019 on a yearly basis, the data is analyzed using Stata 15 software.

In this study, the data consist of world crude oil WTI, real interest rate and inflation or consumer prices as proxy, respectively, to illustrate the relationship between world oil price, monetary policy and status of the economy. The study is conducted on seven Southeast Asian countries.

Table 1: Measurement of Variables Used in the Study

Dependent Variables	Abbreviation	Source
Inflation, consumer prices (annual %)	INF	World Bank
Independent Variables		
Crude Oil WTI (USD/barrel)	OIL	World Bank
Real interest rate (%)	INTEREST	World Bank

Source: Author

2.2. Research Model

Impact of world oil shock and monetary policy on inflation has been investigated in some empirical studies in the world. Based on theoretical consideration, it is evident that the study is used a panel model with pooled OLS, fixed effect method (FEM), and random effect method (REM).

A large number of previous studies have applied common regression models such as Pooled Ordinary Least Square (Pooled OLS), Fixed Effects Model (FEM), and Random Effects Model (REM). In this study, we will investigate based on the steps and we will analyze how to select the best model among three models.

In order to discover the analysis of this relationship, we hypothesize the following model:

$$INF_{it} = f(OIL_{it}, INTEREST_{it})$$

The equation for the fixed effect model is:

$$Z_{it} = \beta_1 X_{it} + \beta_2 Y_{it} + \alpha_i + u_{it} \quad (3.1)$$

$$INF_{it} = \alpha_i + \beta_1 OIL_{it} + \beta_2 INTEREST_{it} + u_{it} \quad (3.2)$$

Where:

- α_i ($i=1 \dots n$) is the unknown intercept for each country (n country-specific intercepts),
- Z_{it} is the explanatory variable; i, and t denote for the country i and time t. This can be abbreviated by INF,
- X_{it} , Y_{it} denote independent variables. They are OIL and INTEREST.
- β_1 , β_2 are the coefficients for those independent variables,
- ε_{it} is the error term.

Regarding random effects model, the rationale behind REM is that the variation across entities is assumed to be random and uncorrelated with the predictor or independent variables included in the model. An advantage of random effects is that you can include time invariant variables (i.e. gender). In the fixed effects models these variables are absorbed by the intercept. REM allows to generalize the inferences beyond the sample used in the model

The random effects model is:

$$Z_{it} = \beta_1 X_{it} + \beta_2 Y_{it} + \alpha_i + u_{it} + \epsilon_{it} \tag{3.3}$$

$$INF_{it} = \alpha_i + \beta_1 OIL_{it} + \beta_1 INTEREST_{it} + \epsilon_{it} \tag{3.4}$$

Where:

- α_i ($i=1 \dots n$) is the unknown intercept for each country (n country-specific intercepts),
- Z_{it} is the explanatory variable; i, t denote for the country i and time t. This can be abbreviation like INF,
- X_{it}, Y_{it} denote independent variables. They are OIL and INTEREST.
- β_1, β_2 are the coefficients for those independent variables,
- ϵ_{it} is the error term within entity error.

3. Empirical Methodology

Here we are analysing the effect of world crude oil WTI & real interest rate on inflation with a panel data for the period of 1983-2019. Table 2 presents data description including 234 observations of 7 South-east Asian countries over a 37-year period. In fact, for each country with each index, first row is mean. Respectively, rows are minimum, maximum, standard deviation and the number of observations used in the study. In general, as far as inflation in average, Myanmar is the leading country, with 17.44, followed by Indonesia with 9.03, and Philippines is at the third position with 7.81. In addition to interest, Indonesia is the leading country in the group of 7 selected countries, followed by Thailand with 5.62. Vietnam is the country at the fourth position in inflation ranking while at the sixth position in interest ranking.

Table 2: Descriptive Statistics

country	OIL	INF	INTEREST
Indonesia	44.38022	9.031533	6.124298
	14.41333	3.030587	-24.60017
	98.58333	58.45104	18.8261
	28.77144	9.391165	7.508539
	34	34	34
Malaysia	42.14284	2.647066	4.475112
	14.41333	.2900079	-3.903382
	98.58333	5.440782	22.95688
	28.31817	1.335458	4.982343
	35	35	35
Myanmar	42.7651	17.44202	-1.713242
	14.41333	-.1091655	-31.50879
	98.58333	57.07451	12.48097
	28.1593	14.03068	10.66755
	36	36	35
Philippines	42.7651	7.814197	4.770069
	14.41333	.6741925	-16.39589
	98.58333	50.33898	14.16267
	28.1593	8.753126	4.816626
	36	36	36
Singapore	42.7651	1.59793	4.535814
	14.41333	-1.385703	-.5534981
	98.58333	6.627997	9.731647
	28.1593	1.683204	2.622339
	36	36	36
Thailand	43.59246	3.157051	5.620752
	14.41333	-.900425	-.3541167
	98.58333	7.994729	15.12481
	28.77555	2.16029	3.950334
	34	34	34
Vietnam	54.87011	6.356223	3.287731
	14.53417	-1.710337	-6.552887
	98.58333	23.11632	10.49087
	28.68307	5.474962	4.136878
	23	23	23
Total	44.21673	6.923084	3.891102
	14.41333	-1.710337	-31.50879
	98.58333	58.45104	22.95688
	28.27436	9.211127	6.549346
	234	234	233

Source: Result from the analysis

In order to see the correlation among variables, the correlation coefficients are calculated as in Table 3.

Table 3: Correlation Coefficients between Variables

	INF	OIL	INTEREST
INF	1.0000		
OIL	-0.1327 0.0425	1.0000	
INTEREST	-0.6398 0.0000	-0.0569 0.3872	1.0000

Source: Result from the analysis

The correlation coefficient between inflation and world oil price as well as the correlation coefficient between inflation and real interest are both negative and the corresponding probability value of the test, in which show the correlation coefficients are significant or not, are all smaller than 0.05. This suggests that if there exist linear correlations between each of variables of world oil price and interest to inflation, then they are all significant.

Quantitative research method is used to find empirical evidence on the factors affecting the inflation. The regression methods on the panel data are used include pooled OLS (Pooled Ordinary Least Square), FEM (fixed-effect model) and REM (random-effect model). In respect to FEM, individual specific effect is significantly correlated with the independent variables, assuming that there is a true effect size which underlines all studies in the study, and differences in observed effects are due to sampling error. In connection to REM, the true effect can exactly vary from study to study.

As suggested in Wooldridge (2010), pooled OLS is more exactly to estimate if the study can select a different sample for the period of time of the panel data. Because of existence of inadequate pooled OLS, either FEM or REM should be employed in relation to the situation of the same sample of entity used in the study. Thus, the results are examined by fixed or random effects models that are suggested are more possibly exact than using by pooled OLS.

In general, the effect size may be either higher or lower in this study. Due to the difference in the mixes of participants, implementations of interventions, and other reasons, it is evident to recognize that there might be different effect sizes underlying different analyses. Breusch and Pagan Lagrangian multiplier test for random effects can be used to choose either Pooled OLS or REM. In the theory, the results the variance for u is 0 and the p-value is 5% which means the study cannot reject the null hypothesis and hence select to do a pooled regression. Otherwise is REM. The result is represented in the Table 4 below.

Table 4: Breusch and Pagan Lagrangian for Homoscedasticity

	Value
Chibar2 (01)	0.00
Prob > Chibar2	1.0000
H0: Constant variance	

Source: Result from the analysis

First of all, Breusch and Pagan Lagrangian multiplier test is used for the choice of model between pooled OLS and REM. The p-value of the Breusch and Pagan Lagrangian multiplier test is very close to one. For the significance of 5%, the appropriate model is POLS. The estimation result is presented in Table 5.

Table 5: Results of Econometric Modeling with dependent variable of inflation

Variables	Coefficient	Probability
OIL	-0.052*	0.001
INTEREST	-0.900*	0.000
C 12.622*		0.000

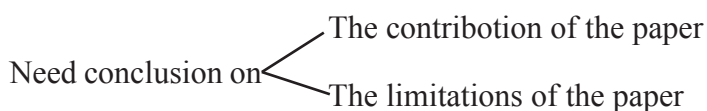
*Notes: * indicates significance level of 1%*

Source: Result from the analysis

5. Conclusion & Policy Implications/ Disoussion

In this paper we have specified and estimated a POLS model some Southeast Asian countries aimed at verifying if the oil price changes and monetary variable can affect the economic system.

Our results can be summarized as follows: Regarding the estimation results, our analysis shows the statistically significant negative impact of both world crude oil and interest on interest – in the case of seven South-east Asian countries. Concretely, regression coefficient of world crude oil is -0.052, i.e., an increase in world crude oil by 1 USD per barrel, on average, will cause a decrease of inflation by 0.052%. Whilst regression coefficient of real interest rate is -0.9. It means that an increase in real interest rate by 1%, on average, will cause a decrease of inflation by 0.9%. It can be said that the reduction of world oil prices contributed to reducing production costs for businesses and consumers, thereby stimulating investment and consumption, while saving foreign currency imports of petroleum, supporting inflation control, macroeconomic stability. The impact of interest rates on the money market has a relatively clear impact on the saving behavior, personal consumption and investment of businesses and in accordance with the theory, which will have an impact on the total demand of the economy, to inflation.



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MODELLING ECONOMIC GROWTH, CARBON EMISSIONS, AND FOSSIL FUEL CONSUMPTION IN VIETNAM

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Abstract: *The purpose of this paper is to investigate the effects of fossil fuel consumption, economic growth on carbon dioxide emissions in Vietnam. Using an autoregressive distributed lag model (ARDL model) on the data during the period over 1985-2013, collected from World Development Indicators, Department of Statistics in Vietnam. Evidence from the study shows the fossil fuel consumption of two years and four years before had, respectively, negative and positive statistically significant impact on this year carbon dioxide emissions. In addition to short run relationship, evidence from the long-run result has policy implications for Vietnam. Increasing industry growth in Vietnam will therefore increase environmental pollution in the long-run. Positive effect of fossil fuel consumption on carbon dioxide emissions raise a problem of using non-green energy in Vietnam. It is noteworthy that the Vietnamese Government promotes sustainable economics, which improves the use of clean and environmentally energy.*

Keywords: *Carbon dioxide emissions, economic growth, fossil fuel consumption, autoregressive distributed lag model.*

1. Introduction

Fossil fuel consumption is an important topic because it is a symbol of modern civilization. Nonetheless, fossil fuel consumption could increase pollution and make a significant impact on the global natural ecosystem. On the other hand, overuse of fossil energy could make the problems of both energy shortage and climate change becomes more serious, threatening the sustainability of the Earth, and the development of humankind. Thus, to reduce fossil fuel consumption, control carbon dioxide emissions, and retain economic growth is a common task for countries worldwide.

In the history of development, fossil fuels (coal, oil, gas) played a key role in producing energy to serve the needs of daily life and human production. However, with the rapid growth of the economy, as well as human demand, the use of fossil fuels has revealed many disadvantages. On the other hand, while the world is in need of generating more energy, cutting emissions at the same time requires us to look for new and more preeminent forms of energy. Facing the new trend, the position and role of the oil and gas industry in the world in general and that of Vietnam in particular in the development of renewable electricity should be considered.

Consuming fossil fuels is actually harmful. Human and animal respiration continually consume large amounts of oxygen and release CO₂ in the atmosphere. In addition, burning fossil fuels and generating energy also require oxygen to sustain the combustion. Therefore, it is no exaggeration to say that oxygen is an indispensable oxygen to sustain life on Earth.

Burning fossil fuels produces acids such as sulfuric, carbonic and nitric these substances are more likely to form acid rain and affect natural areas and damage the environment. Carvings made of marble and limestone are also somewhat destroyed by the acid dissolving calcium carbonate. Fossil energy also contains radioactive substances such as uranium and thorium, they are released into the air. In 2000, about 12,000 tons of thorium and 5,000 tons of uranium were emitted from coal burning. Oil refineries also have a negative impact on the water environment, especially the oil exploitation in the marine environment. Crude oil is transported by tankers. These activities require the burning of traditional fossil fuels. In particular, there are many cases of ship sinking causing oil spills. Seriously affects the marine environment and aquatic organisms.

In addition, the oil exploitation on land also has a significant impact on the environment. The exploitation of oil will directly affect surface water and the groundwater resource system. If the water source is contaminated with oil, it will cause harms and directly affect the health of users. Accordingly, thanks to modern technology today, there are many different types of water purifiers to serve and ensure people's health, the most prominent effects from oils such as diesel oil, styrene, When exposed to oil for a short time, the human body can have noticeable reactions. Such as skin, eyes and nose irritation. These are the organs that come into direct contact when the oil is in the air or water. In addition, it may adversely affect the respiratory system, digestive system, even the nervous system. Therefore, researchers now have invented the Nano water filter technology, a water purifier with modern technologies. It helps to remove dirt, heavy metals as well as oils in the water. Charcoal also produces large amounts of slag and fly ash. Therefore, this is also one of the causes of increasingly heavy air pollution.

To live and survive, humans need a lot of energy, therefore, it is required to find out and use sustainable and efficient energy sources. Traditional energy sources such as fossil fuels and hydro-power are currently running out. Therefore, the state needs to have measures to convert to renewable energy. Including clean energy. We also conclude that if the government carries out policies of energy conservation and emission reduction, it will significantly slow down economic growth with immediate effect, cause it to fall nonlinearly and not linearly in the future. We note that the current research is the first paper to draw such a significant conclusion. In addition, these conclusions show the advantages of combining co-integration and linear and nonlinear causality at the multivariate level. Thus, we recommend that academics, practitioners, and policy makers use both co-integration and causality analysis in multivariate settings in their analysis. The novel findings in the paper are useful for policy makers in relation to fossil fuel consumption, CO₂ emissions, and economic growth. Using the novel findings, governments can reach better decisions regarding energy conservation and emissions reduction without undermining the pace of economic growth in the long run. Some other studies in domestic on this issue have been carried out such as Pham Tien Dat and Ngo Thanh Binh (2020) but with qualitative analysis without quantitative method. This study utilizes specific model to illustrate the quantitative evidence for this topic.

The structure of the study is as follows. Section 2 described the data, the research model, and methodology of this study. The empirical analysis is presented in section 3. Section 4 covers some discussion. Finally, section 5 is devoted to conclusion.

2. Literature review

Academics have demonstrated the relationships between environmental pollutants and economic growth nexus. For example, Kuznets (1955) has postulated that environmental degradation increases with per capita income at the beginning of economic growth, and decrease thereafter, which is known as the environmental Kuznets Curve (EKC). The emissions of CO₂ have been used as a proxy for environmental pollution because CO₂ emissions have been increasing sharply every year, thereby resulting in greenhouse gas effects and global warming, which affects the environment (see Grossman & Krueger (1991), Ang (2007), Lotfalipour et al. (2010), Alam et al. (2012)). Thus, it is interesting to study the relationships among fossil fuel consumption, environmental pollutants, and economic growth.

Many developed countries have been taking a lead on mitigating carbon emissions, providing financial resources, and transferring technology to developing countries to address CO₂ emissions and climate change in recent decades. Tol (1999, 2005) study the marginal cost and damage costs of CO₂ emissions. To date, Vietnam has been cooperating with other countries and making an effort to control CO₂ emissions and contribute to mitigating climate change.

Vietnam signed the Climate Convention (June 11, 1992), on November 16, 1994; and the Kyoto Protocol (December 3, 1998), on September 25, 2002. As one of the Parties not included in Annex I, there is no obligation to commit to the quantitative reduction of greenhouse gas emissions under the Kyoto Protocol, but Vietnam and other developing countries must do a number of general obligations such as: (i) development of national notifications on climate change; (ii) a national inventory of greenhouse gases from man-made sources and the amount of greenhouse gases absorbed by sinks; (iii) assess the impacts of climate change on socio-economic fields and identify areas and areas vulnerable to climate change and sea level rise; (iv) development and implementation of climate change adaptation measures; (v) develop and implement programs and plans to reduce greenhouse gas emissions when receiving adequate capital support and technology transfer from developed countries and international organizations; (vi) conducting research activities and observing climate and climate change related issues/factors; and (vii) update and disseminate information to raise awareness among policy makers and the public about climate change, the Clean Development Mechanism.

The year 2015 marked a major event for Vietnam, which was the participation in the COP 21 Climate Change Summit in Paris France.

Vietnam considers the issue of climate change to be vital and has mobilized the entire political system to respond. Participating and fully implementing the contents of the Paris Agreement will take care of the root cause of climate change, so it will receive the support and agreement of the ministries, branches, localities and enterprises, organizations and people;

Most of the contents of the Agreement that need to be implemented are in line with Vietnam's priorities, especially for the period before 2025, so the orientations and policies that have been approved until 2025 are not required big adjustment;

As a developing country that has proactively set out policies and solutions to respond to climate change early, and at the same time has made specific financial commitments, climate change adaptation and deflation. Greenhouse gas emissions, Vietnam has received a lot of support from the international community. The early implementation of activities to implement the Paris Agreement will surely continue to receive support in terms of finance, technology, and capacity building for Vietnam to effectively respond to climate change.

Reducing greenhouse gas emissions to meet the committed targets Vietnam may require the application of new technologies that are more expensive than traditional technologies, requiring more investment and, in the short term, could affect resources. Investing in other goals. However, in the long run, investment in new technology will increase the competitiveness of the Vietnamese economy;

The implementation of legal responsibility in responding to climate change is a very new task in Vietnam, so it requires a lot of efforts from all levels and sectors in institutional building, building capacity to fully implement full liability is set forth in the Paris Agreement.

In the coming time to implement the Paris Agreement, it is expected that the following work should be done:

Prepare to submit to the Government for consideration and decision on the official decision of the Paris Agreement so that Vietnam can join to sign the Paris Agreement in New York on April 22, 2016 and complete the approval procedures according to current regulations;

Develop a plan to implement the Paris Agreement in Vietnam; National Adaptation Plan (NAP); implementation plan of the contents of climate change adaptation and greenhouse gas emission reduction committed in the INDC;

Coordinate with development partners to mobilize technical assistance to review and evaluate existing and ongoing climate change response programs and projects, proposing adjustments to be consistent with the Agreement Paris; consult the Advisory Council for the National Climate Change Committee and the National Climate Change Committee to submit to the Prime Minister for consideration a number of appropriate SP-RCC projects and programs, with the Paris Agreement's objectives, implementation should be given priority in the 2016-2020 period;

Prepare and implement activities to propagate and disseminate the contents of the Paris Agreement, opportunities and challenges for Vietnam.

There are many papers using different methodologies to study the relationships among fossil fuel consumption, CO₂ emissions, and economic growth. To the best of our knowledge, the literature has applied the following methods, including the Toda and Yamamoto procedure, bivariate linear causality, multivariate linear causality, and vector error correction model (VECM) to study the relationships among fossil fuel consumption, CO₂ emissions, and economic growth.

However, there are some limitations to the approaches that have been used in the literature. First, the tests may not be able to detect any nonlinear causal relationship among the variables. Second, the tests may not be able to measure the independent, dependent, and joint effects together, so that testing a series of single hypotheses is different from testing all hypotheses jointly. Even though some research in the literature has studied the joint effects among the variables and/or

the error-correction terms by constructing the F-statistic, if the variables do not have any co-integration relationship, determining the joint effects can become problematic.

Nonetheless, there is evidence supporting the existence of nonlinear behavior among fossil fuel consumption, CO₂ emissions, and economic growth. For example, according to the changes in economic environment, changes in energy policies, and fluctuations in energy prices, Lee and Chang (2007) show that economic events and regime changes can lead to structural changes in energy consumption patterns for a given time period, which creates a nonlinear rather than linear relationship between energy consumption and economic growth.

In order to circumvent these limitations, we use the Granger test proposed by Hiemstra and Jones (1994), Bai et al. (2010, 2011, 2018) and others to examine multivariate linear and nonlinear Granger causal relationships among fossil fuel consumption, CO₂ emissions, and economic growth for Vietnam. This approach not only enables obtaining linear and nonlinear, but also examines the independent, dependent, and joint effects among fossil fuel consumption, CO₂ emissions, and economic growth for Vietnam. These multivariate linear and nonlinear Granger causality findings are not only more interesting and thought-provoking than in the existing literature, but are also useful to government and independent policy makers in their decision making related to fossil fuel consumption, CO₂ emissions, and economic growth.

In order to draw a better picture regarding the issue, together with using linear and nonlinear Granger causality analysis, we conduct the co-integration analysis by applying both the Johansen co-integration and ARDL bounds tests to examine the co-integration relationships among fossil fuel consumption, CO₂ emissions, and economic growth for Vietnam. In addition, we strongly recommend that academics and practitioners use the multivariate nonlinear causality tests proposed by Bai et al. Bai et al. (2010, 2011, 2018), as these methods can examine the multivariate nonlinear causality tests regardless of whether the co-integration relationship exists or not, while the other literature checks the multivariate causality depending on the existence of co-integration.

3. Data and Methodology

3.1. Theoretical framework

Since each of the underlying variables stands as a single equation, endogeneity is less of a problem in the ARDL technique because it is free of residual correlation (i.e. all variables are assumed endogenous). Also, it enables us analyze the reference model. When there is a single long run relationship, the ARDL procedure can distinguish between dependent and explanatory variables, the ARDL approach assumes that only a single reduced form equation relationship exists between the dependent variable and the exogenous variables. The major advantage of this approach lies in its identification of the co-integrating vectors where there are multiple co-integrating vectors. The Error Correction Model (ECM) can be derived from ARDL model through a simple linear transformation, which integrates short run adjustments with long run equilibrium without losing long run information. The associated ECM model takes a sufficient number of lags to capture the data generating process in general to specific modeling frameworks.

Impact of fossil fuel energy consumption, economic growth and carbon dioxide emissions have been investigated in a large amount of empirical studies in the world. Based on theoretical

consideration, it is evident that the study is used a model for time series with Granger causality, co-integration test, variance decomposition analysis, VECM Granger causality approach and robustness of causality analysis is tested by innovative accounting approach (IAA), Zivot-Andrews unit root test and the ARDL bounds testing approach, etc. In this study, we will investigate time series thanks to ARDL model. This model was proposed by Pesaran, Shin & Smith (1996).

The mathematical form of the ARDL model used in the article is as follows:

$$D(CO_2)_t = \alpha_0 + \sum_{i=1}^m \alpha_i D(CO_2)_{t-i} + \sum_{i=1}^n \beta_i D(GDP_GROWTH)_{t-i} + \sum_{i=1}^n \gamma_i D(ENERGY)_{t-i} + u_t, \quad (2.1)$$

where D is the difference operator; $\alpha_i, \beta_i, \gamma_i$ are the regression coefficients, and u_t is the residual which has a simultaneous correlation but no correlation with its lags and all independent variables. So the right side of the regression equation consists of the lags of independent and dependent variables.

The ARDL model estimation process can be summarized through the following steps:

Step 1, the stationarity of the time series are verified.

Step 2, the optimal lag for the ARDL model is selected: This is an important step before estimating the ARDL model.

Step 3, the best ARDL model selected in the above step is estimated.

Step 4, the result of ARDL model estimation is back tested:

- + the test in which show that the model is well specified or not: Using Ramsey RESET test;
- + the test of the stability of ARDL model thanks to the cumulative sum of residuals (CUSUM: Cumulative Sum of Recursive Residuals).
- + the test the residual of ARDL model without autocorrelation thanks to Lagrange Multiplier test (abbreviated as LM test).

If the estimated ARDL model is appropriate, then the ARDL model can be used to describe the impact of the fossil fuel consumption and economic growth on carbon dioxide emissions in the short term.

Step 5, to see whether there exists a co-integration among fossil fuel consumption and economic growth and carbon dioxide emissions or not, we implement the Bound Test.

Details of the ARDL model can be found in Chapter 17 of Gujarati (2004).

3.2. Data

The study attempts to examine the causal nexus of GDP growth and fossil fuel consumption on carbon dioxide emissions with an evidence from Vietnam by employing a time series data spanning from 1985 to 2013 using the Autoregressive Distributed Lag (ARDL) Model. Three studied variables were employed from the World Bank which include; carbon dioxide emissions (kt), GDP growth rate (annual %), and fossil fuel energy consumption (% of total). The data is provided by Word Bank with no newer data.

Table 1: Measurement of Variables Used in the Study

Dependent Variables	Abbreviation	Source
Carbon dioxide emissions (kt)	CO2	WB
Independent Variables		
Fossil fuel energy consumption (% of total)	ENERGY	WB
GDP growth rate (annual %)	GDP_GROWTH	WB

Source: Summarized by the author

4. Results of Economic Modeling

4.1. Descriptive Statistics

Table 2: Descriptive Statistics

	GDP_GROWTH	CO2	ENERGY
Mean	6.436274	66214.26	46.84679
Maximum	9.540480	152169.5	70.32818
Minimum	2.789292	17509.92	26.82560
Std. Dev.	1.671950	46170.41	15.27931
Skewness	-0.087254	0.605220	0.173706
Kurtosis	2.606346	1.903411	1.538532

Source: Result from the analysis

Table 2 presents data description including 29 observations of each variable of Vietnam over a 29-year period from 1985 to 2013. Another test we used in the study is that the analysis needs to check the station of time series. We transform time series which are non-stationary to station ones. It means that after being transformed, times series have expectation, variance and covariance is constant over time. The time series in ARDL model must be stationary. Stationarity is an important concept when studying time series. However, in fact, most financial data series are non-stationary. To test the stationarity, we use unit root tests, thanks to a common test Augmented Dicky-Fuller test (ADF test). We use the unit root test with the order of lag is automatically selected according to Schwarz criterion, with intercept is included in test equation. ADF tests for the initial time series, and their first difference will be performed. Usually, after taking the first difference, we get the stationary time series. The use of the first difference of time series is not only to obtain stationary time series, but also the first difference series provide information about increasing or decreasing trend (depending on the sign of the difference) rather than focusing on providing information about the real value of the time series. The results in Table 3 shows that only IND_growth is station at level while all the others are non-station at level, but at first different level. So that, we can put all first different level series in to ARDL model for investigation.

Table 3: ADF Stationarity test results of the time series

Variable	Statistical value	Conclusion
CO2	1.549232	Non-stationary
D(CO2)	- 3.54748	Stationary
GDP_Growth	-2.3648	Non-stationary
D(GDP_Growth)	-5.107269	Stationary
Energy	0.396323	Non-stationary
D(Energy)	-3.462666	Stationary

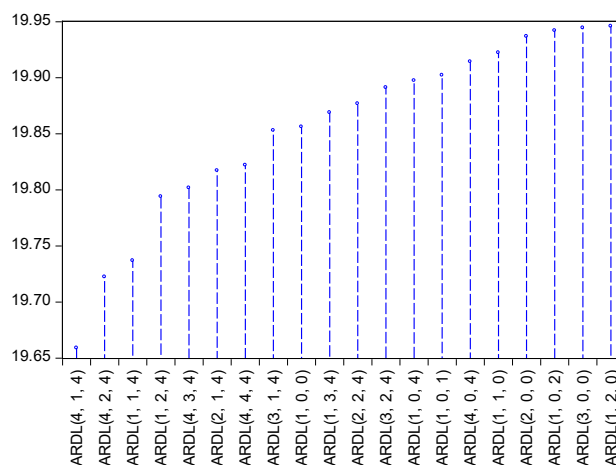
Source: Result from the analysis

4.2. Discussion of Estimation Models

First of all, Hannan-Quin information criterion value is used to choose the most appropriate model. The traditional way to select the optimal lag is to estimate the ARDL model multiple times with descending lags to 0. Among the estimated ARDL models, we choose the one with smallest Hannan-Quin information criterion value. In this article, the authors try out up to the top 4 lags and selects the recommended model according to Hannan-Quin criterion. The image depicting Hannan-Quin’s criterion value for the best 20 models, including the best model. Thanks to this Hannan-Quin information criterion, the best ARDL selected is that ARDL(4,1,4).

Figure 1: Hann-Quin’s Criteria for the 20 Best Models

Akaike Information Criteria (top 20 models)



Source: Result from the analysis

4.3. Results of Econometric Modeling

ARDL(4,1,4) is estimated as in the following Table 4.

Table 4: Results of ARDL(4,1,4) model estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
D(CO2(-1))	0.368385	0.220472	1.670890	0.1206
D(CO2(-2))	0.034683	0.250850	0.138263	0.8923
D(CO2(-3))	0.463872	0.310716	1.492913	0.1613
D(CO2(-4))	-0.615029	0.314115	-1.957975	0.0739

D(GDP_GROWTH)	735.1278	930.4797	0.790053	0.4448
D(GDP_GROWTH(-1))	1712.259	778.6091	2.199125	0.0482
D(ENERGY)	2400.848	622.5347	3.856569	0.0023
D(ENERGY(-1))	277.0230	597.2653	0.463819	0.6511
D(ENERGY(-2))	-1160.903	594.5172	-1.952682	0.0746
D(ENERGY(-3))	-359.2947	752.7908	-0.477284	0.6417
D(ENERGY(-4))	2629.586	772.1809	3.405401	0.0052
C	-2488.052	1879.226	-1.323977	0.2102

Source: Result from the analysis

Based on the Breusch-Godfrey Serial Correlation LM Test, we have:

- The Null hypothesis H0: no first order autocorrelation
- The Alternative hypothesis Ha: existence of an autocorrelation

At this stage, autocorrelation test used for null hypothesis: “no first order autocorrelation”, the Breusch-Godfrey Serial Correlation LM Test is used. According to the results in Table 5, the p-value of the ARDL model is far from zero. They are all larger than 0.05 so that null hypothesis is not rejected, which indicated that there is no autocorrelation between variables in the model

Table 5: LM test for the residual of the ARDL model

F-statistic	0.269763	Prob. F(2,10)	0.7689
Obs*R-squared	1.228576	Prob. Chi-Square(2)	0.5410

Source: Result from the analysis

To test for model specification of ARDL(4,1,4), the Ramsey Reset test is performed. In the theory, if the test result with p-value over 0.05, so the model is well specified at the significant level at 5 percent. In a result, Table 6 indicates that the test results with p-values are all over 0.05, which proved that the model is well specified.

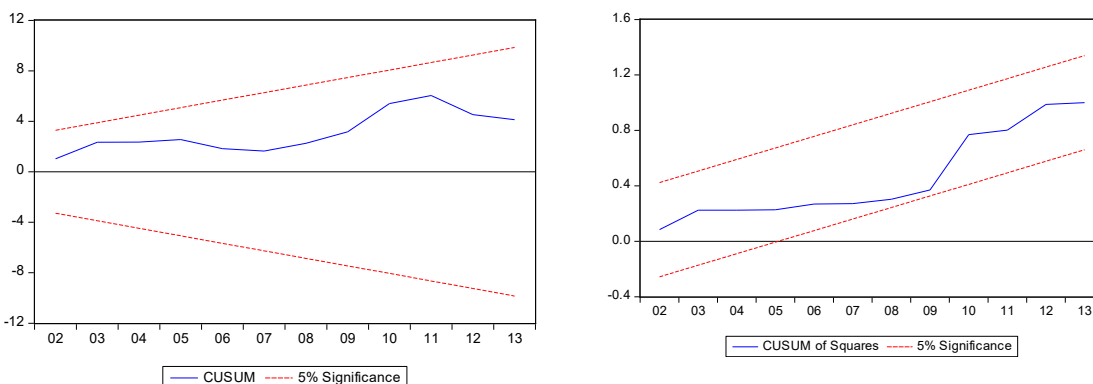
Table 6: Model specification Test

	Value	df	Probability
t-statistic	1.766786	11	0.1050
F-statistic	3.121531	(1, 11)	0.1050

Source: Result from the analysis

The next back testing is that the stability of ARDL model thanks to the cumulative sum of residuals. If the cumulative sum of the residuals is within the standard range at the 5% significance level, then it can be concluded that the residual of the model is stable and thus the model is stable.

Figure 2: The CUSUM and CUSUM of square of the ARDL model at a 5% significance level



Source: Result from the analysis

To go further to investigate the long-run relationship among the above considered variables, we use co-integration test thanks to Bound test.

Table 7: Test of long-run relationship between the variables

Null Hypothesis: No long-run relationships exist			
Test Statistic	Value	k	
F-statistic	4.626723	2	
Critical Value Bounds			
Significance	I0 Bound	I1 Bound	
10%	3.17	4.14	
5%	3.79	4.85	
2.5%	4.41	5.52	
1%	5.15	6.36	

Source: Result from the analysis

According to Table 7, the test statistic value is larger than every critical Value Bounds at every significance levels. Therefore, there exists a long run relationship among fossil fuel consumption, economic growth and carbon dioxide emissions. That long-run from is presented in Table 8.

Table 8: Long-run relationship among the variables

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(CO2(-1), 2)	0.116474	0.325167	0.358197	0.7264
D(CO2(-2), 2)	0.151157	0.358648	0.421463	0.6809
D(CO2(-3), 2)	0.615029	0.314115	1.957975	0.0739
D(GDP_GROWTH, 2)	735.127822	930.479680	0.790053	0.4448
D(ENERGY, 2)	2400.847854	622.534716	3.856569	0.0023
D(ENERGY(-1), 2)	1160.903315	594.517212	1.952682	0.0746
D(ENERGY(-2), 2)	359.294652	752.790845	0.477284	0.6417
D(ENERGY(-3), 2)	-2629.585852	772.180909	-3.405401	0.0052
CointEq(-1)	-0.748089	0.348575	-2.146134	0.0530

Cointeq = D(CO2) - (3271.5177*D(GDP_GROWTH) + 5062.5773 *D(ENERGY) -3325.8768)				
Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(GDP_GROWTH)	3271.517701	2145.361884	1.524926	0.1532
D(ENERGY)	5062.577293	1990.917410	2.542836	0.0258
C	-3325.876755	3534.627080	-0.940941	0.3653

Source: Result from the analysis

In the co-integration test, the co-integration regression coefficient is negative (-0.748089) and is statistically significant at 10% (with probability value of 0.053) indicating that co-integration relationship exists between variables. That is, in the long term when the system is in equilibrium, when a shock occurs, the variables in the model tend to move, “pull” the whole system “back” to the equilibrium, which means a reverse movement tendency (the negative sign of the co-integration regression coefficients) compared to those fluctuations. The co-integration equation, or equation that represents the long-run equilibrium relationship among the variables is as follows:

$$DCO2_t = -3325.8768 + 3271.5177 * DGDP_GROWTH_t + 5062.5773 * DENERGY + u_t \quad (3.1)$$

5. Discussion

5.1. Short-run relationship

According to Figure 1, the estimation of the ARDL(4,1,4) is finally selected as the best model to discuss. Regarding the estimation results, our analysis shows the relationship of fossil fuel consumption and economic growth on carbon dioxide emissions – in the case of Vietnam, we have the result in short run in the following Table 9:

Table 9: Short-run impacts of the variables on carbon dioxide emissions at first differential

Variables	Regression coefficients
D(CO2(-1))	0.368385 (0.1206)
D(CO2(-2))	0.034683 (0.8923)
D(CO2(-3))	0.463872 (0.1613)
D(CO2(-4))	-0.615029 (0.0739)*
D(GDP_Growth)	735.1278 (0.4448)
D(GDP_Growth(-1))	1712.259 (0.0482)**
D(ENERGY)	2400.848 (0.0023)***

D(ENERGY(-1))	277.023 (0.6511)
D(ENERGY(-2))	-1160.903 (0.0746)*
D(ENERGY(-3))	-359.2947 (0.6417)
D(ENERGY(-4))	2629.586 (0.0052)***
C	-2488.052 (0.2102)

Note: the number in () is the probability value of test of estimated coefficients' significance.

, **, and * indicate significance level of 10%, 5% and 1%*

Source: Result from the analysis

Fossil Fuel Consumption: The fossil fuel consumption of two years and four years before had, respectively, negative and positive statistically significant impact on this year carbon dioxide emissions. To be precise, a 1 kt of oil increase in fossil fuel consumption this year will decrease carbon dioxide emissions in the following two years by 1160 kt, while a 1 kt of fossil fuel consumption increase this year will increase carbon dioxide emissions in the next four years by around 2629 kt. In fact, fossil fuel consumption is a kind of non-green energy will cause more carbon dioxide emissions.

Regarding economic growth, it is evident that the effect of economic growth on carbon dioxide emissions is also positive and significant in the next year. More specifically, an increase in economic performance will impact on carbon dioxide emissions in the case of Vietnam. This finding is in relation to theoretical expectations and is significantly correlated with others empirical studies. In concrete, a 1 percent increase in economic growth this year will increase carbon dioxide emissions by 1712 kt in the next year.

5.2. Long-run relationship

The long-run equilibrium relationship among the variables is as in equation (3.1), in which, a 1 percent increase in industry growth will increase carbon dioxide emissions by 3271 kt, while a 1 kt increase in of fossil fuel consumption will increase carbon dioxide emissions by 5062 kt in the long-run. At the same time, economic growth may increase the carbon dioxide emissions, but insignificant. This empirical results is consistent with results of Hamit-Hagggar (2012), Muhammad et al. (2014A).

6. Conclusion

This paper investigates the impact of economic growth and fossil fuel consumption on carbon dioxide emissions of Vietnam between 1985 and 2013. The empirical reveals that in the short run, there is a directional relationship running from economic growth to carbon dioxide emissions, especially the strong impact of fossil fuel consumption on carbon dioxide emissions. Results even show that there is a co-integration among variables in the long run, with positive impact of fossil fuel consumption and economic growth on carbon dioxide emissions. It is recommended that

economic growth with sustainable development achievement in Vietnam is in help to create a green economy so that it does not cause carbon dioxide emissions. Some policy implications for Vietnamese government may be raised, such as reduction of the dependence on fossil fuel energy by exploiting renewable energy sources such as wind, solar or hydropower. As a consequence, it leads to corruption and helps to consolidate authoritarian regimes (Batsaikhan et al., 2017). Furthermore, energy system in the region should be reformed to reduce government spending and improve the efficiency of the energy system. For instance, in Vietnam, energy subsidies may facilitate wasteful consumption because it increases government spending and pushes prices below true costs. In addition, retail electricity prices are lower than the global average (United Nations, 2019). Lastly, regional cooperation and integration should be encouraged to ensure energy security and economic development (Rakhimov, 2010).

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EMPIRICAL ANALYSIS OF ECONOMIC GROWTH AND UNEMPLOYMENT IN VIETNAM

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Abstract: *This research investigates the relationship between unemployment and economic growth in Vietnam through the implementation of Okun's law. Using annual data covering the period 1991-2018, time series techniques are used to test the relation between unemployment and economic growth and to obtain estimates for Okun's coefficient. Namely, the study used Augmented Dickey-Fuller (ADF) for unit root, cointegration test and a simple regression between unemployment rate and economic growth. The empirical results reveal that Okun's law cannot be confirmed for Vietnam. Thus, it can be suggested that the lack of economic growth does not explain the unemployment problem in Vietnam. The study recommended that economic policies related to demand management would not have an important effect in reducing unemployment rate. Accordingly implementation of economic policies oriented to structural change and reform in the labor market would be more appropriate by policy makers in Vietnam.*

Key words: *Economic growth, Okun's law, Unemployment rate.*

INTRODUCTION

It is a widely accepted view in economics that the growth rate of the GDP of an economy increases employment and reduces unemployment. This theoretical proposition relating output and unemployment is called "Okun's Law". This relation is among the most famous in macroeconomics theory and has been found to be hold for several countries and regions mainly, in developed countries (Lee, 2000; Farsio and Quade, 2003; Christopoulos, 2004; Daniels and Ejara, 2009). However, there is very few attempts of this kind have been made in developing countries and mainly in Asian countries. Therefore, the motivation of this study is to test the validity of okun's law for Vietnam. This study is conducted on the dataset of Vietnam with followng the footstep of move to explain.

Unemployment with its economic and social implications is one of the most pressing problems facing Vietnamese policy makers, high rates of unemployment signal a deficiency in the labor market, deepening poverty incidence and spread indecent standards of living (World Bank, 1994). In Vietnam, the development of the service sector with the rise of global supply chains and reforms aimed at liberalizing the labor market has resulted in temporary employment growth in the country (International Labor Office, 2016).

Table 1 displays average unemployment and economic growth rates over the period, unemployment rate in Vietnam fluctuated between 1% and 2.87%. During the period from 1991 to 2008, unemployment rates had been relatively high in comparison with an average growth rate of 1.94%. The situation had been improved during recent period, with lower level of unemployment rates for all years from 2009 to 2018. These figures reveal the improvement of the unemployment problem in Vietnam. Thus, an investigation of the output relationship will permit analysts to conduct appropriate policies for the reduction of unemployment in the country.

However, despite the social and economic consequences related with decreasing unemployment rates, some additional issues remain unresolved. For example, which factors are responsible for the existence of unemployment? Does the size of unemployment follow an autonomous route independent from other macroeconomic variables?

The answer of these questions is related to the empirical investigation of the relationship between output and unemployment. Given that both variables, that is, economic growth and unemployment rate are affected to a greater or lesser extent by business cycle, we would expect a long-run relationship between these variables to exist. Within this context, high rates of output growth will lead to a reduction of unemployment.

In this study, we provide an empirical analysis of the controversial relationship between GDP growth (annual %) and unemployment total (% of total labor force) (modeled ILO estimate) for Vietnam. The data were collected from the Database of World Bank.

Table 1: Unemployment rate and economic growth in Vietnam (1991-2018)

Year	Unemployment	GDP growth	Year	Unemployment	GDP growth
1991	1.962000012	5.960844	2005	2.224999905	7.547248
1992	1.963999987	8.646047	2006	2.174000025	6.977955
1993	1.881000042	8.072731	2007	2.026000023	7.129504
1994	1.932999969	8.838981	2008	2.380000114	5.661771
1995	1.942999959	9.54048	2009	1.736999989	5.397898
1996	1.929999948	9.340017	2010	1.113999963	6.423238
1997	2.869999886	8.152084	2011	0.999000013	6.240303
1998	2.289999962	5.764455	2012	1.02699995	5.247367
1999	2.329999924	4.773587	2013	1.251999974	5.421883
2000	2.25999999	6.787316	2014	1.256000042	5.983655
2001	2.75999999	6.192893	2015	1.858999968	6.679289
2002	2.119999886	6.320821	2016	1.850999951	6.210812
2003	2.25	6.899063	2017	1.886000037	6.812246
2004	2.140000105	7.536411	2018	1.891000032	7.075789

Source: Collected by the author form WB

MATERIALS AND METHODS

Okun's study remains an important theory. It has been discussed and updated by much economic research. The law states that a 1% reduction in the unemployment rate would reduce

approximately 3% more output. In fact, Okun postulated that a 1% increase in the growth rate above the trend rate of growth would lead only to 0.3% in the reduction of unemployment. Reversing the causality a 1% increase in unemployment will mean roughly more than 3% loss in GDP growth. This relationship implies that the rate of GDP growth must be equal to its potential growth just to keep the unemployment rate constant. To reduce unemployment, therefore, the rate of GDP growth must be above the growth rate of potential output (Tatom, 1978).

A number of studies have followed investigating empirically the relationship between output and unemployment (Lee, 2000; Viren, 2001; Silverstone and Harris, 2001; Sogner and Stiassny, 2002). These studies mostly revealed the validity of the relation between output and unemployment rate. However, the estimates of Okun's coefficient vary substantially across countries and regions. Moosa studied the validity of Okun's law in four Arab countries: Algeria, Egypt, Morocco and Tunisia. He found that output growth does not translate into employment gains for the four countries, which means that Okun's coefficient turn out to be statistically insignificant.

Keller and Nabil (2002) suggest that economic growth in the MENA region has been insufficient compared to the region's labor force and that high growth does not guarantee good labor market outcomes. On the other hand, the World Bank (2007) suggests that high unemployment is viewed as a reflection of the problems of structural and frictional unemployment in MENA countries. It seems that the World Bank Report suggested that Okun's coefficient is low or insignificant among MENA countries.

Model description: Using the knowledge gained from the surveyed literature, the study used a standard version of Okun's law, which is given as follow:

$$y_t = \beta_0 + \beta_1 u + e_t \dots \quad (1)$$

Where:

y = The real output product

u = The level of unemployment

e = The white-noise disturbance term

In equation 1 the parameter (β_1) is known as the Okun coefficient and indicates changes in real output caused by changes in unemployment rate. The estimated elasticity provides a measure of the relationship between employment and economic growth; where low estimates of Okun's coefficient suggest little correlation between economic growth and employment rate, while high estimates of the slope coefficient provides support of Okun's law.

RESULTS

In order to obtain reliable regression results, we first need to make sure that our model could not be subject to "spurious regression" (Gujarati, 1995) therefore, we first test the nature of the time series to determine whether they are stationary or non-stationary and also their order of integration perform unit root test on the time series macro-variables in our sample. First, the Dickey-Fuller test was applied to both variables to detect if these variables were stationary or non-stationary.

Both variables proved to be non-stationary; therefore, our regression tests were applied to the first differences. The results are obtained in Table 2.

The cointegration properties of the principal series are investigated. The following cointegrating equations were used.

$$\ln \dot{GDP}_t = \alpha_0 + \alpha_1 \ln u_t + \epsilon_t \quad (2)$$

$$\ln u_t = \lambda_0 + \lambda_1 \ln GDP_t + \epsilon_t \quad (3)$$

If the log of GDP growth rate and unemployment rate cointegrated, then the residuals from the cointegration equations 2 and 3 must be integrated to order zero, meaning that the residuals are stationary. To ascertain whether the null hypothesis of no cointegration is rejected the Cointegrating Regression Durbin-Watson (CRDW) statistic from the ordinary least squares estimation of Equations 2 and 3 are used. The CRDW statistic indicates that it is significantly different from zero and larger than the CRDW critical value of 0.89 at the 5% level (Engle and Yoo, 1987). However, another formal test is the ADF test on the residuals of Equation 2 and 3 is used. The results of ADF test statistics are (-5.99) and (-5.19), as in Table 2. On the basis of Mackinnon (1991) critical values, cointegration is supported.

Finally, having established that real GDP is related thus a long-run equilibrium relationship exists between these variables, thus we proceed to estimate equation 1. Both first differential variables proved to be non-stationary; therefore, the regression tests were applied to the first differences of logarithms for both variables. Table 4 displays the regression test results. Despite, the negative sign of the slope coefficient implies a negative relation between the two variables, the absolute value of the t-statistic for the slope coefficient (-0.06) is significant at any confidence level. Moreover, the calculated adjusted R-squared and the F-statistic does not confirm the strong relationship between the two variables. This provides support for that unemployment does not depend on economic growth. Therefore, based on our findings, we believe that Okun's law does not hold for Vietnam.

The absence of a statistically significant relation between unemployment and output at the aggregate level indicates that a cyclical recovery will not be accompanied by reduction of unemployment. Furthermore, this might reflect the sizable structural and/or frictional component of unemployment in Vietnam.

Table 2: ADF unit root test t-statistic

Variable	Level	First difference
Log GDP growth rate	-2.58	-5.99
Log Unemployment rate	-1.74	-5.18

Table 3: Simple regression

Dependent Variable	Independent Variable	Coefficient	Coefficient t-Stat	F	R ²	DW
Dlg	Dlu	-0.063	-0.368	0.136	0.0054	1.8003

Sample: 1991-2018; Dlu (u): First differences of logarithm of unemployment rate. Dlg (GDP): First differences of logarithm of

GDP

DISCUSSION

The explanation for this result is that unemployment in Vietnam is structural but not cyclical. Structural unemployment results from unemployed people who do not have the skills and qualifications to do the available jobs. In this case, economic growth cannot reduce these kinds of unemployment. On the other hand, despite Vietnam has implemented an ambitious program of economic reform since 1991 with the support of the IMF and the World Bank and the country itself, to restructure the economy with an aim of boosting economic growth and enhancing the role of the private sector in the economy mainly in employment. The labor market in Vietnam is still dominated by the government as the prime source of demand for labor.

In recent study by the World Bank, the link between growth and unemployment in Vietnam is affected by the types of jobs that are created mainly (manual jobs), by the incentives employers have to choose between foreign and local workers and by the choices that nationals make between accepting a local job and staying voluntarily unemployed in search of a better job overseas or in the public sector. They explained that despite Vietnam achieved strong GDP growth and created many new jobs. However, unemployment (among nationals) declined and fluctuated around a fairly low level of 2%, the bulk of new jobs created have been taken by foreign workers. This is because; domestic workers have relatively high reservation wages, based on expectations of obtaining public sector or foreign jobs and of income support from families.

From what have been discussed we can conclude that unemployment problem in Vietnam reflect the behavioral nature of unemployment in Vietnam. Thus to reduce unemployment rates, much hope lies in reform acceleration for the labor market regulation in Vietnam: Efforts like continuous improvements to working conditions and higher salaries will eventually convince the Vietnamese to accept manual and then reduce unemployment rates in the long-run.

CONCLUSION

This study attempts to provide an empirical analysis of the relationship between GDP and unemployment for Vietnam during the period (1991-2018) using for this purpose time series techniques. Fourth more, the study provided an estimation of Okun's coefficient. Our empirical analysis consisted of Dickey-Fuller test, cointegration test and a simple regression between unemployment rate and economic growth. The results presented in this study, showed that the data series are stationary in their first differences. Tests of cointegration revealed long-run association between unemployment and economic growth.

On the other hand, the results support that unemployment and output are unrelated. Therefore, our findings suggest that Okun's law is not valid for Vietnam. It can be suggested that the lack of growth does not explain the unemployment problem in Vietnam. Thus, our results have an important policy implication, the economic policies related to demand management would not have an important effect in reducing unemployment in Vietnam. However, economic policies more oriented to structural changes and reform in labor market would be more appropriate in the case of Vietnam. Finally, the results of this study come in line with other study in Vietnam such as...

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MODELS OF DEVELOPING BORDER-GATE ECONOMIC ZONES TOWARDS GREEN ECONOMY GROWTH IN NORTHEASTERN BORDER AREAS OF VIETNAM

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Abstract: *Paper contents is a part of a research project of the author [B2015_TN_03_03] about market participation of ethnic minority households in border areas in the Northeast Vietnam. Using sociological research in 1000 people of minority ethnic in the border province of North Eastern. Northeast border strip of Vietnam has special importance geo - political and geo - economic trade relations with China Southern region. Recognizing the importance of this, our State deployed model piloted border-gate economic zones (BEZ) in the direction of openness and integration. So far, according to the joint assessment, the initial model BEZ bring positive results. It is time to evaluate, learn from experience in order to continue to improve and replicate the pilot model, access to the space model aimed at developing new markets border areas. To accomplish this goal, we aim, to clarify a number of issues: (1) General understanding of the internal concept of BEZ, access market development model; (2) Evaluate BEZ in northeastern border on Vietnam as the new economic model; (3) Access to space development model in terms of market opening and integration of the border region of North Vietnam; (4) To propose some solutions for sustainable development space model developed markets northeastern border region of Vietnam.*

Keywords: market, northeastern border, BEZ model, development space, minority ethnic.

1. Introduction

The development of BEZ is a new problem emerging in the process of international economic integration. The increasing development of the market economy, the trend of economic exchanges between countries has increased, and localities with border gates have taken advantage of the border gate to promote import-export activities, immigration with neighboring countries. Simultaneously, with the increasing scale of goods exchange, the need to expand economic activities at border gates led to the construction of BEZ. Therefore, from being a place controlling population traveling between the two countries, at border gates, developing trade exchange, tourism, services, investment and production to serve the economic development of localities border area, and thereby promoting the development of other localities in the country. Through research on the scientific basis of formation and development of BEZ in the Northeast, it can be said that the development of this model is an objective indispensable requirement in the process of developing a market economy in the province in particular and the country in general. This article outlines general knowledge about the BEZ in the Northeast of Vietnam with its own characteristics of territorial spatial organization, mechanisms, policies. This model has also been approached practically in two

typical provinces, Ha Giang and Lang Son, with specific characteristics of geographical location and potential for socio-economic development. This is a new economic model that is forecast to thrive in the coming time, requiring managers from the central to local levels to summarize and learn from experience, especially the appropriate mechanisms and policies for effective implementation, bringing practical benefits.

2. Context area overview

As early as 1996, the Government of Vietnam started piloting the construction of Mong Cai economic zone through the approval of a number of preferential mechanisms for this economic zone. On that basis, in 1998, the Government conducted a more extensive pilot with the approval of preferential policies for Moc Bai BEZ and Lao Bao trade area. This is the first time that the name of BEZ has been officially used.

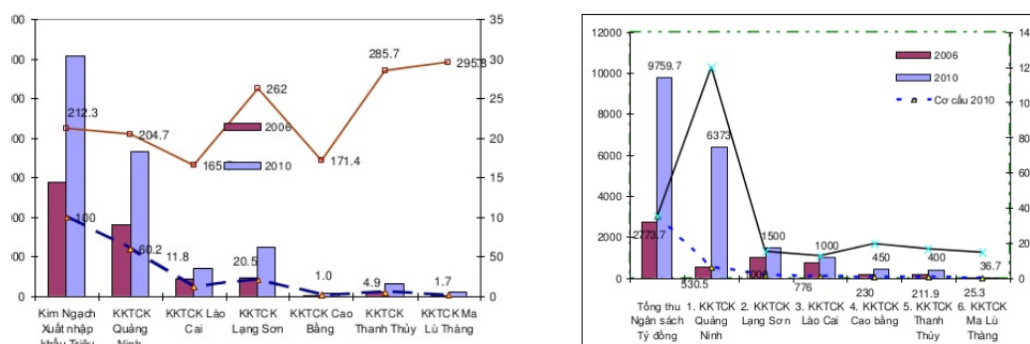
In 2001, the Prime Minister issued a Decision on policies for BEZ, and The Ministry of Finance issued a Circular guiding the implementation of financial policies applicable to border-gate economic zones. At the end of December 2002, the Government held a conference to review the implementation of BEZ and evaluate that the model has created a development step “living life in border areas”, creating a new face for the border areas and accelerating the process of “urbanization” there [3].

In October 2005, the Government officially authorized the establishment of tax protection zones in BEZ, pledging to provide targeted support to the local budget in infrastructure development in BEZ. In early 2008, the Prime Minister of Vietnam approved the “Planning for development of Vietnam’s border gate economic zones to 2020” [3]. Accordingly, by 2020, Vietnam will have 30 border gate economic zones in which the BEZ are Mong Cai, Lao Cai, Dong Dang-Lang Son, Lao Bao, Cau Treo, Bo Y, Moc Bai, An Giang and Dong Thap will be interested in building synchronous infrastructure, organizational management model, mechanisms and policies [5].

Currently, the country has 21/25 provinces having land border to maintain BEZ, of which China has 6 provinces, Laos has 8 provinces and Cambodia has 4 provinces. Over 20 years of operation to date, BEZ have attracted nearly 800 investment projects, including 700 domestic projects with a total capital of over 50 trillion VND; The remaining 100 foreign projects with registered capital of over 700 million USD. The model of BEZ is a strong affirmation of the important role for socio-economic development as well as security and defense in the mountainous and border provinces.

BEZ Northeast is an important part of the system of BEZ North Vietnam bordering China, from East to West including the following provinces: Quang Ninh, Lang Son, Cao Bang, Ha Giang, Lao Cai. Compared with regions adjacent to China’s northwestern region remaining (including the provinces of Dien Bien, Lai Chau), BEZ above role is important to the operation socio-economic development as well as security and defense assurance. In the period 2006-2010 at the BEZ Vietnam-China, the Northeast always accounts for over 90% of the import-export turnover as well as contributes to the state budget (figure 1) [6]. ... This model is also approached in depth through understanding the spatial territorial organization in Ha Giang and Lang Son provinces. The study uses secondary data from reported sources of BEZ, national defense zones, and northeast border provinces.

Figure 1: Import-export turnover and contribution to the state budget of BEZ Vietnam-China in the period 2006-2010



[Compiled from data of the Ministry and the Department of Planning and Invest]

3. Literature review

3.1. BEZ overview

BEZ: It is a defined economic space associated with the border gate where people live and is applied specific development mechanisms and policies, suitable to the characteristics of each locality in order to bring the highest socio-economic efficiency based on the sustainable planning, exploitation, use and development of resources established by the Government or the Prime Minister’s decision [4].

The model of BEZ is researched and deployed with four purposes: (1) Economic development in border areas on the basis of encouragement, support, conditions, and creating favorable areas for domestic enterprises investing and doing business in border areas; (2) improving the living standards of people in border areas and adjacent areas, contributing to improving the population of people in border areas through increasing investment in infrastructure and developing economic exchanges; (3) implementing the strategy to link the maintenance of political security and national defense, social order and safety, national sovereignty with economic development; (4) perform better regulation and coordination in state management of BEZ; improve the efficiency and effectiveness of state management in the area [5].

The spatial organization of BEZ follows the following models:

► *Modeling according to the traffic corridor*

The straight line model is formed on the basis of road or river traffic routes, along with the development of industrial parks, urban areas, seaports, bonded warehouses... on each side with a reasonable distance. Therefore, this model is often formed and developed based on border trails, on-site markets or on-site markets with narrow spaces. The advantage of this type of model is to reduce the high concentration of borders, promote the strength of the transport network to transport import and export goods.

► *Model of fan intersection at the handle*

As a model based on the two sides, there are a series of urban areas, industrial zones, agricultural production areas, systems of bonded warehouses, markets, wharves... relatively close

to the border. (This distance is formed spontaneously or by convention of the two neighboring countries). The exchange-transport of goods along the nearest road to achieve the result is a model with high concentration of trade, minimizing service costs.

► *Model fan pattern intersects at the edge of the blade*

Contrary to the above model, the intersecting fan model at the edge of the blade is formed on the basis of high concentration of functional subdivisions (urban, industrial, commercial, service, ...). This model has a high level of commodity concentration, scattered in many pairs of close border markets, favorable topographic, commercial conditions, complete basic services, crowded population. This model appears in developed countries with a high concentration, forming a range of large urban centers and industrial centers with bilateral trade turnover between 20 and 40% of gross domestic income.

► *Model spread*

This model is built on the basis of the living habits of the population, suitable for pairs of markets and towns along border lines. The advantage of this model is to make use of the available natural conditions and technical infrastructure; and often there is cooperation between the parties to build one or more BEZ and together manage to create synergy on a large scale.

3.2. Evaluate the BEZ borders in Northeast Vietnam as a type of green economic space model

The Northeastern region of Vietnam has 5 provinces bordering China: Quang Ninh, Lang Son, Cao Bang, Ha Giang and Lao Cai all approved by the Government in decisions to build stock zones. Notably, the BEZ Northern are all located in the Northeast and are also the first BEZ deployed in our country as a pilot of a new economic spatial model (Table 3.1).

Table 3.1. The North East Vietnam border areas are piloting the BEZ model

Local	The range of localities belonging to BEZ Vietnam	Chinese border gate
QUANG NINH PROVINCE	- Mong Cai city - Communes: Hai Xuan, Hai Hoa, Binh Ngoc, Tra Co, Ninh Duong, Van Ninh, Hai Yen, Hai Dong, Hai Tien, Vinh Trung, Vinh Thuc	Dong Hung, Guangxi
LANG SON PROVINCE	- Dong Dang international border gate (railway); - Huu Nghi border gate (by road), including Dong Dang town and Bao Lam commune - Cao Loc district;	Huu Nghi, Guangxi
CAO BANG PROVINCE	- Ta Lung national border gate and Ta Lung commune - Quang Ha district. - Hung Quoc border gate and Hung Quoc commune, Tra Linh district. - Soc Giang border gate and Soc Ha commune - Quang Ha district.	Thuy Khau Long Bang, Guangxi Binh Mang
LAO CAI PROVINCE	- Lao Cai international border gate includes: wards of Lao Cai, Pho Moi, Coc Leu, Duyen Hai; Van Hoa commune; Luc Cau village, Dong Tuyen commune (Lao Cai town); Na Mo village, Ban Phiet commune, Bao Thang district. - Muong Khuong border gate: includes the entire Muong Khuong commune.	Ha Khau, Van Nam - Kieu Dau
HA GIANG PROVINCE	- Thanh Thuy border gate includes Vi Xuyen district - Ha Giang	Thien Bao

Source: [3], [4], [7], name of sources

The shortage of customs forces at many national and local border gates becomes a pressing problem. At many border gates where there is no customs force, goods exchange has not been confirmed; Forcing businesses, business households to go to the neighboring border gate to do the procedures. Therefore, it leads to costly time, transportation and transaction costs. The circulation of a large amount of cash has put Vietnamese businesses and goods owners in a very unfavorable situation. That is not to mention the problem of smuggling, trade fraud across the border is increasingly complicated.

4. Method and Results approaching some development space models BEZ in the northeastern border of Vietnam through the reality of Ha Giang and Lang Son Provinces

Need some paragraphs explaining that this section studys..., how BEZ has been applies in ... assessment of its effectiveness

4.1. The development territorial space model of socioeconomic – combined ensuring security and defense Ha giang Province style (Referred to Ha giang model)

Bases for building goals and point of view on regional construction of Ha Giang province are two important decisions of the Government: Decision No. 1151/QĐ-TTg, dated August 30, 2007 of the Prime Minister Regarding the approval of the planning on construction of the Vietnam-China border region until 2020, and Decision No. 883/QĐ-UBND, dated April 6, 2007, Decision on approving the master plan project of urban system and rural residential area in Ha Giang province until 2020. Accordingly, Ha giang belongs to 1st economic zone of the secondary driving economic regions in Vietnam-China borderland.

Basic features of the regional territorial space organization in Ha Giang province: (i) Being an integrated economic region, in which the border gate economy and the mining industry are major economic sector. (ii) Being the northern gateway area of the key economic region of North Vietnam and having close economic relations with the provinces of Southern China. (iii) A region with potential for cultural, historical and ecological tourism development. (iv) Having a strategic position on security and defense for the whole country.

Due to the natural and socio-economic characteristics, the Province is still divided into the following three main functional economic regions:

1) Agricultural economic region associated with tourism development to Dong Van Plateau Global Geopark as the center (Highlands of Rocky Mountains): including provinces: Meo Vac, Dong Van, Yen Minh, Quan Ba, having 232.606 ha. This is the region that focuses on developing temperate vegetables, flowers, fruits, medicinal plants and raising beef cattle for goods sold to domestic and foreign markets (China). To step by step develop tourism according to the planning of Dong Van Plateau Global Geopark [8].

2) Strong economic zones for forestry and industrial crops (tea, soybean) are dominant (in highland and mountainous areas): It is a mountainous and mountainous area in the west and northwest of the province, including 2 districts Hoang Su Phi and Xin Man and some communes of Vi Xuyen district, Bac Quang. This is an area prone to landslides, forest land currently accounts for over 70% of the area. In the coming time, to concentrate and maintain the development of planting Shan tea trees and soybean plants in the direction of commodity development, developing

forests of paper raw materials, and raising cattle. Pay attention to develop agricultural and forestry extension policies, develop small hydroelectricity, focus on building infrastructure.

3) The driving force (Lowland area) associates industrial development with food development, is a key food crop area of the province: including Ha Giang city and districts Quang Binh, Bac Quang, Vi Xuyen and Bac Maze, with an area of 437,238.5 ha. Well-developed infrastructure conditions, with National Highway 2 and Highway 34 passing, have created favorable conditions for goods exchange between the region and provinces in the Northeast region and China. This is the region where the province focuses on developing food crops (accounting for about 80%), planting citrus trees and breeding goods. To develop the mineral processing industry, develop paper materials and paper production, tea and fruit processing industry, building materials, and trade and tourism services.

4) Economic zones, industrial zones: Thanh Thuy border-gate economic zone has 07 functional areas, including communes: Lao Chai, Xin Chai, Thanh Duc, the center of Thanh Thuy border gate, Phuong Tien, Phuong Do, Phong Quang with an area of 28,781ha. General, multidisciplinary, multidisciplinary including: Trade - Services - Tourism - Industry - Agriculture and forestry, forming an area to attract investment and international integration. As a gateway for international trade, a transport hub, import and export of goods and services important on the axis linking National Highway 2, serving as a bridge between Yunnan province, China and northern Vietnam and the corridor East Sea, between Asean countries and with Northeast Asian countries.

4.2. Organizational model of open interactive territorial space of Lang Son

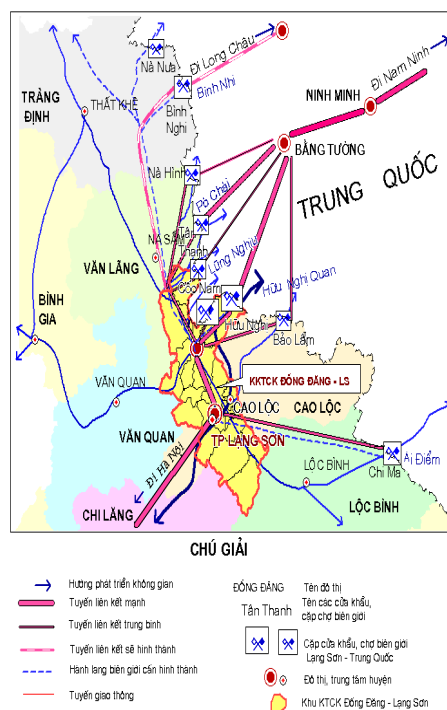
Based on the world and regional situation, some of the following problems can be forecasted: (i). The trend of cooperation and development is a common trend, so both sides are expanding cooperation for development. (ii). China is a large market, a strong attraction attracting many countries to enter this market, so there will be fierce and fierce competition. (iii). China's border policy is very active and flexible, so in trading relations with Vietnam we are always in a passive position to deal with. Chinese businesses have more experience than us in terms of searching, competing and expanding markets. Based on those forecasts, we design an open interaction model for the development of Lang Son stock market, including line development model and regional development model [9].

Model in line of development: The development of border gate economy in Lang Son province must be placed in the spatial relationship with the Northern cities. The market development direction of Lang Son is Ninh Minh, Bang Tuong and Long Chau districts of Guangxi province - China, then goes to Nanning in Guangxi province. [Figure 3.1]. In the three districts facing Lang Son, Bang Tuong is a place with many strengths. The flow of goods through Bang Tuong accounts for the highest proportion; The trend of market development in the North of Lang Son is also strongest in the direction of Bang Tuong. Therefore, it is necessary to raise the issue of building a counterbalanced development area, corresponding to the development of the external-border economic development. In the three districts facing Lang Son, Bang Tuong is a place with many strengths. The flow of goods through Bang Tuong accounts for the highest proportion; The trend of market development in the North of Lang Son is also strongest in the direction of Bang

Tuong. Therefore, it is necessary to raise the issue of building a counterbalanced development area, corresponding to the development of the external-border economic development.

The development area in Lang Son side must have enough potentials and strengths in economic, infrastructure, legal corridor and equal competitiveness with Bang Tuong of your country and the future must be corresponding to South city. Ninh - capital of Guangxi province. The construction of Dong Dang Securities Zone - Lang Son as well as promoting the development of Lang Son city is an urgent requirement to create equality and balance in the counterbalance to China. - Lang Son with urban Bang Tuong and Ninh Minh passing through border gates is mainly through dynamic economic routes. Accordingly, Dong Dang - Lang Son border gate economy zone is considered to be the driving force for development in an open direction on both sides. In terms of interior, Dong Dang' BEZ connects Lang Son city with border gates and district areas of Lang Son through urban - rural, inner - suburban relations on the basis of exploiting relationships. internal economy. The area directly affected by this interaction is the border area, in which the border gates: Huu Nghi, Dong Dang, Tan Thanh, Binh Nghi, Coc Nam play the role of dual connection IN - OUT.

Figure 2. Model of spatial interaction territory opens Lang Son BEZ



- Construction and development of urban centers / urban complexes with integrated functions as an important national location connecting directly to the intersection between economic corridors - real - main cities and rings border belt linking East - West in national and international relations passing through the border gates of Vietnam – China.

- To build defense economic zones linked to the technical and social infrastructure system at ring route 2 (National Road 279) to form an urban system that serves as a bridge between the mountainous and midland urban areas back line;

- Many important transport planning items must be implemented. That is to upgrade the ring road, build a new border corridor according to the border project by the Ministry of National Defense, and at the same time build the system of fan roads.

5. Proposing some solutions to sustainably develop the model of green economic development space in the northeastern border area of Vietnam

(1) Implement the bilateral economic - trade agreements between Vietnam and China. To develop BEZ, specific policies and plans must be formulated, and all of that must be based on the cooperation agreements signed between the two states. Therefore, the solution to strengthen the signing of economic agreements between the two sides is extremely important. Such agreements must ensure principles of mutual benefit, prevent risks arising, do not harm partners, and adhere to international practices and practices.

(2) Develop and implement synchronously mechanisms and policies for border gate economic zone. Regarding economic - trade policy: (i) There should be a policy to diversify forms of economic exchanges through BEZ, creating open conditions and incentives for economic activities to meet benefits of both sides of the world; the Vietnamese side said it was “win-win”, while the Chinese side said “win together”. (ii) It is necessary to have a policy to encourage the export of legal quota, because in essence, quota trade is a method of buying and selling goods that is very flexible, rich, convenient payment and currently suitable for exchange. trade through the northern border gate stock zones of Vietnam.

(3) Investing in infrastructure construction for BEZ. The current motto is to upgrade the existing infrastructure and build new necessary infrastructures in the stock zones. First of all, it is necessary to upgrade the roads at the gate and go to the gate. Clearing and upgrading border belt routes and “herringbone” secondary roads going to border gates, large population dens, and building new roads in necessary places. It is necessary to determine the order of priority on the main roads leading to the major and important border gates such as National Road 1A, 18 and 70.

(4) Reform the state management mechanism in BEZ. In order to promote economic-trade exchange activities towards “comprehensive investment cooperation, long-term stability”; continue to reform the state management coordination mechanism between central and local agencies in the direction: (1) Establishing a government agency to assume the role of leading the coordination between all vertical agencies on state management in the SSC. (2) For the locality, at each securities trading zone, a management board should be set up; Pay attention to both smooth coordination but clearly define the state management functions and business functions in infrastructure development.

4. Conclusion

(1) The models of the stock market need to be identified as a specific model with many separate policies and mechanisms to promote the difficult economic situation while ensuring national security. Therefore, the organization of development orientation also needs to have separate priority conditions compared to the corresponding models in our country (industrial zones, export processing zones, economic zones ...);

(2) Approaching some models of socio-economic development in the Northeast border area through the reality in Ha Giang and Lang Son shows that each locality can and should proactively build its own Separate secondary dynamic economic region such as the full utilization of available potentials (tourism, minerals, livestock, tea, cardamom ...). Most importantly, the stock zones must be the border “buffer zone” to promote the highest economic efficiency and ensure the strategic position of national territorial security in the north in the context of national cooperation. the economy is more and more extensive, but there are also many difficulties and challenges;

(3) Research to approach the model of border upland areas in particular requires a scientific and creative approach, both respecting the common laws of the national market economy and taking into account the characteristics of The enemies of the border highlands are very difficult in terms of low level of development, difficulties in transport infrastructure, economy and society; complex in terms of national defense and social political security; Approaching dynamic spatial

model for Ha Giang province and open interaction model for development of Lang Son border gate economic zone, including linear development model and regional development model. The study of spatial models promises to bring about breakthrough development in regional economic geographic research towards dynamic and creative geography.

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ANALYSIS OF TFP AND ITS INFLUENCING FACTORS: A SEMI-PARAMETRIC APPROACH

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Abstract: *The study decomposes the growth of industries in provinces of Vietnam into labor, capital and the Total Factor Productivity (TFP) components. Consequently, factors may influence on TFP are examined. The results indicate that, the inclusion of provincial business environment, inequality situation and capacity for increasing equity in industries in Vietnam have a significant effect on TFP.*

Keywords: *Productivity, TFP, semi-parametric, panel data*

1. Introduction

After the boom of the stock market in 2007, resources in the Vietnam economy redistributed more efficiently, money stopped to flow into and circulated in the stock market instead of in industries that really needed finance for buying intermediate inputs. That caused technological change and restructured the economy over the last decade. To investigate this change, we estimate the parameters of a production function for the whole number of industries of Vietnam (excepting those belong to the political organizations). TFP obtained from the estimation is analyzed in order to determine causes of TFP growth.

2. Methodology and Proposed Model

2.1. Method

We use the semi-parametric method of Levinsohn and Petrin to solve the problem of correlation between unobserved variables and error. We start at the function (1)

$$y_{it} = \beta_0 + \beta_k k_{it} + \beta_l l_{it} + \beta_m m_{it} + \omega_{it} + \varepsilon_{it} \quad (1)$$

Where y_{it} is output of the industry i at the time t , l and m are the freely variables inputs labor and the intermediate input; k is the state variable capital. All of the above values are logarithm form.

The error includes the transmitted productivity component given as ω and ε , the i.i.d error term. The difference between two components is that the former is not observed by the economist but the firms.

The intermediate input m_{it} is assumed to depend on the firm's state variables k_{it} and ω_{it} :

$$m_{it} = m(k_{it}, \omega_{it})$$

The m function is monotonically increasing in ω . Therefore ω , the inversion of m can be

written as the following:

$$\omega_{it} = \omega(k_{it}, m_{it})$$

Following Olley and Pakes (1996), Levinsohn and Petrin assume that ω is a first-order Markov process, this gives us $E[\xi_{it}|k_{it}] = 0$:

$$\omega_{it} = E[\omega_{it} | \omega_{it-1}] + \xi_{it}$$

Now (1) becomes:

$$y_{it} = \beta_l l_{it} + \varphi(k_{it}, m_{it}) + \varepsilon_{it} \quad (2)$$

where $\varphi(k, m) = \beta_k k + \omega$

The procedure includes two stages. At the first, $\varphi(k, m)$ is solved by a non-parametric method, then we get β_l . The next step, β_k is estimated at t-1 based on the property of ω_{it} .

2.2. Data

2.2.1. Data for production function

In this study, value added is used to estimate total factor productivity of the Vietnam's industries in 63 provinces over the period of 2008 and 2018. Production value of an industry is total of firms' values in that industry based on Vietnam Standard Industrial Classification System at level 3 (VSIC3). However, data on value added (VA) is not available and needed to be calculated from the relevant components. Normally, VA is calculated from subtracting gross output from intermediate inputs. Unfortunately, data on production costs that are needed to calculate intermediate inputs are not available in the dataset. However, according to the General Statistical Office of Vietnam (GSO), VA is defined as the sum of two components: (i) labor compensation and (ii) capital rental payment. Therefore, in this study VA will be measured based on the factor income approach, which determines the incomes of labor and capital separately. The information on labor compensation, fixed asset depreciation, and profits are available in the Vietnam enterprise surveys (VES).

Regarding the VA, according to the GSO, labor compensation is defined as the total earnings that employees gain by participating in business or production process. It includes: (i) salary, bonus and other allowances; (ii) social insurance paid replacing salary; (iii) other incomes, which is not counted as production costs.

Capital income is defined as the sum of depreciation and net operating surplus.

Depreciation of fixed assets is observed from the accumulated attrition value of fixed assets annually. The depreciation of a specific year is equal to accumulated attrition value at the end of a year minus accumulated attrition value at beginning of a year.

Net operating surplus is amount of gain before paying tax from business, financial and other activities of enterprise during a year. It is the total profit of enterprise.

For inputs, various input factors are used in the production of output. Indeed, the definition of input is more complex than that of output (Oyeranti, 2000). In practice, however, inputs are often classified into capital, labor, and intermediate (or material).

First, capital input is concerned as the most problematic of input measures. The real value

of capital in a set period of time is required in the productivity measures. In the literature, the perpetual inventory method is often applied to measure capital input. This method requires estimates and assumptions on three parameters: service life, discard pattern, and depreciation method. Unfortunately, information relating to the vintage composition and purchase prices of fixed asset stock of firms is limited. Therefore, in the study, total assets including liquid assets and fixed assets at the end of year will be applied as a proxy for capital stock of firms.

Second, labor input is generally measured as the number of employees working as full time equivalent. It would be a problem in the case of part-time work. Therefore, total number of labor hours is preferred to measure labor input. Unfortunately, this data is not collected in the VES. However, it is worth noting here that part-time jobs and employees who are paid per hour are not common in Vietnam. Therefore, labor input measured as the number of full-time employees getting paid by firms at the end of the year is likely to be appropriate.

Third, intermediate inputs are required for estimating TFP by the Levinsohn and Petrin (2003) technique that uses intermediate inputs as a proxy for unobserved productivity to correct for the simultaneity between inputs and productivity in the firm's production function. Normally, intermediate inputs are calculated from production costs such as costs of raw materials, fuel, electricity, and other expenses for producing process. However, the information on the production costs is just only collected at some small sample surveys with randomly selected firms by the GSO. These sample surveys were not covered every years of the study period, thereby being unsuitable and useless for panel data analysis.

Therefore, intermediate inputs will be calculated by subtracting gross output from value added at constant prices.

2.2.2. Data for estimating influencing factors of TFP

The Provincial Competitiveness Index (PCI) on Vietnam's business environment is an annual business survey by Vietnam Chamber of Commerce and Industry (VCCI). PCI presents the economic governance quality of provincial authorities. It is complex index comprising ten sub-indices: 1) low entry costs for business start-up; 2) easy access to land and security of business premises; 3) a transparent business environment and equitable business information; 4) minimal informal charges; 5) has limited time requirements for bureaucratic procedures and inspections; 6) limit crowding out of private activity from policy biases toward state, foreign, or connected firms; 7) proactive and creative provincial leadership in solving problems for enterprises; 8) developed and high-quality business support services; 9) sound labor training policies; and 10) fair and effective legal procedures for dispute resolution.

One of variables may affect the quality of human capital is income inequality in the economy. Laborers may have motivation to work harder if their income from working hours adequates to their ability and skills. In developing economies, employees are overworked and underpaid is quite popular; this results in the growth decline in long term.

Based on analyses of economic scale of the production in industries, we believe that industries of Vietnam are in developing age. Taking chances to expand the production will make industries gaining a higher growth level.

We continue the stage 2 and decompose the TFP component in the function. Generally, all of provinces are in economic returns to scale years. TFP values in both between and within groups are higher than 1. This implies that industries should be expanded their size, increase their available equity.

Table 3: Description of TFP’s impact

Variable		Mean	Std. Dev.	Min	Max	Observations
TFP	overall	1.316374	.0738363	1.171851	1.797909	N = 690
	between		.0595966	1.208887	1.511087	n = 63
	within		.0440036	1.137137	1.727438	T = 10.9524
pci	overall	58.69059	5.069531	36.39	75.96	N = 690
	between		3.411656	51.64607	68.836	n = 63
	within		3.785837	40.73966	68.62527	T = 10.9524
gini	overall	36.08348	1.550426	34.8	39.3	N = 690
	between		.0081964	36.08182	36.12	n = 63
	within		1.550406	34.76348	39.30166	T = 10.9524
ln_eq	overall	5.055975	.8875139	2.043986	8.786043	N = 690
	between		.8315119	3.901067	8.392402	n = 63
	within		.324674	3.198894	6.014285	T = 10.9524

After employing Hausman test, the random effect model is chosen to measure impact of potential factors on TFP of industries.

Table 4: Factors impact on TFP

corr(u _i , X) = 0 (assumed)		Wald chi2(3) = 111.03			
		Prob > chi2 = 0.0000			
----- theta -----					
min	5%	median	95%	max	
0.7370	0.7484	0.7484	0.7484	0.7484	

TFP	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
pci	.0024488	.0004256	5.75	0.000	.0016147 .0032829
gini	-.002867	.0010625	-2.70	0.007	-.0049495 -.0007845
ln_eq	.0374771	.0042867	8.74	0.000	.0290754 .0458788
_cons	1.086612	.0525171	20.69	0.000	.9836804 1.189544

sigma_u	.05004342				
sigma_e	.04314293				
rho	.57364657 (fraction of variance due to u _i)				

If a province improves their business environment ten points, industries in that region will have a chance to increase their TFP by 2%. At the state level, TFP of industries will rise if inequality in Vietnam declines. That demands adjustments in macroeconomic policies to change welfare of disadvantaged people. At firm or industrial level, equity has big impact on TFP, an implication for industries is that they should use profit to expand their production, exploit the returns to scale situation.

4. Discussion and Conclusion

Through the result of research shows that, to increase TFP it is necessary to improve the PCI. The Vietnam PCI 2019 report has outlined the 5 biggest difficult problems that businesses face through the PCI 2019 survey, including: finding customers (63%), accessing capital (35%), finding suitable employees. (34%), looking for a business partner (28%) and market volatility (27%). Although there have been certain improvements, still 18% of enterprises are concerned about the fluctuation of policies and laws.

Recommendations for enterprises

The enterprises need to do some important things below:

- The first, the firm need to increase equity, expand production scale in each itself.
- The second, improve business capacity and business efficiency to increase equity capital to growth up production scale, expand business
- The third, enterprises need to have technology solutions to increase the level of automation and digitization in goods production and service provision to decrease production costs.

Recommendations for local authorities

The local authorities should have PCI improvements:

- Firstly, it is necessary to increase the dynamism and creativity of local authorities
- Secondly, try more in improving the business environment, contribute to promoting the development of firms and attracting investment.
- Thirdly, the transparency in term of information also need significantly improve. Firms can completely access the planning documents cover important business such as budgeting, land use planning, infrastructure projects, and investment incentives.
- Fourthly, furthermore provincial leaders should improve the business support services in both quality and quantity. Five categories of business services should be supported: i) Market information; ii) Legal consultancy; iii) Business matchmaking services; iv) Trade promotion and trade fair/exhibition services; and v) Technology and technology-related services.
- Finally, to promote economic performance in the short term, provinces should focus on land access and labor training as well as changing fair competition index and reduce informal charges.

Summary, improving quality economic governance, favorable business environment, clear administrative procedures will bring the benefits in the long-term for many provinces. Even-though, it is contributed to overcoming limitations of geographical location or underdeveloped infrastructure areas.

Recommendation for Government

The Government of Vietnam needs to strengthen efforts to promote achievements in the areas of education and industrial relations. By enhancing the working skills of Vietnamese workers and enhancing understanding between employees and employers. This will be a step towards mitigating the negative impact of the automation process at businesses.

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THE FOURTH INDUSTRIAL REVOLUTION AND CHALLENGES FOR VIETNAMESE HUMAN RESOURCES

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Abstract: *The 4th Industrial Revolution is evolving strongly around the world and directly affecting Vietnam. This is a great opportunity for developing countries to catch up with global trends of development. However, under the influence of the revolution, factors that are considered the advantages of developing countries, including Vietnam, such as the young, low-cost manual workforce, will disappear. In order to utilise the opportunities and overcome the difficulties and challenges associated with the industrial revolution 4.0, the issue of exploiting human resources, constructing and developing high-quality human resources is of essential importance for Vietnam. The paper analyses the characteristics of the Industrial Revolution 4.0 and its impact on the human resources development. Based on the factual current situation of the human resources of Vietnam, the paper identifies the challenges that the Industrial Revolution 4.0 has created and suggests certain potential measures to tackle those problems.*

Keywords: *Industrial Revolution 4.0, high quality human resources, human resources, human resources development.*

1. Overview of Industrial Revolution 4.0

Until now, humanity has gone through three industrial revolutions and is entering the fourth one, the so-called Industrial revolution 4.0.

The first industrial revolution happened from the late eighteenth century to the mid-nineteenth century, which began with the construction of railroads system and the invention of the steam engine, opening a new era in history - era of mechanical engineering.

The second industrial revolution happened during the period from the late nineteenth century to the early twentieth century. This is associated with production chains, fostered by the invention of electricity and assembly lines.

The third industrial revolution began in the 1960s and is often called The Computer Revolution or The Digital Revolution because it was influenced by the development of semiconductors, supercomputers (1960s.), personal computers (1970s and 1980s) and the Internet (1990s).

The fourth Industrial Revolution (Industrie 4.0) - this term was used for the first time at the 2011 Hannover Fair, which is the world's leading Fair for technology and industry. In 2012, this concept was mentioned in the High-Tech Strategic Action Plan approved by the German government. On January 20, 2016, in the 46th World Economic Forum that took place in Switzerland with the theme "The fourth industrial revolution", the concept of the fourth industrial revolution or

they. Industry 4th is officially confirmed. The development of Industry the 4th was driven by major technological breakthroughs such as artificial intelligence, robots, nanotechnology, the Internet, biotechnology, materials science, energy storage and quantum informatics.

The main characteristics of the Industrial revolution 4.0 are intelligent and highly integrated production, flexibility, environmental friendliness. This revolution is not limited to automatic production, integrated intelligent systems, but also includes significant changes in user expectations (on-demand product and fast delivery). Together with new technologies such as the Internet of Things (IoT), collaborative robots, 3D printing and cloud computing, the Industrial revolution 4.0 creates “smart factories” or “digital factories”. In such factories, virtual space systems monitor physical processes to create a virtual copy of the physical world. With the Internet of Things, virtual space systems interact with each other and with people in real time, and through Internet Services (IoS), users will be involved in the value chain through the use of these services.

Professor Klaus Schwab, President of the World Economic Forum, pointed out three distinctive features of the fourth industrial revolution:

The first feature is speed. The fourth industrial revolution is the result of a multifaceted, deeply interconnected world where new technology always initiates newer, more advanced technologies. This development is displayed exponentially rather than linearly;

The second feature is related to the scope and depth. It is the combination of the digital revolution and many technologies that lead to unprecedented changes in economic, business, social, personal models, in working purposes and method, and in the way we define who we are.

The third feature is systematic impact. It involves the transformation of the entire system, across and between countries, companies, industries and society as a whole.

Industrial Revolution 4.0 is the foundation for the economy to drastically transform from a model based on resources and low-cost labor to a knowledge-based economy; which changes the fundamental concept of innovating technology and equipment in production lines. During this revolution, the labor market will be severely affected by the dramatic changes in supply and demand of labor as well as the labor structure. In some fields, with the existence of robots, the number of staff needed is estimated to be reduced to only 1/10 compared to today's level. Hence, the remaining 9/10 human resources will be forced to either change jobs or become unemployed. As automation replaces people in many sectors of the economy, workers will have to adapt quickly, or they will become redundant and consequently face unemployment. The labor market will be classified into low-skilled workers and high-skilled workers. Accordingly, the fourth industrial revolution not only threatens the jobs of low-skilled workers, but even intermediate-skilled workers (intermediate, college graduates) will be affected, if they are not equipped with novel skills required for the economy of Industrie 4.0.

2. Challenges for Vietnam

Industry the 4th is evolving with an accelerating rate, posing significant challenges for the human resources of Vietnam:

Firstly, the most prominent challenge that Vietnam has to address when entering the Industrie 4.0 is the fact that the current Vietnam economy still relies heavily on industries that use cheap

labor and natural resources, in which the skillset of workers is outdated. According to the International Labor Organization (ILO), Vietnam is one of the countries that is most severely affected by Industry 4.0. Industries that use a lot of manual workers will suffer significant impact such as high risk of unemployment due to the development of automatic technology and artificial intelligence.

Secondly, Vietnam faces challenges in the quality of human resources, i.e the low level of professional and technical skills (as of 2019, trained workers only account for 22.9% of the total number of 55.4 million workers in Vietnam; labor productivity is much lower than many countries in the ASEAN region. Vietnam's labor productivity growth rate in 2017 by PPP 2011 reached \$ 10,232, only equal to 7.2% of Singapore, 18.4% of Malaysia, 32.6% of Thailand, 43% of Indonesia, 55% of the Philippines. Thus, industries that employ unskilled workers would experience high risk of unemployment due to the development of automatic technology and artificial intelligence.

Thirdly, the current labor structure, which is based on educational level, has shown a number of incompetencies. Skilled workers are mainly located in processing industries, transportation, warehousing, and communication (up to 80%). The education and training sector has the largest percentage of workers with professional secondary education, accounting for 30%. College and university graduates mainly work in management, research, commerce, processing industry and education and training. Workers with bachelor degrees working in non-direct production industries account for 65%.

Graduate degrees are mainly distributed to education and training, management, research, health, science and technology, and processing industry. In which, workers in the industrial sector, technical and natural sciences only account for 10%. Postgraduates in rural areas are found in only two majors, education and training, and processing industry, while Vietnam is currently an agricultural country. This is a concerning issue in employee placement and employment policies.

According to the Labor Force Survey of the General Statistics Office, the unemployment rate of Vietnam in 2019 is 2.19%. Among this, unemployment rate is highest for graduates from college or higher (27.2% of the total unemployed), while the unemployment rate of the group "has received vocational training" (including including: elementary, vocational secondary and college) is 5.3% and the lowest rate is for untrained people (2.2%) .This shows the mismatch between professional training and job demand of the labor market, and the bottlenecks of Vietnamese human resources. Education is currently prioritised over production, engineers and tertiary graduates are having several difficulties in finding jobs; manual workers are unable to meet the standard job requirements.

Fourthly, the internal challenges from the development process and from the socio-economic environment in which Vietnam is also worth consideration. As Vietnam is making remarkable progress in globalisation, the development of high-skilled labour markets is formed and promoted gradually. As a consequence, the requirements for high-quality human resources would not stop at meeting domestic standards, but would constantly expand to regional and global standards for foreign markets.

3. Potential solutions for human resource development in the Industrial revolution 4.0

The fourth industrial revolution has significantly impacted the economy of every country in terms of structure, level of development, business model, labor market; blurred the line between

human and machine, significantly improved production efficiency. The question for human resource development, especially high-quality human resources, is to utilise the opportunities and achievements of the industrial revolution 4.0 for sustainable development. New conditions and requirements are constantly added to this issue, which demands a comprehensive and long-term strategy, with a system of synchronous, practical and feasible solutions. In this strategic action plan, it is necessary to focus on the following solutions:

First, to construct and to finalise the overall strategy, the system of mechanisms and policies on developing high-quality human resources. The strategy for developing high-quality human resources must define clear objectives, scale, roadmap, and overall mechanisms and policies. The strategic objectives must prioritize the resolution of the conflicts between the development of quantity, quality and structure; determine the size, quantity and structure of each type of human resource accordingly.

In order to develop high-quality and effective human resources, it is necessary to regularly adjust, complement and optimise systems of mechanisms and policies to create a facilitating legal corridor. To be more specific, we should develop regulations, mechanisms and policies to promote education and training in accordance with social needs, connect training institutions with enterprises with an aim to rapidly increase the scale and improve training quality.

The reconstruction and utilisation of mechanisms and policies to create a driving force for the development of high-quality human resources must be done synchronously in many aspects such as education - training, science - technology, environment. employment, income, social security, insurance, social protection, health care, labor market development policy, housing and living conditions, etc.

Second, to comprehensively renovate education and training.

This is a key solution to develop human resources to meet the requirements of the labor market in the context of the industrial revolution 4.0. First of all, it is necessary to renew the content and training program to review, reorganize, and re-plan the network of higher education institutions and vocational education in alignment with the socio-economic development planning and the labor market demand in every country, every region and province. In particular, we should review training methods and university administration systems, promote the application of information technology and digital technology in teaching activities and improve the capacity and quality of the competencies of teachers and administrators. At the same time, enhancing effective cooperation between the State, enterprises and universities to promote the development of a select number of disciplines, especially information technology. In addition to training activities, it is necessary to promote scientific research and improve the quality of scientific research to enhance qualifications and professional knowledge, and apply research into institutional transforming activities. Among the, special attention should be paid to simulation research and interactive research.

Third, to ensure the connection between the education and training program with the use of high quality human resources. In order to achieve this, it is essential for training institutions to pay great attention to the management of the quality of “output” by using competencies assessment in the training process. On the other hand, training institutions also need to equip students, trainees

and graduates with important skills such as communicating, researching and reporting using international documents, information technology, creativity, adaptability,... in order to ensure that the trained workforce will be able to cope with the accelerating development of working requirements.

Fourth, to foster the work of forecasting the demand in the human resource market in the near and further future. This is an essential solution that requires special attention. As the Industrial revolution 4.0 is having a great impact on the structure of the economy, certain industries are likely to witness the decline or disappearance of jobs in the future, while others are likely to experience the evolving of new jobs. These changes can lead to consequential changes that would be challenging if there is a lack of proper estimation and careful planning beforehand.

Fifth, to restructure the human resource policy.

To develop appropriate mechanisms and tools to use human resources effectively, create a driving force for the development of human resources. To reconstruct policies on the human resources utilisation in the state sector in accordance with the rules of the market economy.

To develop standards and assessment procedures for the workforce based on actual capacity, results, performance, actual productivity.

To develop remuneration systems that reflect competency levels and real job results.

Sixthly, to actively foster the International Economic Integration process to support developing human resources

To build the legal system relating to human resource development that is suitable with current level of development, while maintaining consistency with international practices and laws. To develop educational and training content, programs and methods in accordance with international standards and specific characteristics of Vietnamese labour market; to strengthen the collaborative training program between Vietnamese and international educational and training institutions.

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EFFECT OF ENERGY CONSUMPTION & ECONOMIC GROWTH ON ENVIRONMENTAL DEGRADATION IN VIETNAM, CAMBODIA AND THAILAND

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Abstract: *This study empirically investigates the impact of energy consumption (electricity consumption) and economic growth (in terms of annual Gross Domestic Product growth rate) on the environmental degradation in form of CO₂ emissions. The study aims to identify the interrelationship among the three variables namely, GDP growth rate, electricity consumption & CO₂ emissions. The analysis is based on the panel annual data for the period of 1971-2014. The study analyzes based on the methods of fixed, random effects, and pooled ordinary least squares. The data were collected from World Bank for Vietnam, Cambodia and Thailand used in the study. Our results demonstrate that energy consumption has negatively affected on CO₂ emission while there does not exist an influence of GDP growth rate on CO₂ emission.*

Keywords: CO₂ emissions; Energy Consumption; environmental degradation; economic growth.

1. Introduction

Climate change has become an absolute environmental challenge in the last couple of decades in every continent and all sectors across the world. It occurs due to the increase in temperature of the atmosphere by burning of fossil fuels and releasing of greenhouse gases most specifically Carbon dioxide. These days, massive quantities of fossil fuels have been used for energy source to power the economy of a country. This scenario significantly contributes to a large percentage of carbon dioxide emissions. By comparing with other economic sectors, it was reported in the literature that the consumption of energy in buildings accounts for about one third of the total consumption and responsible for an equal portion of carbon dioxide emissions in both developed and developing countries. Similarly, an economic growth of a country directly or indirectly affects the CO₂ emissions in the environment. There are manifold links between a country's economic growth and environment. The environment provides resources for the economy and acts as a sink for emissions. Aye & Edoja (2017), investigated the effect of economic growth on CO₂ emissions and indicated that in the low growth regime, economic growth has a negative effect on CO₂ emissions but in the high growth regime, a positive effect with the marginal effect being higher prevails.

With the advent of various technology encroachments and ever progressing economic growth with the increasing energy consumption per capita, CO₂ emissions is a major distress not only for Vietnam but for the whole world. Since liberation, sustainable economic growth has been an issue of major concern in Vietnam. With progressive economic growth, environmental protection must be considered for a high and sustainable economic growth.

Hence therefore this paper aims to establish a relationship between energy consumption of Vietnam, economic growth in terms of real Gross Domestic Product (GDP) and combined effect on degradation of environment in terms of CO₂ emissions using annual historical data for the years 1989-2014.

Literature Review

There is a wide variety of hypothetical and experimental studies finding the interrelationship of energy consumption, economic growth and environmental degradation in terms of CO₂ emissions in both developed and developing countries. Different empirical studies have targeted on different countries, time periods and have analyzed different proxy variables for macroeconomic and energy indicators and their combined effect on environmental degradation. Literature also reveals some eminent work done in relation to the effect of energy consumption and economic growth on environmental degradation. Some of the earlier studies conducted on this topic used Granger Causality, Unit root and co-integration test to establish the relationship among the three variables i.e. Energy consumption, real GDP and CO₂ emissions.

Nain et.al.(2017) examines the short run and long run causal relationships among the three variables by using aggregate and disaggregate (sectoral) energy consumption measures using the annual data from 1971 to 2011. It includes Toda-Yamamoto causality test and reveal that the long run and short run causal relationship among the variables is not uniform across sectors. Also, the weights of evidences from the study indicates that there exists a short run causality from electricity consumption to economic growth and to the CO₂ emissions.

Tiwari (2011) revisits the evidence from India's energy consumption, CO₂ emissions and economic growth and examines causality in both static and dynamic frameworks among the three variables with the time series data for the period of 1971-2007. The study uses IRFs and VDs whose results indicate that CO₂ emissions has positive impact on energy use and capital but negative impact on population and GDP. It implies that in the framework of production functions, energy use in the production process substitute labor and capital. It claims that as energy consumption(EC) generates GDP, therefore, reduction in EC has a negative impact on economic growth and Indian economy may confine to developing economy.

Ghosh (2009) establishes the presence of Granger Causality running from real GDP and electricity supply to employment without any feedback and the author uses supply of electricity instead of electricity consumption. Paul and Bhattacharya (2004) examines the different direction of causal relation between energy consumption and economic growth in India. Applying Engle-Granger co-integration approach combined with the standard Granger causality test on Indian data for the period 1950-1996, the study finds a bi-directional causality between energy consumption and economic growth. It also applies Johansen multivariate co-integration technique on the different set of variables.

Nain and Ahmad (2012) examines the relationship between electricity consumption and economic growth in India at aggregated and disaggregated level using annual data of 1970-2010. The study suggests that there is a long-term relationship and economic growth at aggregated level. In agriculture,

commercial and industrial sectors the ARDL test exhibit a long-term relationship except for the domestic sector at disaggregated level. Shearer (2017) discusses about Paris climate agreement in which world's countries decided to limit the increase of global mean temperature to well below 2° and make efforts to limit temperature increase to 1.5° above preindustrial level. This aims to frame a country level emission pledge known as Nationally Determined Contributions (NDC's).

We are confining our literature review only on the studies done in the perspective of India and above are the explanations and key highlights discussed in the studies done related to our topic. To discuss the impact of energy consumption and economic growth on carbon dioxide emission in the specific situation in South-East Asia, this study has conducted a panel research. To the best of our knowledge, a very few studies has focused on the impact of energy consumption and economic growth on carbon dioxide emission in developing countries, especially in the low-middle income countries. The study aims at fulfilling this gap by analyzing the relationship between energy consumption per capita and economic growth with carbon dioxide emission in a very dynamic region in South-east Asia. The purpose of the study is to investigate the link between energy consumption and economic growth to carbon dioxide emission in the case of Vietnam, Cambodia and Thailand over the time period of 1971 to 2014.

The structure of the study is as follows. Section 3 discussed the method. Section 4 presented results. Section 5 covers the discussion and conclusion.

3. Method

3.1. Data

The data used in the study is sourced from the database of World Bank for relevant countries used. Data that we use in this study were collected for Vietnam, Cambodia and Thailand. Using a sample dataset during the period of time from 1971 to 2014 on a yearly basis, the data is analyzed using Stata 15 software.

In this study, the data consist of CO₂ emission, GDP growth and energy consumption as proxy, respectively, to illustrate the relationship between climate change, economic growth and development of energy industry. The study has a conduct on three South-East Asia countries on Peninsula, including, Vietnam, Cambodia and Thailand.

Table 1: Measurement of Variables Used in the Study

Dependent Variables	Abbreviation	Source
CO ₂ emission (kilo tons)	CO ₂	World Bank
Independent Variables		
GDP growth (annual %)	GDPgrowth	World Bank
Electricity consumption (kWh per capita)	ELECTRIC	World Bank

Source: Author

3.2. Research Model

Impact of energy consumption and economic growth on CO₂ emission has been investigated in some empirical studies in the world. Based on theoretical consideration, it is evident that the study is used a panel model with pooled OLS, fixed effect method (FEM), and random effect method (REM).

A large number of previous studies have been applied common regression models such as Pooled Ordinary Least Square (Pooled OLS), Fixed Effects Model (FEM), and Random Effects Model (REM). In this study, we will investigate based on the steps and we will analyze how to select the best model among three models.

In order to discover the analysis of this relationship, we hypothesize the following model:

$$CO2_{it} = f(GDPgrowth_{it}, ELECTRIC_{it})$$

The equation for the fixed effect model is:

$$Z_{it} = \beta_1 X_{it} + \beta_2 Y_{it} + \alpha_i + u_{it} \quad (3.1)$$

$$CO2_{it} = \alpha_i + \beta_1 GDPgrowth_{it} + \beta_2 ELECTRIC_{it} + u_{it} \quad (3.2)$$

Where:

- α_i ($i=1 \dots n$) is the unknown intercept for each country (n country-specific intercepts),
- Z_{it} is the explanatory variable; i, and t denote for the country i and time t. This can be abbreviated by CO₂,
- X_{it} , Y_{it} denote independent variables. They are GDP growth and ELECTRIC.
- β_1, β_2 are the coefficients for those independent variables,
- ϵ_{it} is the error term.

Regarding random effects model, the rationale behind REM is that the variation across entities is assumed to be random and uncorrelated with the predictor or independent variables included in the model. An advantage of random effects is that you can include time invariant variables (i.e. gender). In the fixed effects model these variables are absorbed by the intercept. REM allows to generalize the inferences beyond the sample used in the model

The random effects model is:

$$Z_{it} = \beta_1 X_{it} + \beta_2 Y_{it} + \alpha_i + u_{it} + \epsilon_{it} \quad (3.3)$$

$$CO2_{it} = \alpha_i + \beta_1 GDPgrowth_{it} + \beta_2 ELECTRIC_{it} + \epsilon_{it} \quad (3.4)$$

Where:

- α_i ($i=1 \dots n$) is the unknown intercept for each country (n country-specific intercepts),
- Z_{it} is the explanatory variable; i, t denote for the country i and time t. This can be abbreviation like CO₂,

- X_{it} , Y_{it} denote independent variables. They are GDP growth and ELECTRIC.
- β_1, β_2 are the coefficients for those independent variables,
- ϵ_{it} is the error term within entity error.

4. Empirical Methodology

We analyse the effect of economic growth & electricity consumption on the CO₂ emission with a panel data for the period of 1971-2014. Table 2 presents data description including 282 observations of 3 South-east Asian countries over a 44-year period from 1971 to 2014. In fact, for each country with each index, first row is mean. Respectively, rows are minimum, maximum, standard deviation and the number of observations used in the study. In general, as far as electric consumption in average, Thailand is the leading country, with 1080 kWh per capita, followed by Vietnam with 451 kWh per capita, and Cambodia is at the third position with 92 kWh per capita. In addition to CO₂ emission, Thailand is once again the leading country in the group of 3 selected countries, which is over 41 times the second leading country – Cambodia. Vietnam is the country at the bottom of the CO₂ emission list, with an amount of one seventh compared to Cambodia.

Table 2: Descriptive Statistics

country	CO2	GDP growth	Electric
Cambodia	3278.665	7.831791	92.07772
	1540.14	.086697	13.51334
	6684.941	13.25009	271.3673
	1605.193	3.104301	75.48331
	20	20	20
Thailand	135955.8	5.706102	1080.51
	19248.08	-7.633734	120.3268
	316212.7	13.28811	2538.796
	98802.98	3.840349	799.7707
	44	44	44
Vietnam	451.4759	6.421187	451.4759
	68.00038	2.789292	68.00038
	1423.688	9.54048	1423.688
	417.4562	1.644947	417.4562
	30	30	30
Total	64480.55	6.386595	669.4499
	68.00038	-7.633734	13.51334
	316212.7	13.28811	2538.796
	95180.05	3.209405	719.8684
	94	94	94

Source: Result from the analysis

In order to see the correlation among variables, the correlation coefficients are calculated as in Table 3.

Table 3: Correlation Coefficients between Variables

	CO2	GDPgrowth	Electric
CO2	1.0000		
GDPgrowth	-0.3730	1.0000	
Electric	0.9130	-0.3999	1.0000
	0.0002	0.0001	0.0001

Source: Result from the analysis

The correlation coefficient between electric consumption and CO2 emission is rather high of 0.913 which is positive, at the same time, the correlation coefficient between GDP growth and CO2 emission is lower of - 0.373 which is negative and more, the corresponding probability value of the test, in which show the correlation coefficients are significant or not, are all smaller than 0.05. This suggests that if there exist linear correlations between each of variables of electric consumption and GDP consumption to CO2 emission, then they are all significant.

Quantitative research method is used to find empirical evidence on the factors affecting the CO2 emission. The regression methods on the panel data are used include pooled OLS (Pooled Ordinary Least Square), FEM (fixed-effect model) and REM (random-effect model). In respect to FEM, individual specific effect is significantly correlated with the independent variables, assuming that there is a true effect size which underlines all studies in the study, and differences in observed effects are due to sampling error. In connection to REM, the true effect can exactly vary from study to study.

As suggested in Wooldridge (2010), pooled OLS is more exactly to estimate if the study can select a different sample for the period of time of the panel data. Because of existence of inadequate pooled OLS, either FEM or REM should be employed in relation to the situation of the same sample of entity used in the study. Thus, the results are examined by fixed or random effects models that are suggested are more possibly exact than using by pooled OLS.

In general, the effect size may be either higher or lower in this study. Due to the difference in the mixes of participants, implementations of interventions, and other reasons, it is evident to recognize that there might be different effect sizes underlying different analyses. Breusch and Pagan Lagrangian multiplier test for random effects can be used to choose either Pooled OLS or REM. In the theory, the results the variance for u is 0 and the p-value is 5% which means the study cannot reject the null hypothesis and hence select to do a pooled regression. Otherwise is REM. The result is represented in the Table 4 below.

Table 4: Breusch and Pagan Lagrangian for Homoscedasticity

	Value
Chibar2 (01)	0.00
Prob > Chibar2	1.0000
H0: Constant variance	

Source: Result from the analysis

First of all, Breusch and Pagan Lagrangian multiplier test is used for the choice of model between pooled OLS and REM. The p-value of the Breusch and Pagan Lagrangian multiplier test

is very close to one. For the significance of 5%, the appropriate model is POLS. The estimation result is presented in Table 5.

Table 5: Results of Econometric Modeling with dependent variable of CO2 emission

Variables	Coefficient	Probability
GDPgrowth	-277.5328	0.841
Electric	120.2232*	0.000
C -14230.37		0.23

Notes: * indicates significance level of 1%

Source: Result from the analysis

5. Conclusion & Policy Implications

According to Table 5, the estimation of the Pooled Ordinary Least Square model is finally selected as the best model to discuss. Regarding the estimation results, our analysis shows the impact of energy consumption on CO2 emission – in the case of three South-east Asian countries, we can say that: Regression coefficient of energy consumption is 120.2232, which is positive and statistically significant at 1% significance level. An increase in energy consumption by 1 kWh per capita, on average, will cause an increase of CO2 emission by 120.2232 kilo tons. While regression coefficient of GDP growth is -277.5328, which is negative but statistically insignificant.

In this study, energy consumption which is the factor impacting the CO2 emission in three South-east Asian countries is focused. Empirical results demonstrate that energy consumption is significant to CO2 emission. Thus, in these South-east Asian countries the energy consumption is one of the key point in increasing the air pollution. The government of these countries should pay attention to the use of energy for economic and citizen life in worrying of climate change.

Therefore, the study concludes that Vietnam, Cambodia and Thailand should not frame exclusive energy policy for the reductions in CO2 emissions. Instead, these countries should frame policies considering sustainable economic development. Vietnam, Cambodia and Thailand should discover substitutable sources of energy by making huge investment in R&D and through international associations. Hence, Vietnam, Cambodia and Thailand should frame policies which aggravates the sustainable development & also by taking in account of specific carbon emission-related issues on a sectoral basis in place of an aggregated policy for the whole economy.

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INTEGRATED REPORTING - NECESSITY OF VIETNAMESE ENTERPRISES IN THE CONTEXT OF INTERNATIONAL ECONOMIC INTEGRATION

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Abstract: *The international integration context requires the enterprises to comply with the regulations in the presentation of information in financial statements. One of the trends in information integration to help users get useful is integration reporting. The article is based on surveying the managers of enterprises to analyze and evaluate to get an overview of issues related to integrated reporting. The paper supports Vietnamese enterprises to look more comprehensively about the quality of information to have careful preparations for implementation. This also contributes to improving the quality of accounting information for Vietnamese enterprises in the international economic integration.*

Keywords: *accounting information, integrated reporting, international integration.*

1. Introduction

Information needed to evaluate an organization's ability to create sustainable value that reflects the essential needs of its users. The enterprises have aimed to provide practical and useful information on the basis of information integration. Aggregate information to help users flexibly and easily make business decisions (Biondi & Bracci, 2018). Systematic information meets quality standards intended to provide useful value. The enterprises need to demonstrate the responsibility and role as an information provider to ensure user convenience and flexibility. Mauro et al (2020) shown that integration reporting (IR) should be a comprehensive view of business strategy and operations. It is a way of expressing the relationship between financial performance and non-financial performance as well as benefits by meeting stakeholder expectations, enhancing company reputation and brand.

Sofian & Dumitru (2017) have pointed out the difference between IR and the previous reporting mode, with particular emphasis on IR focusing more specifically on the physical aspects of organizational performance. IR will accommodate the ability to link complex information, drive sustainability criteria, comment on financial management and governance model tightly and fully integrate. This means that the IR promises to address the limitations of the ability to provide comprehensive information compared to traditional financial statements. Enterprises that do well in comprehensively reporting the above issues will help increase the transparency and reliability of information provided to investors. From there it will have the opportunity to attract the attention of many international investors (Carol, 2018). IR is the latest development in the proposed reporting

initiatives that have sought to improve the usefulness of corporate reporting as a global framework in December 2013 and get updated sessions the latest version 2020 (Integrated reporting, 2020).

However, for Vietnam, presenting corporate information in IR is still a relatively new issue. The implementation of IR brings certain values to enterprises but also it poses challenges in perception, human resources, information technology application... that have influenced the direction of a comprehensive report (Nguyen, 2016). Research on IR is still limited to Vietnam and there is currently no survey on the perceptions of enterprises managers on this issue. Therefore, this article focuses on reviewing their views to have suitable suggestions in the application process in the future. The orientation of IR application for enterprises in the context of economic integration is a matter of concern to improve the quality of information. This increases the value in the financial market, thereby attracting investment to develop enterprises.

2. Overview of integrated reporting

IR ensures the quality of information in reports. IR benefits all stakeholders including enterprises, suppliers, partners, regulators and stakeholders. The main contents of the IR cover the regulatory framework, principles and related contents (Integrated reporting, 2020), specifically:

- IR framework is implemented on the basis of a number of principles. This helps to balance the relevance and flexibility of the information provided. A summary report must comply with the regulations to ensure the information responsibility of the corporate governance.

- IR is intended to provide detailed information about the resources and relationships used and affected by the organization. This can also explain the external involvement of the organization and capital to create short, medium and long term value.

- The purpose of this framework is to establish the principles and factors that govern the overall content of IR. This helps to identify the information included in the reports for use in evaluating the organization's ability to be of value.

- The principles that underlie the preparation of an aggregate report, inform its content, and information presented as providing details on the organization's strategy; show an overall picture of the combination, the relationship between the parties; provide insight into the nature of the organization's relationships with key stakeholders; disclosing information on issues that fundamentally affect the organization's ability to create value in the short, medium and long term; general reports must be brief; important issues, both positive and negative; ensure a consistent basis over time; and comparative information to identify the problem is relevant.

- IR includes eight basic contents about an overview of the organization and the external environment; how to organize and manage; business model; risks and opportunities; strategy and resource allocation; performance efficiency; prospects; and information presentation facility.

3. Issues of concern about IR applying for Vietnamese enterprises

Some Vietnamese corporations have implemented IR such as FPT, Bao Viet... These are pioneering enterprises to contribute to improving the quality of information in financial statements for users. However, this issue also faces certain obstacles (Nguyen, 2016; Nguyen, 2017; Luu, 2020). Based on the survey of some managers in Vietnamese enterprises that the managers are

planning to apply IR but they still wonder about many issues such as human resources, information technology, costs... and the results show that:

- Managers of enterprises are still skeptical of the practical benefits compared to the costs spent to implement IR. Managers are concerned about the challenges and difficulties posed for enterprises.

- Awareness of the enterprise managers does not fully understand the importance and practical value that IR brings. The usefulness and confidence of information users, particularly foreign investors. Through IR, information is transparent and promptly meets international standards. This makes sense for the enterprises to fulfill its obligation and responsibility as well as appropriately inform the users.

- The degree of caution of enterprises executives. The trend of competition is so fierce that managers are reservations about information. They suspect that information provided to competitors to fully understand will be difficult in business strategy. This also interferes with the standard IR communication.

- Human resources for implementation are not enough. The accountants of the enterprises have not fully envisioned the content related to IR information. Some regulations need to ensure the principles when disclosing information, while accountants do not fully understand the meaning of the relevant indicators.

- Information technology in data processing applications has not received attention and investment to support information processing. Information under IR requires the level of information processing, updating must be through the application of information technology with some specialized software. The application requires assistance for the execution.

- The guidance and training materials from professional organizations or enterprise support agencies are not interested. These are barriers to implementing IR regulations.

4. Solutions for applying IR of Vietnamese enterprises

Based on the difficulties and problems of enterprises, the article proposes a number of solutions to contribute to effective IR implementation to improve the quality of accounting information as well as to match the trend of integration, specifically:

Firstly, state agencies, particularly the State Securities Commission, need to have appropriate guidelines and policies to encourage enterprises to enforce IR to improve the quality of information;

Second, the increase in the targets in the corporate credit rating list for the enforcement units is sufficiently warranted under the IR;

Third, professional organizations need to organize seminars so that enterprises better understand the importance of following IR. In addition, these organizations need to increase the printing of (translatable) material to support enterprises. Furthermore, these organizations need to open training courses and guide implementation of the IR standards;

Fourth, enterprises managers need to raise a sense of responsibility in providing useful and convenient information to users. Furthermore, managers need to invest in technology with supporting software to process information.

5. CONCLUSION

IR is important for enterprises to convey information to their users. There are many advantages in implementing IR, but some shortcomings and limitations may arise in Vietnam as this is a

new issue that requires preparation in terms of time, personnel and budget. Therefore, the article proposes some state management agencies to pay more attention and support for enterprises, on the basis of encouraging application. Moreover, the role of professional organizations needs to support in training, fostering knowledge and materials to successfully implement IR. More than anyone else, managers of enterprises need to increase awareness and responsibility to provide comprehensive and effective information for users. This synchronous coordination contributes to improve the quality of accounting information of Vietnamese enterprises to meet the world of international integration.

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GREEN GROWTH IN THE WORLD AND THE CURRENT PRACTICE IN VIET NAM

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Abstract: *The aim of this article is to discuss global economic development models with a shift towards green and sustainable economic development. The article has summarized and analyzed the current situation of sustainable development and green growth in China and the US as well as some Western European countries in order to offer some valuable lessons for Vietnam. This article is based on qualitative methods in order to gather insightful knowledge about the issue of concern. As a result, the authors have proposed a number of methods to help Vietnam develop the economy in a sustainable way, following the general trend of the world.*

Keywords: *economic, development, green growth, the world*

The world tend to change its color from “brown” to “green”.

The current model of the world economic development is the “brown” economy, which is an economy that exploits and uses the majority energy from fossil fuels and natural resources, causing enormous environmental damage such as air, water and ocean pollution, land degradation, deforestation and biodiversity loss. It is often thought that this old method of developing the economy emits too much greenhouse gases such as CO₂, SO₂, CH₄... which are the causes of climate change threatening human life and causing economic loss on a global scale. In order to change this situation, the United Nations Environment Program (UNEP) has introduced a new approach to economic development that many countries have agreed with, which is green economy development (Green Economy).

Started in the 70s of the 20th century, it was not until October 2008 that the idea of developing “Green Economy” as a new approach to sustainable development was widely disseminated and received the consensus from many countries.

According to the United Nations Environment Program, the “Green Economy” is an economy that emits less carbon, saves resources and aims to improve human well-being and social equity, as well as reduces environmental risks and ecological deficiencies.

According to the United Nations Regional Economic and Social Committee for Asia-Pacific (UNESCAP), “Green growth is a strategy that seeks to maximize economic output, while minimizing the ecological burden”, seeks harmony between economic growth and environmental sustainability through fundamental changes in the mode of production and social consumption.

The World Bank believes that green growth is a process that uses efficient, cleaner resources and increases resilience without slowing it down. It can be said that green growth is the door, the main way to achieve a green economy.

According to Korea's framework law on green, low carbon growth: "Green growth is the growth that achieves harmony between economy and environment by saving and using energy and resources efficiently to minimize climate change and environmental degradation; at the same time, to develop research into clean energy and green technology to ensure new growth engines and create new jobs".

In essence, green economy development or green growth is the implementation of sustainable development in new conditions. It is to increase GDP and improve the quality of life associated with the common goal of preserving and regenerating environment. It also ensures the harmonious combination between economy and environment. In terms of the development strategies and implementation methods, they must be based on practical conditions that are suitable to each country in a specific period.

The connotations of green economy and green growth are highly open and fully shaped, with the emphasis on "Greening" covering more fields of production and social consumption: "Green Technology"; "Green jobs"; "Green Industry"; "Green Agriculture"; "Green Energy"; "Green Traffic"; "Green City"; "Green Port"; "Green Lifestyle"; "Green Consumption"; "Green Housing"; "Green Public Spending"; etc. Globalized markets will follow green supply-demand value chains, with trade and investment flows strictly regulated under sustainable principles.

A green economy is simply one with low emissions, efficient use of natural resources, ensuring social equity and preventing biodiversity loss and services of the ecosystem. Unlike the brown economy in the past, public investment in the green economy have to prioritize the maintenance and development of natural capital, especially assets under common ownership, benefiting everyone. That investment should also pay attention to the poor, because their livelihoods and well-being are highly dependent on nature and they are vulnerable to the impacts of natural disasters and climate change.

According to the results concluded by researchers in the document "Towards a green economy" published by the United Nations Environment Program (UNEP) in 2011, the green investment scenario model with a capital of about 2% of GDP around the world (about USD 1300 billion), of which about a quarter of the total (0.5% of GDP) (or USD 350 billion) is invested in natural capital-intensive sectors such as agriculture, industry, forestry, clean water and fisheries. In the macroeconomic model, the researchers also calculate and point out that, in the long run, investing in a green economy will improve economic efficiency and increase global wealth. On the other hand, that investment will be effective in restoring renewable resources, minimizing environmental risks and rebuilding future prosperity. Thus, building a green economy does not replace and conflict with sustainable development, as sustainable development is essentially a development that meets current needs without harming the ability to meet the needs of future generations. Developing sustainably aims to achieve the long-term goal (the millennium goal), while greening the economy is the means bringing us towards the goal of sustainable development.

In general, in essence, a green economy is an economy that achieves a balance between the three factors of economic growth, social equity and environmental protection. Green growth is a new direction to promote economic development based on sustainable consumption and production patterns, to ensure that natural capital continues to provide resources and ecological services that our livelihoods depend on, for this generation as well as for future generations.

Green growth is essential, and creates investment and employment opportunities for society. According to United Nations calculations, in 2009, in Europe and America, the financial investment in the construction of green buildings created 2-3.5 million jobs. In China, investment in waste recycling has created 10 million jobs and 17 billion USD revenue per year. According to calculations and forecasts of the World Bank (WB), the demand for global investment in green economic infrastructure development, such as energy, construction, and transportation may reach 563 billion USD in 2030, except for \$100 billion to adapt to climate change. According to some international forecasts, the period of 2011-2050, global green investments could reach 3.9 trillion USD.

In the long run, in terms of the macroeconomic model, the world will gradually shift “brown” investment activities to “green” investment activities. In other words, green economy and green growth have been and will increasingly be the global goal in the journey to sustainable development in the future. A remarkable turning point of this effort was at a Conference of Ministers held by UNEP in Nairobi, Kenya in February 2011, countries basically agreed that the target of the global economies is green economy, emphasizing production and sustainable consumption to prepare the content and issues that need to be discussed and agreed, to prepare for the 2012 Environment Summit in Rio Dejanerio, Brazil.

With that attitude, the green economy has opened up a broader approach in terms of both awareness and practice of economic policies, especially public investment policy for the restoration of natural resources and the environment at macro and micro levels, in national and global scales.

In fact, some countries have built and applied “Green GDP” as a macroeconomic indicator; at the same time, have developed and adopted appropriate preferential policies to encourage businesses to develop green products with eco-labels and products registered and certified to ISO-14000. Increasing communication and orientation information for consumers to choose green products (such as green air conditioners, green refrigerators, etc.) is a powerful and practical mechanism to stimulate businesses develop green products, contributing to green economic development and green growth.

China is emerging as a great example of the urgent need to choose green growth and green economic development. After more than 30 years of opening up and developing widely, besides the great economic achievements, China is facing with serious environmental problems including pollution, natural resources shortage and lack of energy for economic development. In 2009, the energy consumption of the total value of domestic products per unit of China was 2.9 times higher than that of the US, 4.9 times of Japan, 4.3 times of the EU and 2.3 times of the world average.

Consumption of iron ore, crude steel, aluminum oxide and cement is 870 million tons, 567 million tons, 26 million tons, and 1.6 billion tons respectively, estimated to account for 54%, 43%, 34% and 52% [6] of total world consumption. The share of imports of natural resources, such as oil and iron ore, has exceeded 50%. It is noticeable that, nitrogen oxides and carbon monoxide from

factories in China pushed smog concentrations above the permitted ozone limit in Los Angeles for at least 1 day per year. The report of 9 scientists from China, the United States and the UK said that China “exports” 21% of sulfur dioxide and nitrogen oxide pollutants to the United States. The dispersion of air pollution from China has also spread to Japan and affects the health of children in some areas close to the Chinese coast. Recently, a former Chinese health minister said, about 500,000 people in this country die each year due to polluted air. A Chinese environmental report admitted that most of its major cities did not meet the national air standards.

Chinese media posted images of people in Zhengzhou city, capital of Henan Province, standing in line to breathe clean air in sealed packages. The pictures show parents holding masks against their children’s faces so that they “enjoy the taste of clean air”, a “luxury” for the Chinese people since environmental contamination in this country exceeds the alarming level.

According to statistics from China’s Ministry of Environmental Protection, Zhengzhou is the 10th city in the list of cities with the worst environmental pollution in 2013, with the AQI pollution index reaching 157. The air pollution is so heavy in this country that many people are forced into exile to “environmental refuge”. “Pollution has caused the rich in the upper class to go abroad because they find it impossible to immediately stop the pollution in the country. On April 17, 2014, for the first time, the Chinese government admitted serious agricultural land contamination in the country. In a report by the Ministry of Environmental Protection - Land and Resources, 16.1% of the land in general and 19.4% of the country’s agricultural land were contaminated, mainly due to the accumulation of toxic wastes from factories, mining and agricultural activities for many years. The conclusion was based on a test of soil samples on an area of more than 2.4 million square meters distributed throughout the country between April 2005 and December 2013, excluding Hong Kong and Macau. The AP report revealed that the report was deemed too sensitive so it was stamped a national secret at first. According to the report, more than 80% of soil pollution is caused by inorganic toxins, of which the three most common are cadmium, nickel and arsenic. Thus, the situation is now twice as bad as in 2006, when the Ministry of Environmental Protection of China declared that 10% of agricultural land was contaminated and about 12 million tons of grain was contaminated with heavy metals annually.

More recently, in December 2013, the ministry revealed that 3.33 million hectares of agricultural land (equivalent to the area of Belgium) were heavily contaminated. Contamination of agricultural land is considered one of the causes leading to the contamination of many agricultural products in China. For example, in the case of rice contaminated with cadmium (Cd) in Hunan, people have checked the rice processing factories, from the first stage of putting paddy in, then peeling, milling, polishing to packing is a closed circle, no stage can produce Cd. Thus, the Cd can only be absorbed from the field production stage into the rice. Subsequent investigations showed that rice cultivation land in Hunan was heavily contaminated with Cd. Pan Genxing, a professor at Nanjing Agricultural University, estimates that about 10% of China’s annual rice production (about 20 million tons) is contaminated with Cd above the permitted level.

On April 23, 2014, a report by the Chinese government said that about 60% of the country’s groundwater resources are heavily polluted, to the point of being unusable[6]. A survey by the Ministry of Environmental Protection in 203 cities across the country shows that water quality

ranges from “relatively bad” to “extremely bad”. “Relatively bad” water source has to undergo strict treatment to be used. And the “extremely bad” water source is completely unusable.

The report also said that people in many cities in China do not dare to use tap water directly, but have to buy bottled water to use. Earlier, in early April, residents of Lanzhou city in western China rushed to buy bottled water after authorities announced that tap water was contaminated with benzene too much. Investigation showed that oil from the pipeline of China Petroleum Company has flowed into the water source.

That challenge forced China to shift from a resource-intensive approach to economic development, to emphasize environmental protection and green GDP, and to encourage technical innovation, green production and sustainable development. Shenyang city and Dalian city are re-planning, the old polluting factories are being replaced gradually, landfill areas have now turned into entertainment squares, transportation system has improved with separation and flowers, wastewater has collected and treated. New industrial zones have the choice to change the old industry structure, in which 5 main areas are developed: environmental technology, automobile manufacture using environmentally friendly energy and production, power generation by wind and solar energy, tourism and high technology. China is moving towards a green economy, low-carbon development and green growth, with the expectation of creating the competitiveness of China’s manufacturing industries in the world market.

In the US, since the 2008 financial crisis, there has been a review and transformation of the mode of economic development to promote economic growth, increase employment, and adopt a strategy of “re-industrialization”. In November 2009, President Obama announced that the US must switch to sustainable growth. In the strategy of re-industrialization for the next 10-year period is aimed at developing new technologies, encouraging enterprises to innovate technologies, save energy, especially in small and medium enterprises; America wants to be a leader in clean technology. A new approach in a “low carbon economy”, reducing greenhouse gas emissions is shown in a number of laws being discussed to come to a decision, such as the AB 32 Concerning environmental standards, minimizing pollutant emissions and greenhouse gas emissions. The approach in the US has always used economic efficiency criteria to enforce policies, to promote technological innovation, to enforce environmental protection with a clear plan divided by phases. Firstly, people have to fully understand, secondly, there must be scientific intervention, and finally follow the existing plan. However, depending on the characteristics of each region, there are different plans. For example, the area that needs to protect water resources has its own program while soil protection or biodiversity maintenance has specific programs that are suitable for each soil type. In agriculture, the production of organic produce and the combination of many different products in a farm are highly promoted by the owner. Plants and animals should be suitable with the ecological characteristics of the production site, maintaining soil quality. On agricultural production farms, the tendency of saving energy and using solar energy is quite popular. Farm owners always calculate the economic efficiency of production and product consumption, and associate production with consumption through product improvement from harvesting to packaging, bringing products directly to the supermarket to reach consumers fastest, limiting costs through intermediaries, thus increasing profits. The use of Biogas tunnels, subsidies for clean energy, is

carried out in large-scale agricultural and livestock production areas. Farm Service Agency - FSA (Farm Service Agency) encourages farmers not to use insecticides and other technical support services. In industry, the most important issue is to save energy and use alternative energy to limit the use of fossil fuels. To decide which direction to choose, the economic problem is calculated according to the operation of the market mechanism. The tendency of using solar energy from the production of many panels has been carried out. Currently, about 22 cities have produced and used this type of energy, which not only creates jobs, but also saves money, bringing about energy efficiency and a low carbon. In places that are prone to high risks of nature and people such as New Olean, after the Cachina storm, many areas do not have people returning to live in old houses. The local government has re-established the new residential planning with the capital contribution of the community and other donors, the new plan takes into account the effects of storms and floods and is more suitable for ecological conditions of the region. From a low-carbon economic approach, new urban areas, such as the now out-of-use airport area near Austin in Texas State, are being re-planned to become residential development. A non-profit organization with government funding and participation of many businesses has conducted the planning and design of eco-friendly houses and entire residential areas, thus green houses are formed. These houses, compared to previous types of houses, will save more energy, use solar energy, and bring more benefits to the homeowner. Synchronous infrastructure system from roads, garbage sorting, trash collection and treatment, new technologies introduced into the house have made green spaces. The concept of "wireless home" has appeared. The new trend of office building has also been designed and built in the city of Austin, Texas. Offices have been designed in the form of greenhouses that save energy and use rain water. Waste-utilizing decorations and many other initiatives are introduced as a new approach that has been taken in America. Transport systems, especially for the planned green separator-planned highways, are required. Although the solution in the US is based on a low-carbon economy, that approach is for the sake of a green economy.

The US also launched green economic institutional development policies with 80 billion USD being used to implement green projects, of which 20 billion USD was spent on renewable energy, 22 billion USD was spent on efficient use of natural resources and energy. The Washington government have spent \$15 billion annually since 2012 to develop clean energy technologies like wind and solar and double the supply of renewable energy. Americans will receive about \$ 63 billion in tax cuts and other assistance to switch to clean energy technology.

In the US, the industries that are environmentally friendly rank third in the priority for investment, after telecommunications and biotechnology. Production and environmental services are estimated to bring USD 1,370 billion annually. This figure will double from now to 2020. The demand for investment in developing green infrastructure such as construction, energy, and transportation in developing countries may reach \$ 563 billion by 2030, with 100 billion USD to adapt to climate change [4]. These actual data show that the green economy is a suitable strategy for sustainable development in the future, and this is necessary in times of economic crisis and ecological crisis all over the world. It is such an optimal way for economists and environmentalists to think of in order to prevent the challenges of climate change that are increasingly affecting people's lives. It is also a new development model to simultaneously solve complex ongoing

problems: resources in the world are gradually depleting, biodiversity is declining, environmental pollution is continuing to increase, and climate change is becoming more and more obvious.

In Western Europe and Japan, the development aims to a clean economy and a green economy; these countries have gone through a long period of industrialization and have also come at the expense of natural resource and environmental quality degradation. Since the 70s of the twentieth century, the development trend has changed, the view is friendly to the environment and maintains the natural ecosystem through the transformation of the development model of investment in science, technology, pollution treatment, reduction, recycling and reuse (3R). It is important to implement and promote clean production industries as well as develop newly formed low-carbon industries within the global economic system of the group of industrialized countries (OECD). Western Europe have been working to promote the low carbon targets in the international regulatory system, with the introduction of international certification standards for “carbon footprints” that have paved the way for this process. In Germany, the environmental technology sector is expected to quadruple and accounts for 16% of industrial production between now and 2030. Notably, it will bring more jobs than car manufacturing and machinery production- Germany’s two key industries. The World Bank calculated: \$ 148 billion was invested in clean technology industries in 2007, with 60% increase compared to 2006. And Japan actively tends to reduce carbon through the Decree Kyoto letter, thoroughly implementing 3R and saving resources, protecting the environment. The EU plans to invest € 105 billion before 2013 to develop a “clean economy”. And Japan, in the end of 2009 launched a new growth strategy, focusing on two new industries, the environment and energy sector, and the health sector, with investment in these two sectors expected to create new market equivalent to 1 million billion yen by 2020.

A group of new countries emerging through industrialization such as Korea and Singapore. Since the 80s of the twentieth century, they have not had to pay much for the environment thanks to the adoption of new technology from industrialized countries and previous lessons learned from those countries. These countries’ development models from the beginning have focused on the environment and saving resources, so they have not only achieved economic goals but also focused on the environment. Currently, these countries have been continuing to develop towards green growth, “low carbon economy” and towards green economy.

Since 2008, Korea has spent 80% of the economic stimulus package (about 38.1 billion USD) to use for the transition from a brown economy to a green economy. Recently, at the Barcelona fair, Samsung unveiled the first mobile phone in the world using solar energy, signaling that green technology is being applied to digital products. South Korea has also invested nearly 40 billion USD in the next four years to develop green industrial and technology fields and key synthetic industries. The government has also built green transport systems, which includes low-carbon railways and 3,000km of bicycle paths around four green rivers. About 2 million green houses and offices with low energy and electricity usage will also be built.

Developing countries, especially the poor and middle-developed countries in Asia, Africa and Latin America have lower levels of technology than developed countries, producing mainly on agriculture, resource exploitation and export, cheap labor, will be drawn into a new development trend. However, according to the connotation of green economy development, there will be an

opportunity for these countries to participate in restoring renewable resources, maintaining and developing natural ecosystems and protecting the environment, increasing well-being and reducing poverty. Accessing to a green economy development model will pose many challenges, especially investment capital, technology and implementation capacity. In order to overcome these challenges, developing countries not only have to develop their internal strengths, but also need the assistance of developed countries, especially capital, technology and capacity building for implementation.

In the region, for example Laos is also in the process of developing a national green growth. Cambodia is also working to develop a detailed action plan after the enactment of the national green growth.

Vietnam with green growth and green economy development

Vietnam has achieved great achievements for the country's development; however, the achievements are not stable. Growth quality, productivity, efficiency, and competitiveness of the economy are low, mainly based on increasing investment capital, exploiting and using many resources, cheap labor, making natural resources increasingly exhausted, increasing environmental pollution. Vietnam is also one of the countries that will be greatly affected by global climate change.

Developing a green economy and implementing green growth are to meet the general trend and also practically improve the living environment of Vietnam.

In Vietnam, the policy of green and sustainable economic development has been recognized very early and consistently with increasingly perfected content in strong commitments, as well as in practice of leadership, management, operation in country's development process over the past decades.

The 1991-2000 Socio-Economic Development Strategy of Vietnam emphasized "Economic growth must be associated with social progress and equity, cultural development, environmental protection" and "developing production capacity and industrialization of the country in the direction of modernization associated with the development of a comprehensive agriculture is the central task, aiming to step by step build the material and technical bases of socialism, improve labor productivity and the quality of life for people; fundamentally transforming our country's underdeveloped socio-economic status"

The 2001-2010 Socio-Economic Development Strategy of Vietnam continues to affirm "Rapid, efficient and sustainable development, economic growth goes hand in hand with progress, social equity and environmental protection". In addition to economic, social and environmental development, this strategy also complements the requirements for comprehensive human development, implementation of democracy and the overall goal of the 5-year plan 2006-2010, which is "Strive for economic growth with a faster pace, higher quality and more sustainable, associated with human development".

In particular, in April 12, 2012, the Prime Minister signed Decision No. 432 / QD-TTg, officially approving the Vietnam Strategy for Sustainable Development in the period 2011 - 2020; Accordingly, Vietnam advocates that sustainable development is considered a cross-cutting requirement in the country's development process and is a responsibility for the entire party, the

entire people, at all levels of government, ministries, branches and localities, agencies, businesses, social unions, communities and each citizen.

In September 25, 2012, the Prime Minister issued Decision 1393 / QD-TTg approving the National Green Growth Strategy. The strategy provides views, goals, tasks and solutions to implement green growth in the period 2011-2020 and a vision to 2050. This is a very important legal basis for sectors and localities to plan their socio-economic development strategy.

To concretize, in March 20, 2014, the Prime Minister issued Decision No. 403/ QD-TTg approving the National Green Growth Action Plan for the period 2014-2020, with targets and specific content on awareness, institutions, economic structures of industries, localities and businesses and technological innovation...

In terms of economy, Vietnam aims to: Constantly improving the quality of growth on the basis of harmonious combination between width and depth; step by step implement green development, develop clean energy, renewable energy and develop environmental industries; exploiting and using natural resources, advanced technological achievements economically and efficiently; develop an environmental economic accounting system and incorporate environmental and social aspects into the national account accounting framework (SNA). Develop industries with the structure of industries, technologies and equipment that ensure environmental-friendly principles and promote high-tech development in big cities. Restructuring agriculture and rural areas with 4 processes: industrialization, modernization; urbanization; population control; ecological environment protection. Accelerate the application of scientific, technical and technological advances in production, processing and preservation, especially the application of biotechnology to create more productive varieties of plants and animals and production processes high quality, linking production with the market, linking raw material areas with the processing industry; bringing into full play the advantages of each region, creating the connection between regions. Build a culture of civilized, harmonious and friendly with nature. Gradually implementing eco-labeling, green shopping. Ecological product market development and community initiatives for sustainable production and consumption. Apply policies that govern unreasonable consumption behaviors.

In terms of social aspects: to enhance poverty reduction, create sustainable jobs, ensure social security, progress and equity; to limit differentiation between the rich and the poor and disparities in living standards of regions and social groups. Improve the quality of the population; step by step improve the quality of the race and increase the healthy life expectancy of the Vietnamese people. Develop culture in harmony with economic development, build and develop a progressive, happy Vietnamese family, truly a home for each person, a healthy cell of society. Building a healthy lifestyle and cultural environment in both urban and rural areas; strengthen the urban-rural linkage, reduce the differences between regions, rural and urban areas, and between residential communities and create sustainable social inclusion. To well manage migrant workers to promote a rational distribution of population and labor among regions. To attach importance to training human resources to meet the diverse and multilayer requirements of technology and the development level of fields, occupations and knowledge economy suitable to the requirements of the development of the country, region and local. To develop and improve quality of medical and healthcare services; ensuring food safety; improving working environment and sanitation

conditions; Promote comprehensive health care, focus on active and active prevention, promptly control and control epidemics, screen for early detection and promptly treat diseases; reduce overcrowding in higher-level hospitals. Gradually forming a food safety and hygiene management and control system to protect the health and interests of consumers; Improve working conditions, reduce working environment pollution, reduce labor accidents and occupational diseases, take care of employees' health and ensure occupational safety and health; closely combine national defense and security with socio-economic development and environmental protection; proactively integrate and strengthen international cooperation, responsibly implement international commitments on green and sustainable growth.

In terms of natural resources and environment: to strengthen capacity to combat degradation, adapt to climate change and protect biodiversity; to minimize the use of chemical fertilizers and plant protection chemicals in agriculture. To build a structure of plants and animals to suit each geographical area, ensuring the sustainable use of land resources, protecting and developing forests. To attach importance to the protection of the water environment and sustainable use of water resources; to implement programs and projects for integrated management of river basins, watershed areas, underground water. To strengthen the construction of wastewater collection and treatment systems in urban centers and industrial parks for agricultural production and aquaculture. To rationally, economically and efficiently exploit and use mineral resources to serve the immediate and long-term economic development needs. To restrict and strictly control the export of raw resources and, by 2020, to end the export of unprocessed minerals; to apply advanced mineral exploration and exploitation technology; promote environmental protection and restoration in mineral exploitation. Enhance the search and discovery of new mineral mines and potential replacement resources in danger of exhaustion. Protect and sustainably use marine resources and environment so that by 2020, strive to make Vietnam become a strong nation on the sea, rich from the sea, and firmly ensure national sovereignty on the sea, contributing to important in the industrialization, modernization and sustainable development of the country. Apply advanced scientific and technological achievements and inherit local forest production experiences to exploit, protect and develop forests such as protecting an ever-growing ecosystem, ensuring the regeneration capacity, improvement of forest quality and optimal use of forests. To reduce air and noise pollution in big cities and industrial zones; to promote monitoring, inventory and control of the urban air environment. To control and limit dust pollution sources from construction and traffic activities. To strengthen measures to control and reduce air and noise pollution emissions from transportation activities, industrial production and people's livelihood. To minimize solid wastes and minimize the amount of waste that must be buried; to strictly manage hazardous wastes generated in manufacturing and health sectors; to step by step conduct a waste audit in waste management in production establishments and industrial parks. Organize the effective implementation of the national target program on pollution remediation and environmental improvement. Conservation and sustainable development of biodiversity. Harmoniously combine conservation with rational exploitation and use of biodiversity and poverty reduction. Developing ecotourism, ensuring stable life for people lawfully living in conservation areas; to sustainably develop the NR's buffer zone. Apply scientific and technological advances, traditional knowledge and eco-service payment mechanisms to biodiversity conservation and sustainable development. Strengthen capacities for

early warning and forecasting of climatic extremes, as well as the capacity to actively respond and adapt to human and natural systems in the context of climate change and quality of life, ensuring environmental security and sustainable development.

In order to implement its sustainable development strategy, Vietnam has been and will be promoting the synchronous implementation of solutions in terms of institutions, human resources, finance, and the development of science, technology, and economics. necessary environmental economics (waste treatment technology, technology that consumes less energy, emits less carbon, recycling technology ...); Actively participate with the international community in solving issues related to sustainable development; coordinate to address global and regional (inter-national) issues: carbon emissions reduction; water and air pollution; forest exploitation; dams; social issues such as migration, labor export, etc., have a clear rewarding policy for organizations and individuals that strictly comply with regulations on ensuring sustainable development; increase the participation of the Fatherland Front, Women's Union, Youth Union, Veterans Association, Farmers Union, Student Union, business community, socio-political organizations, social organizations - profession, non-governmental organizations and residential communities, ensuring the coordination of activities of ministries, sectors, localities, socio-political organizations, socio-professional organizations and communities business, as well as press, media...

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AUSTAINABLE DEVELOPMENT IN THE CONTEXT OF GLOBALIZATION: OPPORTUNITIES AND CHALLENGES FOR REAL ESTATE BUSINESSES IN VIETNAM

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Abstract: *This research aims to opportunities and challenges for real estate companies in Vietnam. By using statistical approach, data synthesis and data analysis, the authors investigated into the facts of current growth in Vietnam economy in general, then situation of real estate companies revealed with a lot of opportunities like investment environment, diversified investment partners, high business efficiency and existing challenges such as low competitiveness in capital and size, low transparency and marketability. In addition, recommendations for the development of real estate businesses in the near future were made for both government and real estate businesses.*

Key Words: *opportunities, challenges, growth, sustainable development, real estate businesses.*

1. Introduction

Sustainable development is considered as a big concern around the world today. However, the more the economy grows, the more exhausted natural resources become and the more damaged natural environment is. This leads to a spoilt ecological system and hazardous disasters. Besides, economic growth does not go with social equality, morality, culture. It also increases the gap between the rich and the poor or social unrest. Therefore, we have to ensure 3 things for sustainable development: economic growth, social development and environmental protection. This is opportunities and challenges for all business in general and for real estate companies in particular.

2. Aim and Research questions might be a mere suitable heading here

In this study, the statistical approach was employed. After that, data were synthesized and analyzed to answer 4 research questions as follows:

1. What are some highlights on Vietnam economy?
2. What are some opportunities for real estate companies?
3. What are some challenges for real estate companies?
4. What are some suggestions for real estate businesses?

3. Findings of the study

3.1. Highlights on economic growth in Vietnam

For the past many years, Vietnam's GDP is relatively high in comparison with other countries in the area, economic growth at 6.7% on average during 2007 and 2019, especially, economic growth was at 8.5% in 2007, the highest since 1997. However, the economy slowed down in 2008 due to financial recession 2007- 2010. In 2007, economic growth was about 5% to 6%, lower than the previous period (7%- 8%). In 2008, GDP was only 6.23%, lowest since 1999¹. In addition, in 2007 and 2008, inflation rate was very high at 10%- 20%². GDP was low at 5.32%³, 6.78% and 5.89%⁴ respectively in 2009, 2010 and 2011. In 2014, economic growth was at 5.98%, which was higher than the 8th Congress meeting plan.

In 2015, GDP reached 6.68%. Concerning economic scale, Vietnam was under China in term of GDP per capita in the last 10 years. Though, GDP per capita does not reflect exactly the living standards because GDP figures are not equivalent to GNP.

Therefore, GDP from 2011 to 2015 was 5.91% on average which was lower than the goal set in the 9th Party meeting, from 7% to 7.5%. The 12th Party meeting statement in 2016 showed that target of economic growth in the period from 2016 to 2021 was 6.5% to 7%. In 2017, economy grew at 6.81%, higher than expected 6.7%. This was also the highest figure during the last 10 years⁵. However, because of COVID- 19 pandemic, Vietnam economy grew at 3.8%⁶ in the first 6 months of the year (notably, in the second quarter, it was only 0.36%).



(Source: General Department of Statistics)

What's more, economic structure has changed dramatically, labor force in Agriculture has decreased from 55% to 44% (nearly 1.3% a year).

¹ Economic and social situation 2008

² Economic and social situation 2009

³ Economic and social situation 2010

⁴ Economic and social situation 2011

⁵ General department of Statistics 2019

⁶ Reports of Institute of economy and policy research on (VEPR)

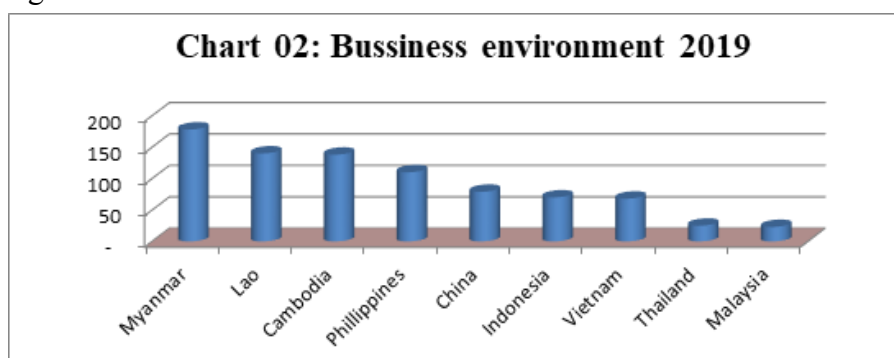
	Unit	2005	2010	2015	2017
GDP structure by industry	%	100	100	100	100
Agriculture	%	19,3	21	18,9	17
Industry- construction	%	38,1	36,7	37	37,1
Service	%	42,6	42,2	44,2	45,8
GDP structure by sector	%	100	100	100	100
Private owned sector	%	47,2	49,1	48	46,4
Cooperative	%	6,6	4,6	4,5	4,2
Private	%	8,5	7,9	8,8	9,6
Individual	%	32,1	36,7	34,8	32,6
State- owned sector	%	37,6	33,6	31,9	31,8
FDI business	%	15,2	17,3	20,1	21,8
Labor structure	%	100	100	100	100
Agriculture	%	55,1	49,5	44	40,2
Industry- Construction	%	17,6	21	22,7	25,8
Service	%	27,3	29,5	33,2	34,1

Since 2008, GDP per capita has closed to 1050 USD, Vietnam has left the group of low income developing countries and gone in the group of medium income developing countries, currently GDP per capita is 2.385 USD. In general, Vietnam is turning from an agriculture country to one of the major industrial centre of Asia. At the same time, it is changing from low skill labor industries to specialized and high value ones. Sustainable development in the context of globalization is not only opportunities but challenges as well for Vietnamese business in general and for real estate ones in particular.

3.2. Opportunities for real estate companies

3.2.1. Attractive investment environment

Vietnam has an attractive investment environment with: young labor, stable political status, one of the fastest growing countries in the world. It creates an opportunity for real estate companies to call for foreign investment.

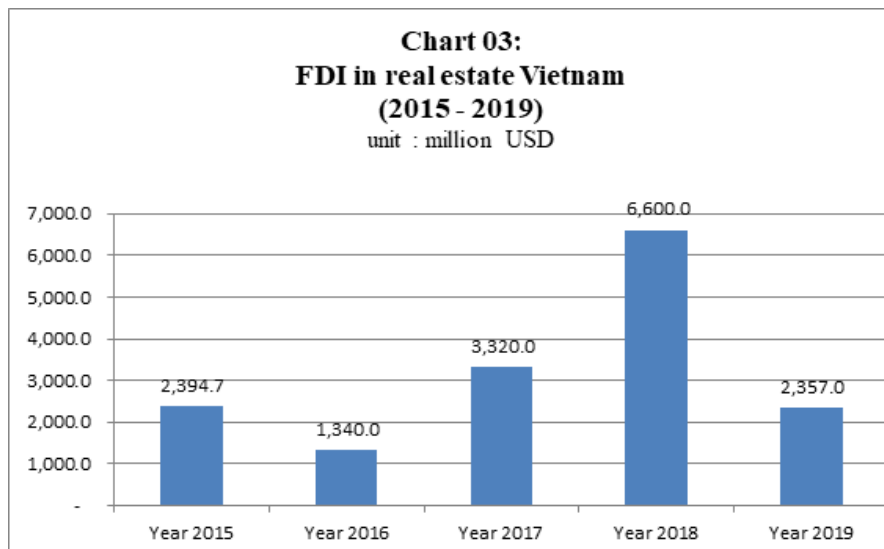


(Source: World bank, 2019)

Vietnam is on the 69th place out of 190 for the good business environment, above Indonesia (the 73th), the Philippines (the 95th) and Myanmar (the 165th).

3.2.2 Increasing foreign investment

Obviously, domestic investors have limited capital, thus thanks to FDI, Vietnam sees a big change in infrastructure such as large industrial zones, metropolis areas, amusement parks. FDI is truly an effective way of raising fund to compensate for the shortage in capital from domestic investors.



(Source: Report of Ministry of Plan and Investment in 2015, 2016, 2017, 2018, 2019)

FDI in real estate business increased from 2.394,7 million USD in 2015 to 6.600 million USD in 2018.

3.2.3 Diversified and expansive investment partners.

Vietnam has a wider range of investment partners than before. Beside regular investors from Japan, Korea, Singapore, Vietnam attracts investor from more than 178 countries. For example, investors are from Japan (22%), Korea (21%), Thailand (11%), Hongkong (17%). Vietnam with investment attraction policy appeals to some big corporations such as Accor, InterContinental Hotel p, IFA, Kingdom Hotel (from Middle East).

3.2.4 Increasing business efficiency

Free Trade Agreement (FTA): Vietnam joined FTA to convert low value export into high value export and exchange knowledge of engineering and science with developed countries.

Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) in January 2019 helps GDP to hopefully increase by 1.32% in 2035. It can be a big change for real estate companies.

EU- Vietnam Free trade agreement (EVFTA) in June 2019 eliminates 99% tariff between Vietnam and EU. For this historical Agreement, real estate companies are likely to achieve big opportunities for cooperation.

3.2.5. More chances of turning into high value industry with modern engineering science

The 4th industrial revolution and smarter production: Vietnam strategy and Vietnam law allow application of 4.0 to trading and industry.

Prospects of turning into high value industry: industrial real estate segment in Vietnam is on the way to attract FDI 10 times as much as the last 10 years. Vietnam should be careful in selecting coming projects to grow. More and more companies focus on Ready- Build factories (RBFs) and BTS for lease. This meets the need for the factories from 500 to 5000 m2. RBF and BTS help to catch on the requirement of industrial market and production facilities with the time for lease from 3 to 10 years. An increase in the number of investors leads to expansion of industrial zones, which stimulates the incorporation of local business and the transfer of land rights. Accordingly, it contributes to chain value addition, competitiveness and sustainable development for real estate businesses.

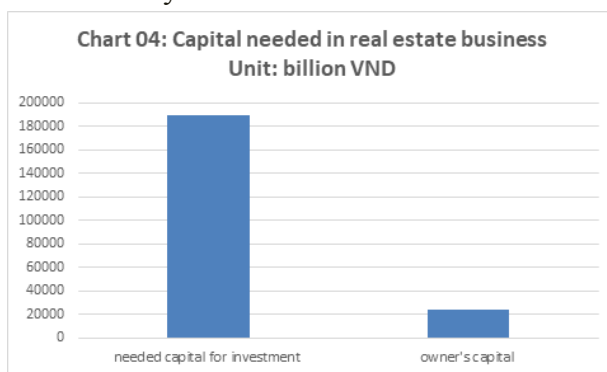
3.3. Challenges for real estate companies

- Where do you come up with these challenges? ie. Sources of reference.

3.3.1 Low competition in size and capital

In the context of globalization, Vietnam property companies face strong competition with reputable competitors in the world:

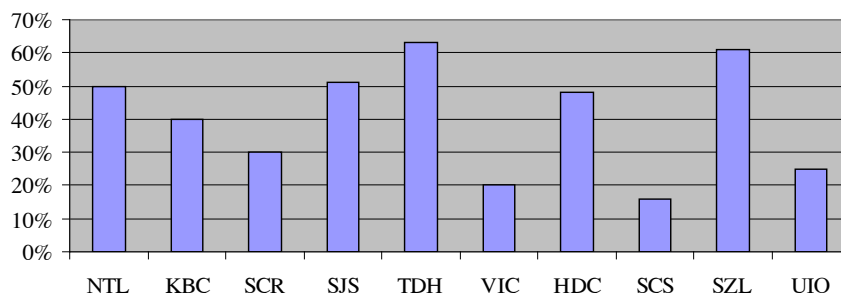
***Capital for property business:** This is the first difficulty because capital size of most Vietnam companies is rather small. It mainly comes from bank loans and customers.



(Source: CBRE)

Owner’s capital meets only nearly 13% (24065 billion VND). When the demand for investment increases, companies raise funds from other sources such as shares etc.

Chart 05: Owner’s capital compared to total investment of real estate companies (In 2019)



Note: NTL (Tu Liem urban development JSC); KBC (Kinh Bac housing development JSC); SCR (Sai Gon Thuong Tin Property JSC); SJS (Song Da JSC); TDH (Thu Duc housing development JSC); VIC (Vincom JSC); HDC (Ba Ria- Vung Tau housing development JSC); SCS (Construction company No. 5 JSC); SZL (Sonadezi Long Thanh JSC); UIO (IDICO JSC).

Beside strong companies in property business such as Thu Duc House (TDL) 61%, Sonadezi Long Thanh (SZL) 60%, Tu Liem Housing (NTL) 50%, almost real estate companies have limit on capital, low financial control.

3.3.2 Low competition in management, application of engineering science advancement to business

Real estate companies in Vietnam have constraints in management, business experience, application of engineering advancements, technological achievements.

3.3.3 Low transparency in the market

Low market transparency is a challenge for businesses. Investment and trading, leasing and transferring activities have a lot of difficulties. Speculation is popular in many provinces, especially in big cities, which causes real estate markets less sustainable and stable.

3.3.4 Marketability

Vietnam property market has some characteristics: (i) It has low competitiveness especially primary market. Auction regulations available in some documents are not fully followed; (ii) A lot of real estate transactions are underground, accounting for 70%. The reason is time-consuming, lengthy and a waste of money bureaucracy steps. (iii) Plan of land use and urban development is not focused, it needs frequent changes; (iv) Legal systems are not consistent. Real estate registration system is cracked, which is not good enough for transparent management.

3.4. Recommendations for real estate businesses in Vietnam

3.4.1. For real estate groups and companies

Real estate companies should diversify fund raising channels to cope with COVID-19 effects.

The size and price of real estate market are positive to size and speed of funds. Basically, real estate products have 2 features:

High value is followed by very high value

Lower liquidity than instruments in money market

Therefore, capital in this market is big from hundreds to billion VND or USD long-term investment (often medium or long-term)

So far, medium investment mainly comes from:

(i) Medium-term credit capital: this source has to follow the credit regulation for real estate companies in mortgages and settle the mortgages. Therefore, it can limit the credit from commercial banks or financial institutions.

(ii) Owner's capital: Most Vietnam companies are small and medium size so this source is limited. In addition, investment of big companies in this sector is decreased due to the allocation of capital in other sectors and lack of profession in real estate business.

(iii) Foreign investment, both direct and indirect is increasing today. However, this source focuses on some segments like tourism, luxury apartment buildings and offices, hotels, restaurants, commercial centres etc.

(iv) Bonds: It is in the beginning but it lacks legal regulations and legal documents for raising medium and long term fund from the public are not clear.

Real estate companies can take advantages of difficulties today to transform efficiently.

Companies should restructure investment and focus on main product and pay attention to social houses to meet the needs of customers. Green real estate products are potential because they meet the demand for a safe accommodation, profitable investment and social distancing. Moreover, medium- price houses should be targeted.

All companies need to improve management level, recession management ability to balance the company's potential.

Nowadays, many companies use financial leverage, which can cause a big financial burden when markets are in difficulty. Therefore, companies should reduce the price to avoid bankruptcy. Companies need change the business plan, cut unnecessary costs, control the project schedule.

3.4.2 For the government

3.4.2.1 Government continues reducing tax, interest rate for real estate companies.

Government has applied fiscal and monetary policies to support public in the pandemic such as increasing government spending to stimulate demand, create jobs, decreasing and delaying tax payment for businesses, VAT, reducing interest rate, expand credit term, decreasing bank interest etc. It is important for the government to look into too weak business (nearly bankrupt) and give them more supports to approach.

3.4.2.2 Government should continue public spending.

It is important to make up for the growth after COVID- 19 by solving difficulties and much bureaucracy as well as promoting public spending, especially for major projects.

3.4.2.3 Government complete consistent and transparent legal documents as soon as possible, especially change the financial policy for real estate market. Government actively regulates land auction by demand and supply relationship, complete legal frame to easily convert real estate into investment.

3.4.2.4 Government should complete real estate registration system, issue certificate of property consistently and transparently.

This is considered to be a milestone in reforming bureaucracy to solve land dispute, complaint and arraign.

IV- DISCUSSION AND CONCLUSION

Vietnam has a lot of opportunities in the global economy with the following advantages: Vietnam is a country with an open economy with the 105th place in free trade index in 2020. Vietnam is a member of EVFTA and EVIPA in 2020. Vietnam is also a place of foreign investment attraction due to reforming investment environment. Especially, when China- US relation is not good, investors invest more in SEA, including Vietnam. Vietnam has good labor structure with the fastest urbanization. Increase in big cities creates a big demand for houses. Vietnam is also in the

Top 10 workplace for foreign specialists. Vietnam is also one of the safest destination. Besides, Vietnam has more open policies for Vietnam citizens in other countries and foreign people who want to own property in Vietnam. All these things will make a more promising real estate market after COVID- 19. Hopefully, Vietnam economy and real estate business will gradually improve. This is the time for real estate companies to change and set the right goals for the development in the next years.

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SOLUTIONS TO IMPROVE QUALITY AND EFFICIENCY OF RURAL ADMINISTRATIVE SERVICES IN BAC NINH PROVINCE

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Abstract: *Improving the quality and efficiency of public administrative services will contribute to socio-economic development in localities in general and Bac Ninh province in particular. The article assesses the current state of the quality and efficiency of rural public administrative services and analyzes the factors affecting the quality and efficiency of public administrative services through 5 factors: Credibility; capacity to serve, responsiveness; empathy and Tangible Media. From there, proposing solutions to improve the efficiency of rural public administrative services in Bac Ninh province, focusing on reform of administrative handling procedures and processes; infrastructure; the empathy of civil servants and the service capacity of civil servants and public employees.*

Keywords: *Public administration; countryside; quality and efficiency of public administrative services.*

I. INTRODUCTION

Public administrative services are aimed at serving state management activities, ensuring the stability, fairness and efficiency of society, so the State serves the interests of all people according to the public principles equal [1].

Bac Ninh province has focused on renovating and improving the quality and efficiency of the provision of public administrative services, considering it an important step in the implementation of the state administrative reform program towards a modern and professional direction. . The province has applied electronic and information technology facilities to improve the quality of public services. However, the current rural public administrative services in Bac Ninh province still have certain limitations. Therefore, improving the quality and efficiency of public administrative services is a very necessary issue.

II. QUALITY AND EFFICIENCY OF RURAL ADMINISTRATIVE SERVICES BAC NINH PROVINCE

2.1. Evaluate the quality and efficiency of rural public administrative services in Bac Ninh province

The quality and efficiency of rural public administration services in Bac Ninh province has been improved. The province has established and put into operation the public administrative center at the provincial and district levels and applied the implementation of modern one-stop shop in all communes, wards and towns in the area. This is a breakthrough in administrative reform and administrative modernization, changing working methods of state administrative agencies in the province and localities. Up to now, the

quality of public services of the province has created a positive change in the relationship between state administrative agencies and organizations and individuals, increasing working efficiency in the process of operation. , reduce troubles, costs and effort for the people and be recognized and appreciated by the society.

However, the quality and efficiency of rural public administrative services in Bac Ninh province still have certain limitations:

First: Administrative procedure reform and administrative procedure update

When implementing the OSS model, a number of administrative procedures, application forms, processing time, fees and charges have not been fully disclosed, thus making it difficult for people. contact, solve work. Some administrative fields and procedures are still cumbersome, not only causing difficulties for citizens but also for officials in the process of implementing and applying to handle people.

The review and announcement of administrative procedures in some fields are not really suitable with the actual situation of the locality, leading to many administrative procedures with no transaction records but still having to be announced. controls are wasteful and difficult to control.

Second: Coordinate work settlement between stakeholders

The coordination in settling administrative procedures in a number of agencies and units with the Center is not high. Some units have brought administrative procedures to the Center but still receive and return results at the agency or unit. A number of related agencies have not implemented well coordination regulations, their dossiers are slow to have a written apology to citizens according to regulations. A number of agencies and units, when having amended and supplemented administrative procedures, were not promptly sent back to the Center.

Third: Facilities

Facilities in some communes are still lacking, ground area of OSS in some communes does not have the prescribed area (<40m²), officials do not work together at one-stop shop, equipment is still sketchy, and some communes lack equipment to serve cadres to work and receive citizens.

Equipment and machines of some communes have been purchased for a long time, are not functioning properly or have not been repaired.

Public service software is incomplete, some administrative procedures have not been fully updated, many times are still very slow, leading to difficulties in solving administrative procedures.

Process Administrative procedures on public service software have many differences with the quality management process according to TCVN ISO 9001: 2008, causing confusion for officials to use. Public service software is not operating properly, errors often occur, affecting the quality of settling administrative procedures for organizations and citizens.

Measures to deploy “4 on-the-spot” have not been drastic and scientific, such as: not decentralizing, authorizing so that staff working at the Center has enough competence to guide, receive and handle; Digital signature has not been applied on public service software ...

Fourth: contingent of cadres, civil servants and public employees

The quality of the contingent of cadres at district and commune levels, especially at the commune level at the OSS department, is still limited, especially the capacity to detect and solve problems, advise and propose solutions, and have not had experience. experience in handling administrative procedures.

Some officers controlling administrative procedures still neglect, are not proactive in reviewing newly amended and supplemented administrative procedures. Not enthusiastically guide the people and units to solve their aspirations in accordance with regulations. Some OSS officers are not sure about the administrative procedures, leading to inaccurate instructions on the implementation procedures, and limited professional skills and communication skills.

The attitude towards people has not received satisfaction and appreciation from the people.

2.2. Analysis of factors affecting the quality and efficiency of rural public administrative services in Bac Ninh province

To analyze the factors affecting the quality and efficiency of public administrative services, there are 5 basic criteria:

+ Confidence: Trust is the ability to provide accurate and reputable public services. It also shows the expected results of the people and service providers.

Service capacity: Qualifications, capabilities, skills and working attitudes of public service staff and managers.

+ Responsiveness: Is the willingness to help people and users actively and actively provide services.

+ Empathy: Demonstrating attentive care, paying attention to each individual. Empathy includes people's accessibility and efforts to understand their needs.

+ Tangible means: The presence of working conditions, equipment, staff demeanor and the media.

Using analysis of factors affecting the quality and efficiency of rural public administrative services in Bac Ninh province on quantitative research methods conducted through survey data collection and software processing SPSS to analyze data of influencing factors, the results are as follows:

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	,820 ^a	,672	,671	,44696	,672	653,367	5	1594	0,000
a. Predictors: (Constant), VAR00005, VAR00002, VAR00003, VAR00001, VAR00004									

With VAR00001: Credibility

With VAR00002: service capacity

With VAR00003: Empathy

With VAR00004: Responsiveness

With VAR00005: Facilities for service

We have R Square = 0.671 hence the 5 independent variables above affect 67,1% The change of the dependent variable is "Evaluation of the quality and efficiency of public administration services in rural areas", inferred that the study is reliable, the rest is due to non-model variables and random errors. .

Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
1 (Constant)	1,936	,048		40,716	,000		
VAR00001	,208	,025	,302	8,331	,000	,156	6,403
VAR00002	,103	,022	,130	4,611	,000	,259	3,859
VAR00003	,122	,023	,168	5,237	,000	,199	5,020
VAR00004	,081	,031	,101	2,631	,009	,140	7,145
VAR00005	,138	,026	,173	5,261	,000	,189	5,284

a. Dependent Variable: VAR00006

Through the table above in column B, we will show that in the 5 factors (5 research variables) which factors have the strongest impact on the dependent factor is “Evaluation of the quality and efficiency of rural public administrative services”. the factor that has the strongest impact on quality Public administrative services are factors VAR00001: Credibility; VAR00005: Facilities for service, VAR00003: Empathy, VAR00002: service capacity and VAR00004: Responsiveness. Need for the clarification of result for solutions discussion.

III. SOLUTIONS TO IMPROVE THE QUALITY AND EFFICIENCY OF RURAL SERVICES IN BAC NINH PROVINCE

Based on the current situation of the quality and efficiency of rural public administrative services, there are still a number of contents that have not been highly appreciated about the reform of administrative procedures, administrative handling processes, and the service capacity of staff members. staff, staff sympathy for people and facilities. Based on the factors that greatly affect the quality and efficiency of public administrative services in rural areas, namely: reliability, service facilities, empathy, service capacity and responsiveness, the authors propose solutions to improve the quality and efficiency of rural public administrative services in Bac Ninh province as follows:

First: The solution to reform administrative procedures and processes

Continue to innovate and improve the construction, appraisal, inspection, review and systematization of legal documents, specialized instruction documents to detect inappropriate content to propose with the competent authority to cancel or amend, supplement documents to suit requirements and tasks.

Reviewing, completing and promptly announcing administrative procedures. To make public and transparent administrative procedures, shorten the time to settle administrative procedures, especially administrative procedures that are directly related to the people and enterprises.

Strengthen the application of information technology in settling administrative procedures for the people; enhancing the operational efficiency of the Provincial and District Public Administration Centers.

Continue to renovate and arrange the organizational apparatus of a streamlined political system, effectively and effectively operating in the spirit of Resolution No. 18-NQ / TW dated October 25, 2017 The 6th Conference of the Executive Committee. Party Central Committee of the XII term on a number of issues to continue to renew, arrange and organize a streamlined political apparatus, operate effectively and effectively and Resolution No. 19-NQ / TW dated October 25. 2017 The 6th Conference of the 12th Party Central Committee on continuing to renovate the organizational and management system, and improve the

quality and performance of public non-business units.

Develop and deploy information systems, shared databases of the province synchronously according to the approved e-government architecture. Maintaining well the use of email, the management system of executive documents from the provincial to the commune level; deployed a commune-level website in order to increase the provision of online information and public services, to facilitate the exchange of information between the State and people and enterprises. Promote the effective application of the quality management system ISO 9001: 2008 in administrative agencies.

Second: Solutions to improve facilities

Increase investment in the system of specialized facilities for the operations of the Public Administration Center of the province, district and the commune-level OSS to ensure synchronous and modern direction towards centralization and professional service. .

Investing in upgrading and renovating reception facilities at the communal one-door division (according to the standards specified in the Prime Minister's Decision No. 09/2015 / QD-TTg dated March 25, 2015.). Ensure that communes, wards and townships have standard area of reception rooms and administrative procedures according to regulations.

Third: Solutions to improve the empathy of civil servants

The empathy here is to understand and sympathize with the wishes of the people and always put ourselves in the people's circumstances to acknowledge the problem, thereby expressing his attentive attitude. Officials' sympathy is the willingness to share with the people about their expectations in the process of meeting and transferring public administrative services. At the same time, always ready to be present when people need you, do not show emotionless, indifferent to the worries and concerns of the people. In essence, the empathy of civil servants is the building of organizational culture in the unit.

Organizational culture is a system of values, standards and beliefs of the organization that govern emotions, thinking and behaviors of all members of the organization, shared in the organization and created. unique characteristics of the organization. Organizational culture comes from within the organization and needs a process to form.

Reciprocating civil servants need to have a positive attitude, be willing to receive and receive documents to deal with work, friendly, good-minded when receiving and answering questions of people. When talking with citizens, civil servants should try to understand the request, stay calm, and listen to people's opinions. Understanding what people say is an important solution in dealing with documents quickly and promptly.

Thus, the local state administrative agencies, in particular, building and developing office culture in particular and the organizational culture in general will help cadres, civil servants and public employees gain sympathy with the people. At the same time, the units need to strengthen the right to supervise and comment to the people because the people are supervised and contribute opinions or complaints and denunciations when using public administrative services to help the people. At the same time, service staff will understand the wishes of the people and take timely and effective measures to increase the sympathy with the people to improve service quality. .

Fourth: Improve the service capacity of civil servants and public employees

To handle the jobs well, the units must have a contingent of cadres with good professional qualifications and skills, meeting the assigned tasks. A good level of expertise will help in solving jobs with high quality and efficiency. Currently, the service capacity of civil servants and public employees in the district and commune level public administrative service units in Bac Ninh province has not been highly appreciated. Therefore, in order to improve the quality and efficiency of public administrative services, it is imperative that the units take measures to improve their professional qualifications and professional skills to meet job

requirements. Service capacity is the skills, knowledge, behaviors and attitudes that are accumulated and used by individuals and organizations to achieve results according to job requirements. That is the quality of the contingent of civil servants and public employees, professional capacity and communication, the ability to coordinate between departments and individuals. To improve the quality and effectiveness of the contingent of cadres and civil servants, units need to implement the following solutions:

- Must continue to promote professional training and retraining for the contingent of civil servants directly implementing the provision of public administrative services.

- Training and fostering professional knowledge is an important task, contributing to improving the quality and efficiency of public administrative service delivery. Therefore, it is necessary to regularly build and organize training courses in order to equip and improve knowledge, professional skills, especially the capacity and skills of public service execution, sense of responsibility, public service ethics, professional ethics in public duty performance of civil servants directly managing and working at the results receiving and returning section.

- Organize training, training, retraining and guidance for staff on the use of software to ensure that civil servants are proficient in using application software and related information equipment for their work. At the same time, in the coming time, it is necessary to organize training courses on the control of administrative procedures for cadres and civil servants so that cadres and civil servants in the units can understand and apply effectively in practice. health.

- Units need to effectively implement the job placement project of administrative agencies and non-business units, and improve the quality of operations of the contingent of civil servants and public employees.

- Along with that, it is necessary to study and implement the regulations on the appropriate number of communal cadres and civil servants, clearly defining the job position, title and specific criteria of the province.

- For part-time cadres at district-level public administrative centers, it is recommended that civil servants in the specialized office be appointed to work in this Division should comply with the second party mechanism of the Law on Public Employees. organization because “seconded public employees must comply with the work assignment of the agency, organization or unit where they are sent to be dispatched”. Thus, the Chief of the Office or the Deputy Chief of the Office of the People’s Council and the District People’s Committee in charge of this Division will easily direct and assign tasks to civil servants who are seconded from specialized divisions and avoid overlapping in work. bring higher work efficiency.

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CURRENT SITUATION OF PUBLIC SERVICES PROVIDING IN PRODUCTION AND CONSUMPTION OF POTATO IN BAC NINH PROVINCE

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Abstract: *Providing public services in potato production and consumption in Bac Ninh province will contribute to forming the value chain of agricultural products and helping the value chain of agricultural products develop in a sustainable direction. The paper reflects the current state of public service provision in production and consumption of the typical Potato value chain in Que Vo and Yen Phong districts, from which proposing solutions to improve public service delivery in production and consumption of the value chain of agricultural products Potatoes.*

Keywords: *Public service; public services in production and consumption; value chain of agricultural products Potatoes*

1. Introduction

Public services are activities that serve the basic and essential needs of the people, the common interests of the society, and are responsible to the society by the State (directly undertake or authorize and facilitate the implementation by private sector) to ensure efficiency, stability and social equity.

Public services in production and consumption of the value chain of agricultural products in general and the value chain of agricultural products in Bac Ninh province in particular will contribute to promoting the development of the value chain of agricultural products in a sustainable direction, increase income and improve the quality of life for the people.

2. Current situation of public service provision in production and consumption of agricultural chains Potatoes in Bac Ninh province, case studies in Que Vo and Yen Phong district

Potato is the largest crop of winter crops in the current Bac Ninh province with an annual area ranging from 1922 to 2497 hectares, which mainly concentrated in Que Vo district and some other districts such as Yen Phong, Tien Du, Thuan Thanh. Therefore, the author selected Que Vo District as a representative locality to focus research on providing public services in the potato value chain of Bac Ninh province. In addition, the author also investigated a number of models of public service provision in the production and consumption of Potato value chains in Yen Phong District to find out the differences in the application of local public services in production and consumption of the value chain of potatoes in Bac Ninh province.

2.1 Current status of public service provision in production and consumption of Potato agricultural value chain in Huyen Que Vo

Through a field survey in Que Vo District, the model of providing public services in production and consumption of the Potato value chain in Bac Ninh province is organized by the State to provide public services.

Therefore, this production activity is not for profit but to fulfill the plans and directions that have been elaborated previously by the State, ensuring all necessary conditions for social activities.

The development of plans will be considered by the State, balancing the production and supply of products and services to meet the needs of society.

This is the State model that plays an absolute role in the organization of public service delivery. In addition, the provision of public services in the production and consumption of the value chain of potato products has had the participation of private organizations, private organizations providing public services in terms of capital and consumption. This is not under the supervision and management of State agencies.

Providing public services in agricultural production of Potatoes. Regarding the province's policies related to public services in agricultural production: Currently, Bac Ninh province has issued many policies to support specific agricultural production and rural infrastructure in the direction of focusing on supporting development to expand commodity agricultural production with high productivity, quality and economic value. Especially, according to the Resolution No. 147/2018 / NQ-HDND dated December 6, 2018 of the Provincial People's Council on the promulgation of "Regulations to support the development of agricultural production in Bac Ninh province" has encouraged people to develop in the direction of accumulating land to focus on producing goods on a large scale, in particular, some policies have been applied to potato production households, including:

- + Support for the production of crops of high economic value: support for crops (including potatoes) with 03 million VND / ha of planting/crop, support of 10 million VND / ha for one-time medical plants, support for fruit trees 20 million /ha

- + Support for food safety production: 100% support for the first time funding for agricultural establishments that are certified food safety establishments or VietGAP, GMP, GlobalGAP, suitable products on organic agriculture is located in the planning area of the locality (including funding for consultation, verification, evaluation, sampling, analysis, training, certification ...) the total support level does not exceed 80 million / certificate.

- + Support for land accumulation for commodity production: Organizations and individuals rent fields for concentrated agricultural production with a size of 5 ha or more in rice production areas, 3 ha or more, for for aquaculture and other crops are supported 6 million VND / ha / year for the first 3 years.

In addition, every year, the Department of Agriculture and Rural Development of the province regularly organizes training courses, updates and supplements knowledge on the technical process of growing, tending and preserving potatoes. Since then, farmers are encouraged to apply the processes of safe production, processing, consumption and preservation of agricultural products according to VietGAP standards, and building quality seed production areas.

Thus, from the input stage of the production process, 100% of the households have been using public services in the production process. Farmers buying seeds, including seed potatoes and commercial potatoes, received support from the province according to Decision No. 46/2016 / QD-UBND dated December 21, 2016 of the Provincial People's Committee on the issuance of "Supporting regulations. support for the development of agricultural production and rural infrastructure in the period 2016-2020 in the province of Bac Ninh "and the Resolution No. 147/2018 / NQ-HDND dated December 6, 2018 of the Provincial People's Council on the issuance of " Regulations on supporting agricultural production development in Bac Ninh province ".

At the same time, potato production households are also supported by the province in cold storage and support for products meeting VIETGAP standards associated with traceability.

Production households are supported to borrow loans with preferential interest rates, but through the actual survey, 100% of households do not borrow capital to buy inputs in the production process of potatoes.

During the planting process, production households are supported with 50% of the cost of buying seeds and the support paid when the farmers are accepted is the amount of seeds bought actually planted on the registered area to avoid receiving To get support for the seed, then leave it to sell to others.

In 05 years, from 2015 to 2019, the funding support for potato production in the district (including potato seed and commercial potato) under the province's support policy is 49,817 million VND; support 910 million VND for 11 cold storage and support 130 million VND for products meeting VIETGAP standards associated with traceability.

This support has encouraged and encouraged farmers in the area to use quality potato varieties, invest in expanding acreage, form commercial potato production areas, and implement production up to safety standards.

In addition, the district budget has supported 500 million VND to build the brand, to support the packaging, to organize the launching point for Que Vo potato products.

At the same time, the production households also participate in training courses on potato planting and care techniques organized by the District's Agricultural Service Center.

Provide public services in the consumption of agricultural products Potatoes

Through the investigation, the status of public service provision in potato consumption in Que Vo district, Bac Ninh province showed that:

The Department of Agriculture and Rural Development of the province regularly organizes training courses, updates and supplements knowledge on the technical process of growing, caring and preserving potatoes. Since then, farmers are encouraged to apply the processes of safe production, processing, consumption and preservation of agricultural products according to VietGAP standards, and building quality seed production areas. During the consumption process, the consumers received technical support from the district Agricultural Service Center in using cold storage to preserve the products, this support effectively resulted in preserved potatoes. is longer, consumption time is longer thus satisfying consumer demand. Consumption prices are also increased, but the difference in prices belongs to the buyers. For cooperatives or large-scale purchasing households wishing to build cold storage to preserve seeds and preserve products for consumption, in 2019, the State will support 30% of the cost for cold storage but not more than VND 150 million/warehouse.

Construction of cold storage in 2012 was supported by the state with air conditioning, equipment and warehouse for households to take care of. Households in need of capital, are supported with bank loans at preferential interest rates.

Currently in Bac Ninh, there are 2 big companies buying potatoes in the area, Pepsi Company and Orion Company to produce BIM BIM, in which:

+ Pepsi Company purchases through 3 major cooperatives to deploy and sign commercial potatoes with these 3 units until the output is sufficient (apart from Bac Ninh, this company also buys potatoes in other provinces).

+ Orion Company develops and purchases potatoes through the exclusive partner of the Institute of Biology of the Vietnam Academy of Agriculture for deployment in Que Vo and Yen Phong. Orion Company has a factory in Que Vo district.

The management of the authorities for the protection and development of the trademark of the product has not been respected. There has been a phenomenon of importing potatoes from other provinces into Bac Ninh with cheaper prices to mix with potatoes of Que Vo. Buying and selling are often without commercial contracts based on trust and credibility. Local collectors only need to obtain local certification of potatoes to be a substitute for commodity bills. As an agricultural product, there is no tax on potatoes. Consumption markets are mainly in Hanoi and Northern provinces, Hue, Ho Chi Minh City, ...According to the agreement, for the orders with large quantity, the buying households will have cars to deliver the products to the buyers;

Thus, in the consumption of agricultural products Potatoes are mainly agreed by the growers and collectors, without support from the policy, so the use of public services in consumption is almost not available. Even the use of bank loans for consumption through the survey, collectors have almost no need to use capital from banks.

2.2. Status of public service provision in production and consumption of Potato agricultural value chain in Huyen Yen Phong

Through field surveys in Yen Phong district, the district agricultural service center has now supported potato growers to sign contracts with Orion Company. In Yen Phong, there are a number of typical households that grow potatoes on a large scale such as the household of Mrs. Nguyen Thi Lan, 30 hectares of Long Chau commune, and nearly 40 hectares of households of Mr. Ngo Van Dien Tam Giang commune. As follows:

Potato production and purchase households mainly use their own capital without bank loans (Seed is supported by companies, fertilizers are purchased on deferred payment, only have to pay for labor and industrial machinery). In which, the Company supports producers, including:

+) Potato seed advance (after harvesting the potatoes and sold to the Company, the initial investment will be deducted from the seed investment). Potatoes are mainly imported from Korea and provided by the Bac Ninh Institute of Biology.

+) Purchase norm when harvested: 3kg of potatoes / 1 kg of seed.

- There is no land rental fee for growing potatoes. Labor rental costs 150.000 to 200.000 VND / 1 worker.

- Transportation costs are borne by the Company, if the household transports and does the packaging itself, the Company will pay. Purchase price is at 7,300 VND / 1kg of potatoes (If there is shipping plus 300,000 VND / 1kg)

Public services used in production and consumption of Potatoes in Yen Phong District, in addition to public services used in accordance with the province's regulations like Que Vo District, Yen Phong District during the production process are supported additional 2 million VND / 1 ha; support 50% of spraying at the price of 30,000 VND / pole by drone (done by Dai Thanh Bac Ninh

Joint Stock Company). Thus, the types of public support services are mainly in the production stage, and almost none at the consumption stage.

2.3. Evaluate the model of providing public services in production and consumption of the Potato agricultural value chain in Bac Ninh province

a) Advantages

Public service provision in production and consumption of the value chain of agricultural products in Potato province has brought into play its advantages, continuously increasing in area, productivity, output and value, bringing income and contributing to development economic development, improving the living standards of farmers.

b) Restrictions

Model of Public Service Delivery in agricultural production and consumption Potato initially with the participation of private parties. However, the provision of public services in this form has not been closely regulated and supervised by State agencies, so the provision of public services has not been highly effective. Public services provided in the production and consumption of the Potato value chain has many limitations:

- The management of the potato brand and brand has not been given due attention, especially the requirement of product traceability, it is necessary to have a policy and focus on implementation to meet the requirements of the market and consumers

- The consumption of potatoes is mainly in the domestic market. In general, the consumption of potatoes is still spontaneous, small, lack of linkage. Lack of linkage in potato production, especially the role of enterprises in the value chain, leading to low value of potatoes, on the other hand, difficulty in making potato products a commodity large scale production in the near future. Potato production areas have not met the safety standards and VIET GAP standards

- The price is completely dependent on the market price, lack of stability. In the long term, it is necessary to consider supporting producers in introducing and promoting products to ensure quality and price stability, to avoid damage to producers and to preserve products after harvest.

- Public policies and services that support and affect the product consumption process are very few, almost nonexistent.

- The management of the authorities in the production and consumption process is still limited, has not yet fulfilled the requirements of product brand management and especially the product traceability is done to step by step improve product quality to meet the requirements of consumers.

- The propaganda, promotion, introduction to product consumption, trademark use, and brand development of Que Vo potato are still limited.

3. COMPLETING PUBLIC SERVICES PROVIDER IN PRODUCTION AND CONSUMPTION OF POTATO IN BAC NINH PROVINCE

Public service provision in the production and consumption of the agricultural chain Potato must apply the State model and the private sector to link financial supply and public service provision. This model has a relatively high economic and social efficiency due to the dynamism, flexibility and flexibility of the supply.

This model helps the State and the private sector to link, cooperate in production, provide public services to the society, diversify forms of supply and promote the positive aspects of economic sectors. .

At the same time, this is also a model capable of limiting and eliminating shortcomings of investment activities because of the presence of both the State and citizens with different strengths and potentials, thereby compensating for each other, effectively implement the economic functions and social roles of the State and enterprises.

First: For production

- Organize training courses on the application of biotechnology in the production of disease-free seed potatoes from tissue culture and aeroponics technology.

- Continue to test and select new varieties of potato, with productivity, quality, resistance to pests and diseases and climate change adaptation into production.

- Organize training courses, guide and manage potato production according to safety procedures;

- Organize the registration and request for certification of safe commercial potato production areas

- Apply biotechnology in the production of disease-free seed potatoes. Applying technology in net houses, greenhouses, automatic watering.

- Continue to bring mechanization into production (continue to mechanize the planting stage, to reduce labor, ensure seasonality and reduce costs for potato production)

Second: For consumption

- Strengthen promotional activities, introduce, carry out trade promotion, seek markets for potato plants.

- Strengthen the promotion and introduction of the brand name of Que Vo potato on the mass media;

- Actively seek, connect to form distribution channels, sell agricultural products; Replication of production and consumption methods according to orders. Good consumption in the domestic market and export oriented.

- Organizing the introduction of Que Vo potato products at fairs, organizing potato fairs; building a district to introduce potato and agricultural products; organize booths to introduce Que Vo potato products.

- Strengthen the activities of the interdisciplinary inspection and control force in the supply and consumption of potato seeds and commercial products.

- Strengthen the management of the trademark of Que Vo potato which has been protected by regulations; strictly manage the printing and label stamps for eligible production households.

- Apply post-harvest technology for preliminary processing and cold storage for seed and commercial potatoes.

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ESTIMATION OF APARTMENT VALUE USING THE HEDONIC PRICING METHOD: THE CASE IN DISTRICT 7, HO CHI MINH CITY, VIETNAM

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Abstract: *This study aims to develop a mathematical model to evaluate the value of apartments in District 7, Ho Chi Minh city. This paper using the hedonic pricing model by a linear regression method. The results revealed that the environment, grading of condominiums, the distance to central, area, view, floor level are the primary descriptors of apartment value in the study area. The results of research models applied to estimate the value of condominiums have an error of 6,73% as compared to those produced by comparative approaches. Generally, the findings of this study have notable implications for developing housing policies, real estate valuation process, both at the national and local levels.*

Keywords: *apartment value; hedonic pricing; linear regression.*

JEL code: C52

1. Introduction

The status of Ho Chi Minh metropolis as the commercial nerve centre of the country with a huge and highly diversified property investment especially in the residential sector. Over the years, condominiums have been an essential and notable real estate market segment in the city. Ho Chi Minh City (HCM City) is facing the fact that the transactions of apartments are so high that the demand for appraising the value of flats for buying, selling, borrowing, mortgages ... increase accordingly. Besides that, valuation companies require accurate and quick estimation of property value. Therefore, it is necessary to have a mathematical model to measure the impact factor to quickly assess the apartment value.

Much work has been done on the relative impact of factors that influence house prices in the developed countries (Sander ., et al, 2009; Gaspareniene L., et al, 2016; Calmasur, 2016; Khiew& Lee, 2019; Cordera, et al, 2019). The different contextual and cultural settings as well as differences in property market characteristics obviously limit the direct application of these methodologies and their findings to Vietnam situation. Documented empirical studies in Vietnam are scanty. Tran Thu Van & Nguyen Thi Giang (2011), Nguyen Quynh Hoa & Nguyen Hong Duong (2015), Bui Phuong Minh (2017), Toan Bui Ngoc (2020) are notable among the limited Vietnam empirical studies. More than that, most of them have employed data sources of property price for the overall analysis, not the survey data on apartment prices. However, there are differences between the factors affect the value of houses and apartments, so it is impossible to use the existing models in this case study.

It is apparent from the foregoing that a considerable gap exists in the body of knowledge in this important aspect of real estate research in HCM City. This study is timely and desirable intended to fill part

of this gap by indicating the predictive and relative impact of the explanatory factors on apartment value in the study area. By building a hedonic valuation model (in the case of District 7-HCM City), the results of the study are expected to be applied in practice to reduce the time taken (compared to other traditional methods) and limit deviations due to subjective assessments by appraisers.

The paper is structured into 7 sections. The second section contains the review of literature followed by the model specification while two next parts present the data and the regression result. To check the suitability of the research model compared to traditional models, the sixth section, applying the research model to estimate the value of two assets in two ways. And the last section covers the conclusions and policy implications.

2. Literature Review

There have been many studies to estimate the housing value or specific property value by applying the hedonic model. According to (Sander ., et al , 2009) home sale prices increase with closer proximity to parks, trails, lakes, and streams. Proximity to lakes produced the most significant impact on home sale value of these distance variables, followed by parks, trails, and streams. Increasing view areal extents as well as increasing the amount of water and grassy land covers in views also resulted in increased sale prices. Increased view richness in terms of the number of different land cover types in a view reduced home sale prices.

Other research in Turkey, the factors affecting housing prices include housing type, heating, building age, floor level, room number, interior and exterior features, neighborhood, transportation, and view on housing prices (Calmasur, 2016). Khiew& Lee (2019) used a sample consisting of 3367 actual condominium sales transacted in resale market from May 2012 to April 2015 from the Singapore Urban and Redevelopment Authority to estimate condominium resale prices. The study pointed out that The unit size, type of land use right, and distance to the nearest rapid transit station are statistically significant variables. The main findings are (a) in the presence of floor premiums; (b) condominiums more than 400 meters from the subway station have a higher resale price; and (c) there is an increase in floor levels for apartment prices. Accessibility by public transport impact on real estate values is also a finding of empirical research in Rome and Santander (Cordera, et al, 2019).

In Vietnam, the study of factors affecting real estate value has long been concerned. Application of hedonic model on factors affecting real estate prices in HCM City pointed location, distance from property to street frontage, length from property to center, land area, and house area are important variables affecting the value of the property (Tran Thu Van & Nguyen Thi Giang, 2011). Location, land area, and house are also variables that have a great influence on real estate value in experimental research in District 6, HCM City (Ha Van Dung & Phung Thi Thu Ha, 2016). Besides, this study also concludes that the width of the road and the distance to the center of District 6 also affect real estate prices. Security, road width, business advantages, distance to the front, trunk roads, general public educational level, and locations in downtown areas are significant factors impact land prices in Go Vap District (Nguyen Quynh Hoa & Nguyen Hong Duong, 2015). The paper employs additive models based on a comparative approach with a sample of 380 townhouses. The results of regression models applied to measure the prices of several plots of land come up with an error of 10% as compared to those produced by traditional approaches. A rare study of factors influencing the price of apartments: Evidence from Vietnam indicates that apartment prices were positively influenced by size of apartment, presence of balcony, presence of swimming pool, presence of shopping

malls, and periodic rental income or value. Moreover, proximity to the city center exerts a negative impact on apartment prices (Toan Bui Ngoc, 2020). It can be seen that most of the studies are performing an overall analysis of the various factors contributing to property value. To be practical, their findings are essential for the author in developing the research model in the following part.

3. Model Specification

Real estate valuation is of great importance in market management. Recently, the State has issued regulations to change the methods of real estate valuation to ensure the interests of the State, owners, and investors (Le Van Cu, 2014). The most commonly applied methods of housing price evaluation can be broadly divided into two groups: traditional and advanced techniques. According to International Valuation Standard (IVS), there is five traditional mainstream standard recognized valuation methods in the field of property valuation: comparative method, cost method, residual method, profits method, and capitalization/income method. Advanced methods include techniques such as hedonic price modeling, artificial neural networks (ANN), case-based reasoning, and spatial analysis methods (Xiao, 2017). Hedonic price modeling is the most commonly applied of these.

The Hedonic model is one of the oldest economic valuation techniques developed by Lancaster (1966) theory of consumer's demand. He recognized composite goods whose units are homogeneous, such that the utilities are not based on the products themselves but instead the individual "characteristics" of goods—its composite attributes. Thus, the consumers make their purchasing decision based on the number of useful characteristics as well as per-unit cost of each component. According to the hedonic model, prices of marketable goods can be explained by their characteristics. For the housing market, this should be interpreted as both physical characteristics of the property and the characteristics of the local environment where the property is located (Gaspareniene L., et al, 2016). Generally, hedonic price regression models can be classified into four simple parametric functional forms: linear, logarithmic, linear-logarithmic, and semi-logarithmic (Xiao, 2017). Overall, the factors identified by the hedonic approach can be referred to as micro factors, since they only relate to a very narrow scope of reality and describe the characteristics of the particular property (e.g., area, view, environment, standard of finishing) and its localization (noise levels around a property, distance to a park or a bus stop). The correct identification of these features is important in estimating real estate values.

The hedonic pricing model applied in this paper uses data on housing prices along with observable characteristics of the apartment and the environment to estimate the degree of contribution of these factors to the apartment value. The implicit marginal price of individual traits can be calculated using a multiple regression model with housing price as the dependent variable and various characteristics as explanatory variables. Under the assumption that the housing market is in equilibrium, the estimated marginal implicit prices derived from regression coefficients represent the price an individual would be willing to pay for an additional unit of a particular characteristic holding all other features constant.

We use ordinary least squares regression (linear regression) analysis to estimate the hedonic pricing model. This model may be written as:

$$\text{PRICE} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \varepsilon_i$$

Where PRICE is a dependent variable, the market price of apartment is calculated per 1m²; Xi is independent variables, vector of characteristics; βi is implicit prices of the characteristics; εi is an error term. Details on the estimation procedure and variables are described below.

Table 1. Definitions for study variables and expected relationship to apartment values

Variables name	Definition	Expected relationship to price
GRAD	Grading of condominium. Dummy variable indicating whether apartment is grade-I (high class) (1) or not (0).	Positive
AREA	Area of apartment (m ²)	Negative
FLOOR	Apartment floor	Positive/ Negative
CORNER	Dummy variable indicating whether apartment is in corner (1) or not (0)	Positive
VIEW	The landscape is visible from the apartment. Dummy variable indicating if an apartment has a view of residential areas, internal areas, other blocks (0 if yes, 1 if no)	Positive
ENVI	Dummy variable indicating environmental amenities. (1 if the building near park, river, airy space; 0 if it's a high density of construction, lack of green space)	Positive
DIST	Distance from the building to central (Ben Thanh market – 1 district, HCM city)	Negative

Data

This study employs a standard hedonic model to test the hypothesis that a combination of housing attributes influences apartment values. Primary data for the study is based on a sample of 160 apartments belong to 7 different commercial apartment buildings in district 7, HCM city. Data is collected within only six months before the survey (January 2020 to June 2020) helps reduce the effects of macro fluctuations in the real estate market: capital investment, inflation, exchange rates, interest rates. The populations are randomly collected from brokers and homeowners who wanted to sell their property. Unit price ranged from VND 26 million/m² to less VND 57 million/m².

Table 2 presents the descriptive statistics of the dependent and independent variables. The minimum value for flats in the study area is VND 26 million/m² and the maximum VND 57 million/m². The mean value is VND 38,05 million/m², while the standard deviation is 7,54. The minimum area is 51,9m², a maximum of 180m² and a mean of 85,91m².

Table 2. Descriptive Statistics of the variables

Variables	Mean	Maximum	Minimum	Std. Dev.	N
PRICE	38,05011	56,38462	25,56701	7,542616	160
GRAD	0,837500	1	0	0,371236	160
ENVI	0,325000	1	0	0,471330	160
AREA	85,90950	180,0000	51,90000	26,11573	160
FLOOR	10,90000	33,00000	2,000000	7,054220	160
CORN	0,325000	1	0	0,471330	160
VIEW	0,525000	1	0	0,502525	160
DIST	7,677500	9,800000	4,100000	1,832821	160

Result And Discussion

In an attempt to detect multicollinearity, a correlation matrix was constructed to infer the extent of correlation among the variables studied. Table 3 below shows the results of the matrix.

Table 3. Correlation matrix for dependent and independent variables

	PRICE	AREA	FLOOR	VIEW	CORN	DIST	ENVI	GRAD
PRICE	1,000							
AREA	-0,003	1,000						
FLOOR	0,419	0,051	1,000					
VIEW	0,375	0,083	0,361	1,000				
CORN	-0,183	0,315	0,177	0,126	1,000			
DIST	-0,286	0,380	-0,419	-,212	-0,040	1,000		
ENVI	0,320	0,489	-0,222	-0,035	-0,197	0,592	1,000	
GRAD	0,477	-0,005	0,419	0,192	0,016	-0,206	-0,273	1,000

Drury (2008) documents that if the multicollinearity among two variables is 70% and above, then it is a case of concern. In the present study, we cannot find any instances of severe multicollinearity as the maximum correlation is 59% between the environment and distance to central. Usually, the further away from the center, the more land is available for real estate development and, therefore the better environmental factors. A VIF test conducted further to check the extent of multicollinearity among the independent variables revealed a mean VIF of 1,654 in Table 4, which is very small (less than 10, the rule of thumb) thus affirming the absence of any multicollinearity. Table 4 below highlights the estimation results of OLS regression.

Table 4. Hedonic model estimates for linear functional form

	Coefficient	Sig.	VIF
(Constant)	45,610	0,000	
AREA	-0,087	0,000	1,826
FLOOR	0,139	0,002	1,610
VIEW	2,435	0,000	1,191
CORN	0,487	0,429	1,413
DIST	-2,269	0,000	1,930
ENVI	15,711	0,000	2,280
GRAD	11,040	0,000	1,329
R²		0,842	
ADJUSTED R²		0,834	
P>F		0,000	

The regression analysis for the hedonic pricing model, which is our general model, revealed an R² of 0,834, which means that 83,4% of the variation apartment market price in District 7 – HCM city is explained by the variables included in the study. The p-value of the F-test also shows significance at 1% level, and this leads to the regression model significantly predicts housing price. The coefficient of variation (β), which explains the direction of variability, is positive for FLOOR, VIEW, CORN, ENVI, GRAD,

while it is negative for AREA, and DIST respectively. This is consistent with the research hypothesis. The regression results showed a positive impact with significance at 1% level for AREA, FLOOR, VIEW, DIST, ENVI, GRAD. Thus our null hypotheses for the variables described above are rejected at 1% significance level, and the alternative hypothesis is accepted, thus documenting the effect of the variables described above on apartment value. CORN is not statistically significant variable with p-value comes in at 0,429.

Evaluating the independent variables presents interesting and useful picture about the relative importance of housing characteristics in the valuation of apartment in the study area. All parameter estimates display signs and magnitude that are in line with theoretical expectations and corroborate previous research. This shows that the unit price of an apartment is significantly and positively affected by grading of condominium, floor level, the landscape is visible from the apartment, environment. In contrast, it is negatively affected by area of apartment, distance to central. Negative correlation between per unit price and apartment area is consistent with the law of demand (an economic principle that explains the negative correlation between the price of a good or service and its demand). If all other factors remain the same, the larger the area, the higher the property value, the quantity of demand decreases and vice versa. For apartments with smaller sizes attracts more customers, so the unit price is also higher. And the last, the apartments which are closer to the downtown enjoy some advantages with higher value. Among all the expectations of investors, speculators, or buyers in general, the distance from the project to the city center plays a key role in their purchase decision. Projects located near the center always attract buyers due to the convenience to commune, study, work, et. This is in line with what has been reported by Calmasur (2016), Toan Bui Ngoc (2020).

Applying The Research Model To Estimate Apartment Value

The regression model is used to determine the value of apartments: (1) No. B3-04, The 2nd Garden Court building, Quarter 4, Tan Phong Ward, District 7, Ho Chi Minh City; (2) 24.08A.X2 Sunrise City, Nguyen Huu Tho Street, Tan Hung Ward, District 7, Ho Chi Minh City.

Table 5. Describe the specific characteristics of the subject property

Subject Property	B3-04, The 2 nd Garden Court building	24.08A.X2 Sunrise City building
Land plot detail	Land plot No. 3, Map No. 32; House ownership certificate No. CH 03675	Land plot No. 73, Map No. 03; House ownership certificate No. CH 10685
The grading of condominiums	Grade-I (high class) condominiums	Grade-I (high class) condominiums
Location	The appraised property is located at the Garden Court 2, Quarter 4, Tan Phong Ward, District 7, Ho Chi Minh City. The building is located on Ton Dat Tien street; 300m from Anh Sao Bridge; 8,1km from the city center.	The appraised property is located at the Sunrise City building, Tan Hung Ward, District 7, Ho Chi Minh City. The apartment is located on Nguyen Huu Tho street; 4,2 km from the city center
Floor level	4th floor	24th floor
Area	103,83 m ²	62,3m ²
View	Internal area	The riverside park

Environment	The appraisal property is located in a stable residential area, complete infrastructure, right security areas, and close to the center of other urban areas, convenient roads, and a fresh and airy living environment suitable for living.	The appraisal property is located on the front of Nguyen Huu Tho street, it is a bridge between the city center and Phu My Hung urban area, and southern Saigon districts such as Nha Be, Can Gio and Binh Chanh. This is the intersection of the main traffic axes, so vehicles are frequent, apartments are affected by dust, noise.
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The unit price of apartments is estimated by the research model and compared with the results calculated by the comparison method. The outcomes are summarized in Table 6:

Table 6. Estimated results of apartments by two methods

Subject Property	A consequence of the comparative method (VND/m ²)	A consequence of the hedonic model (VND/m ²)	Error
B3-04, The 2 nd Garden Court building	41.823.000	45.526.000	8,86%
24.08A.X2, The Sunrise City building	48.438.000	46.308.000	-4,6%

Compare the results of determining the value of apartments by two different methods, ranging from 4,6% to 8,8% (in terms of magnitude). This result is entirely acceptable.

Conclusions and Policy Implications

The study recognizes the apartment as a multi-dimensional product comprising of locational, characteristic, and environmental attributes. The study employed the hedonic price model to determine both the predictive and relative impact of these explanatory variables on apartment value in the study area. The results identified the environment, grading of condominiums, the distance to central, area, view, floor level in that order, as the principal descriptors of apartment value in the study area. This result is mostly consistent with previous studies in hedonic residential property market analysis.

To determine the model's suitability with traditional methods, the author evaluates the apartment value by two methods: one is the comparative method (traditional methods), and the other is the Hedonic pricing model. The results of the two ways differ by 6,73%. This justifies the appropriateness of the research model and points to the possibilities of wide application in practice. Despite the conceptual limitations of the theory, the results of the study illustrate the feasibility of applying the technique as a framework for housing market analysis in HCM city; at least in the apartment submarket where a majority of players possess a reasonable level of market information and the property type exhibits a measure of homogeneity.

Using the above method to determine real estate value has primary advantages such as estimating the impact of many factors on real estate value and the dynamic nature of this relationship is considered; Modern estimation tools with computer techniques should be able to flexibly determine the value of assets in the event of changes in asset characteristics; Quickly determine the value of real estate in bulk. Besides the advantages, using this method requires an extensive and reliable database. At the same time, for special assets or valuation for particular purposes, the bases of value are other than the market value to be explicitly analyzed for each asset.

By analyzing the micro factors impact apartment value, the research model potentially promises many benefits. It would provide real estate developers with crucial information on customer preferences in terms

of housing attributes. The pricing model also offers excellent benefits to the real estate valuation profession. Besides providing an alternative advanced valuation methodology, the model could enhance the reliability of results apartment valuation by cutting down on the subjectivity of valuers in the valuation process (one of the elements causing inaccuracy in property valuation). Such a scientific way to ensure a fair, consistent, and transparent valuation process. These attributes had particularly endeared the technique to the valuation profession, especially in the analysis of the housing market as well as in mass valuation.

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FACTORS AFFECTING CONSUMERS' DECISION TO USE E-WALLETS IN HO CHI MINH CITY

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Abstract: *In the era of Industry 4.0, E-wallet is a modern and useful form of online payment, bringing many benefits to users. Vietnam is one of the potentials fastest-growing mobile payment application markets in the world and E-wallet market in Vietnam become more and more vibrant, but also intense competitive. One of the reasons for the rapid growth of e-Wallet in the last few years is that e-wallet providers have understood the psychology and needs of consumers. Therefore, the goal of this study is to identify and evaluate the impact of factors affecting people's decisions to use E-wallets in Ho Chi Minh City. Using a combination of qualitative and quantitative research methods with a sample of 150 responds, the research results show three factors including: (1) perception of usefulness; (2) perception of ease of use and (3) social influence on the decision to use E-wallets, the levels of influence are 0,115; 0,453; 0,193. This research also suggests policy implications to the suppliers, help them understand their consumers, establish appropriate business policies and strategies, and promote the using E-wallets of the people of HCMC in particular and the Vietnamese in general.*

Keyword: electronic/e-wallet, decision to use e-wallets, Hochiminh City.

JEL Classification Code: D910, M310, M370

Introduction

In the current development of e-commerce, the demand for online payments is increasing. Non-cash payment is a worldwide trend and is being chosen by a large number of Vietnamese people as an alternative to traditional payment. The convenience of cryptocurrencies and technologies that bring safety and fastness to users have exploded in online payment methods, especially E-wallets. Currently, E-wallets are considered as one of the safe and convenient online payment forms, in accordance with the technology conditions and needs of consumers (Nguyen Hai, 2019).

According to survey results of the World Bank, non-cash payment has become a popular form of payment in many developed countries around the world with the spending value of people accounting for more than 90% of the total. number of daily transactions (Nguyen Hai, 2019). According to Worldpay (2017), the transaction volume increased by 11.2% during 2014-2015 to reach 433.1 billion USD, with a growth rate of 43.4% in Asian market, the proportion of cash in total the amount of money in the economy was only about 7.7% in the US and 10% in the Euro area in 2016.

In Vietnam, E-wallets are quite new to many people and businesses. According to the State Bank's report, in the first six months of 2019, the number of non-cash transactions increased by 30%, the value of non-cash transactions increased by 18%. However, the Ministry of Information and Communication

announced at Internet Day 2019, in 2019 Vietnam's population reached 97 million people, with 64 million Internet users, up to 28% compared to 2017, it is a very favorable condition. benefits to develop E-wallet services (Nguyen Hai, 2019). The Prime Minister has also approved a project to develop non-cash payments for the 2016-2020 period, with Vietnam moving towards a 90% non-cash economy by 2020 by reducing transactions by cash and increase electronic payments. Accordingly, at least 50% of households in the city will use electronic payments for daily transactions by 2020.

Since the first E-wallet was licensed by the State Bank (SBV) to pilot operation in Vietnam in 2009. Up to now, Vietnam has more than 20 E-wallets operating and competing strongly in the market such as Momo, Zalopay, Moca, Airpay ...etc., especially, MoMo wallet has reached more than 5 million users, is a partner of 12 international banks and card companies. The Vietnamese E-wallet market is growing day by day with the participation of both foreign service providers and increasingly diversified E-wallets. Although the amount of transactions through E-wallets in Vietnam is still not much, but according to financial experts, the competition in the market will be increasingly strong.

Therefore, in order to determine the factors affecting the decision to use E-wallets of Vietnamese consumers, particularly the people of Ho Chi Minh City, we conduct a study to survey the influencing factors. to decide to use E-wallets of Ho Chi Minh City residents to develop this payment method in Vietnam in the near future.

The study "Factors affecting the decision to use E-wallets in Vietnam" will provide useful information about the E-wallet market in Vietnam, the factors and their impact level.

Literature review

Although there have been many studies related to customers' intentions for using new technology services, there has been little research on individual customers' intention to use E-wallet services - a Smart payment method, strongly developing and favored in the world (State Bank, 2013).

In the world, there have been a few studies in this field, such as: "The Adoption and Diffusion of Electronic Wallets" by Sahut (2009); "Mobile Wallet Acceptance in Sabah: An Empirical Analysis" by Amin (2009) and "Technology rejection: the case of the wallet phone" by Swilley (2010). However, these studies are based on the TAM - Technology acceptance model of Davis (1989). In this research topic, the author builds a research model based on the Unified theory of acceptance and use of technology (UTAUT) of Venkatesh et al. (2003). The UTAUT aims to explain user intentions to use an information system and subsequent usage behavior and consists of four key constructs: (1) performance expectancy, (2) effort expectancy, (3) social influence, and (4) facilitating conditions. Gender, age, experience, and voluntariness of use are posited to moderate the impact of the four key constructs on usage intention and behavior.

In Vietnam, non-cash payment is very interested, including a number of articles and research works on this issue such as "Non-cash payment in Vietnam", by Mai Thi Quynh Nhu (2014). The article outlines the limitations and proposes some solutions to develop non-cash payments in Vietnam. However, the article only mentions general problems, has not clarified the limitations and solutions for a specific bank. "Non-cash payment: Trends in the world and practice in Vietnam" by Do Thi Lan Phuong (2014), the article outlines the trend of Non-cash payment in the world and in Vietnam today. Since then, there are solutions to develop modern Non-Cash Payment products. "Non-cash Society", by Thach An (2015), the article outlines the benefits of non-cash payments for organizations and individuals, the potential to develop non-cash payments at Vietnam, difficulties and challenges in the popularization of these services.

The studies have reviewed the current status of non-cash payments in our country recently and offer some solutions to develop non-cash payments in the future.

Theory and research model

Conceptual Framework

As in words of Kotler and Keller (2009: 214), the meaning of service is: “A service is an act of performance that one party can offer to another that is essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to a physical product. A service is any act or performance that one can offer to another that is essentially intangible and does not result in the ownership of anything. Its production may or may not be tied to a physical product. Many services include no physical products, and some service firms are purely online, with no physical presence”.

Electronic service (E-service) is a highly generic term, usually referring to “The provision of services via the Internet (the prefix ‘e’ standing for ‘electronic’, as it does in many other usages), thus e-Service may also include e-Commerce, although it may also include non-commercial services (online), which is usually provided by the government.” (Garson, 2004; Muhammad Rais & Nazariah, 2003). E-services (electronic services) are services which use of information and communication technologies (ICTs). The three main components of e-services are- service provider, service receiver and the channels of service delivery (i.e., technology). For example, as concerned to public e-service, public agencies are the service provider and citizens as well as businesses are the service receiver. The channel of service delivery is the third requirement of e-service. Internet is the main channel of e-service delivery while other classic channels (e.g. telephone, call center, public kiosk, mobile phone, television) are also considered (Rowley, 2006).

According to Kotler (2005), the definition of service is “any action or activity that can be offered by one party to another party, which is basically intangible and does not result in any ownership”. According to Supranto (2006), service quality is “a word for service providers is something that must be done well”. Meanwhile, according to Moenir (2008), service is essential “a series of activities, because it is a process. As a process, service takes place on a regular and continuous basis covering all organizational life in society”.

From a provider perspective, service quality is the guarantee of delivering the right scenario service with high professional skills of the supplier staff and the manager. On the customer, service quality is the level of customer satisfaction in the process of service consumption, is the overall service of the business that brings a chain of benefits and fully satisfies the expected needs of customers appropriate with the cost that customers pay.

E-wallets are also known as digital wallets. This is a type of online account, it is usually built into mobile application, computer website. This type of wallet is used for online payment of money without using cash. Such as shopping, paying bills for electricity, water, money transfer, online shopping. On the other hand, we can understand the concept of electronic wallets in a simpler way, E-wallets are essentially similar to physical wallets. However, instead of the money in the wallet, the electronic wallet is different. E-wallet is a collection of money - linking bank accounts - linking cards in the application of the phone. These service providers will cooperate with your bank to manage your money, and through this connection the bank will reduce the management of the customer’s card payments as these will be caused by E-wallet provider manages it.

Paying by E-wallet will reduce cash in circulation, contribute to stabilizing inflation...etc. Up to now, there are more than 20 electronic wallets on the Vietnamese market, however, of which there are only a few

brands popular in the market such as Momo, WePay, Zalo Pay, Ngan Luong ... etc.

Regulations in the E-wallet sector

According to Circular 23/2019/TT-NHNN, when using E-wallets, customers (E-wallet owners) must comply with the following provisions:

- Recharge E-wallets from the customer's checking account or debit card at the bank; receive money from another E-wallet opened by the same E-wallet service provider.

The purpose of using E-wallet is to:

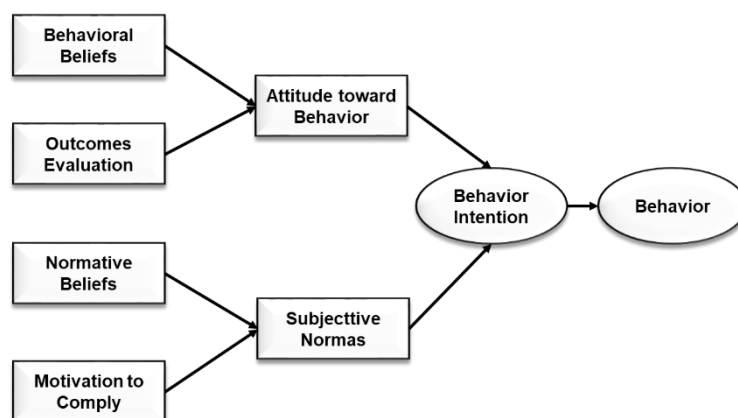
- Pay for legal goods and services.
- Transfer money to other E-wallets opened by the same E-wallet supplier.
- Withdraw money from the E-wallet to the customer's checking account or debit card at the bank.
- It is strictly forbidden to use E-wallets to conduct transactions for the purposes of money laundering, terrorism financing, fraud, fraud and other law violations.

- In addition, Circular 23 also added the regulation that individuals opening wallets must provide information such as citizenship identification or identity card or valid passport, birth certificate (for individuals who are Vietnamese citizens under 14 years old).

Reference model

The Theory of Reasoned Action (TRA; Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and its extension, the Theory of Planned Behavior (TPB; Ajzen, 1985, 1991), are cognitive theories that offer a conceptual framework for understanding human behavior in specific contexts. In particular, the theory of planned behavior has been widely used to assist in the prediction and explanation of several health behaviors. According to the initial Theory of Reasoned Action, an intention to engage in a certain behavior is considered the best predictor of whether or not a person actually engages in that behavior. Intentions, in turn, are predicted by attitudes and subjective norms. That is, the more positively a person regards a certain behavior or action and the more they perceive the behavior as being important to their friends, family, or society, the more likely they are to form intentions to engage in the behavior. Ajzen, however, noted the importance of a behavior being.

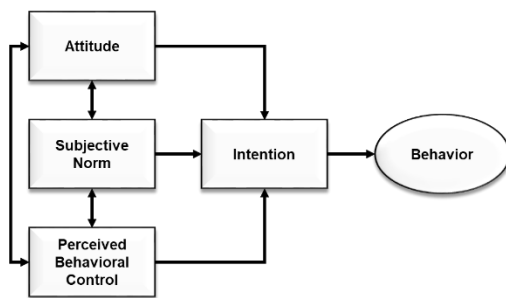
Figure 1: Theory of Reasoned Action



Source: Fishbein & Ajzen, 1975

The theory of planned behavior was proposed by Icek Ajzen (1985) through his article “From intentions to actions: A theory of planned behavior.” The theory was developed from the theory of reasoned action, which was proposed by Martin Fishbein together with Icek Ajzen in 1980. The theory of reasoned action was in turn grounded in various theories of attitude such as learning theories, expectancy-value theories, consistency theories (such as Heider’s balance theory, Osgood and Tannenbaum’s congruity theory, and Festinger’s dissonance theory) and attribution theory (Fishbein and Ajzen, 1975). According to the theory of reasoned action, if people evaluate the suggested behavior as positive (attitude), and if they think their significant others want them to perform the behavior (subjective norm), this results in a higher intention (motivations) and they are more likely to do so. A high correlation of attitudes and subjective norms to behavioral intention, and subsequently to behavior, has been confirmed in many studies (Sheppard, Hartwick, Warshaw, 1988).

Figure 2: Theory of planned behavior

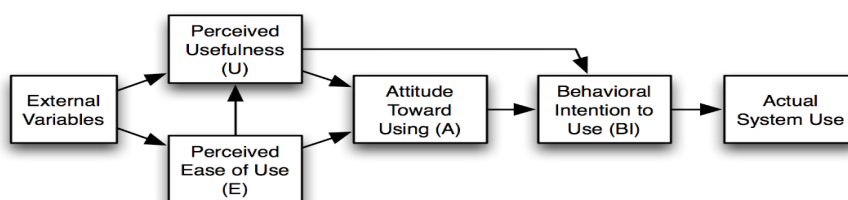


Source: Ajzen, 1985

To explain personal use behavior in the field of information, Fred Davis (1989) introduced the Technology acceptance model (TAM) based on the Theory of Reasoned Action (TRA) of Ajzen & Fishbein. The technology acceptance model (TAM) is an information systems theory that models how users come to accept and use a technology.

The actual system use is the end-point where we want everyone to be able to do with technology, so we have to form Behavioral Intention, which is a factor that leads people to use the technology. The behavioral intention (BI) is influenced by the attitude (A) which is the general impression of the technology. The TAM has been continuously studied and expanded—the two major upgrades being the TAM 2 (Venkatesh & Davis 2000 & Venkatesh 2000) and the Unified Theory of Acceptance and Use of Technology (or UTAUT, Venkatesh et al. 2003). A TAM 3 has also been proposed in the context of e-commerce with an inclusion of the effects of trust and perceived risk on system use (Venkatesh & Bala 2008).

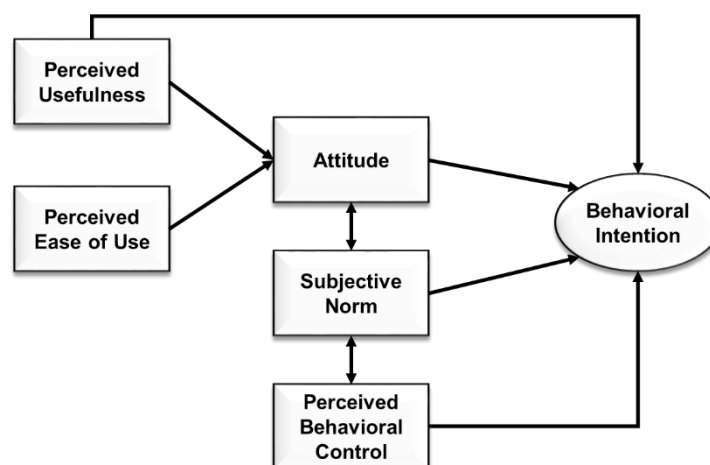
Figure 3: Technology acceptance model



Source: Davis, 1989

Taylor and Todd (1995) collected data from 800 students using computers in university libraries and then rebuilt a model by combining elements of Planning Behavioral Theory (TPB) with factors in the technology adoption model (TAM). This paradigm is also known as Decomposed Theory of Planned behavior, because trust factors are decomposed in this model. This model has an advantage over the TAM model and the separate TPB model in that it identifies specific beliefs that can influence information technology use, increases the ability to explain behavioral decisions, and The correct understanding of behavioral events. The main component of the model is determined by the “use intention”. C-TAM-TPB that mean model combining the technology acceptance model and theory of planned behavior

Figure 4: An Integrated Analysis of Technology Acceptance Behavior Models



Source: Taylor and Todd, 1995

Amin's empirical study in Malaysia (2009) conducted an empirical study in Sabah - Malaysia on the factors affecting the intention to use mobile wallets of individual customers. The author extends the applicability of the technology acceptance model (TAM) in a mobile wallet context, by adding perceived expressiveness, knowledge about mobile wallet and perceived credibility in addition to perceived usefulness and perceived ease of use of Mobile Wallet have an impact on intent to use mobile wallets of individual customers in Sabah - Malaysia with 95% significance.

Swilley (2010) relied on TAM to build a seven factors model including Perceived Usefulness, Feeling Easy to Use, Subjective Standards, Perception of Risk, Safety / Security, Attitude and Intent to Use. To test research models and hypotheses, Swilley conducted two independent surveys. The first survey was conducted through direct interviews with a survey questionnaire with university students and obtained 226 responses. The second survey was conducted via email and 480 responses were obtained. The results of data analysis from the two surveys above show that Perception of ease of use positively affects Perception of usefulness, Perception of risk positively affects to Attitude towards M-wallet. Negative influence to attitude towards M-wallet and attitude towards M-wallet has a negative influence on intention in use.

Another study by Sahut (2009) used the Technology acceptance model (TAM) and took into The cost of using the E-wallet to analyze the case of the Moneo Electronic Wallet. Despite the strong and consistent increase in the use of electronic payment methods worldwide, the diffusion of electronic wallets is still far from widespread. Analysis of the failure of electronic wallet uptake has either focused on technical issues or chosen to analyze a specific scheme (Stalder, 1998). This research proposes a joint approach

to analyzing key factors affecting the adoption of E-wallets by using the ‘Technology Acceptance Model’ (Davis, 1999) which we have expanded to take into account the cost of using E-wallets. Sahut uses this model to analyze Monéo, the only French electronic wallet still in operation.

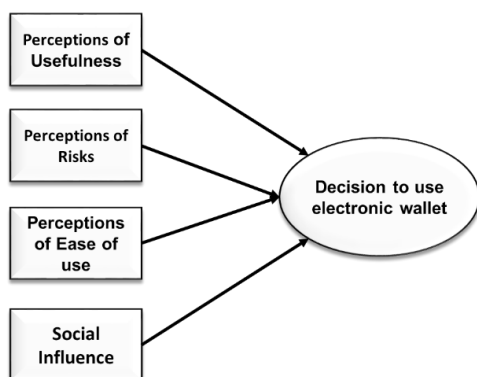
Table 1: Dependent variable: Factors affecting the city people’s decision to use e-wallets in HCM City

Definition	Components observed variables	Reference from research
Is a scale based on the proposed influence factors in the research model	There is a positive relationship between Perception of Usefulness and the decision to use E-wallets in Ho Chi Minh City	Sahut (2009) Swilley (2010)
	There is a positive relationship between Perception of Ease of use and decision to use E-wallets in Ho Chi Minh City	Swilley (2010) Amin (2009)
	There is a negative relationship between Perception of Risk and decision to use E-wallets in Ho Chi Minh City	Swilley (2010) Sahut (2009)
	There is a positive relationship between Social Influence and the decision to use E-wallets in Ho Chi Minh City	Venkatesh (2003)

Source: Research team

In this study, TAM is the main model to explore factors influencing the use of E-wallets. However, this model does not include social factors. Therefore, the group chose to combine the TPB model (Planning Behavioral Theory Model) and TAM (Technology Acceptance Model), also known as C-TAM-TPB model. This model has advantages over the TAM model and the separate TPB model in that it identifies specific beliefs that can influence information technology use, increases the ability to explain behavioral decisions, and correct understanding of behavioral events. This study also removes some intermediate variables, reduces the indirect relationships between the variables of the reference models, and conducts research on the direct relationship between the independent variables to the dependent variables. multi-variable linear regression model. The group selected factors in the C-TAM-TPB scale model and Swilley’s model (2010), including: Useful perception, Perceptions of Risk, social influence and Perception of Ease of use. From there, the models and hypotheses for the report, including: Dependent variables: Decisions to use E-wallets of Ho Chi Minh City residents and Independent variables: Perception of Usefulness, Perception of Risk, Perception of Ease of use, Social influence.

Figure 5: Proposed research model



Source: Research team

From the research model, the authors propose the following hypothesis:

Perception of usefulness affects to Attitude towards M-wallet and attitude towards M-wallet has an affect to intention in use (Swilley, 2010). So that, we get hypothesis H1: There is a positive relationship between Perception of Usefulness and the decision to use E-wallets.

Perception of Ease of use affects to Attitude towards M-wallet and attitude towards M-wallet has an affect to intention in use (Swilley, 2010). So that, we get hypothesis H2: There is a positive relationship between Perception of Ease of use and decision to use E-wallets

Perception of Risk affects to Attitude towards M-wallet and attitude towards M-wallet has an affect to intention in use (Swilley, 2010). So that, we get hypothesis H3: There is a negative relationship between Perception of Risk and decision to use E-wallets

The UTAUT aims to explain user intentions to use an information system and subsequent usage behavior and consists of four key constructs: (1) performance expectancy, (2) effort expectancy, (3) social influence, and (4) facilitating conditions (Venkatesh et al., 2003). So that, we get hypothesis H4: There is a positive relationship between Social Influence and the decision to use E-wallets.

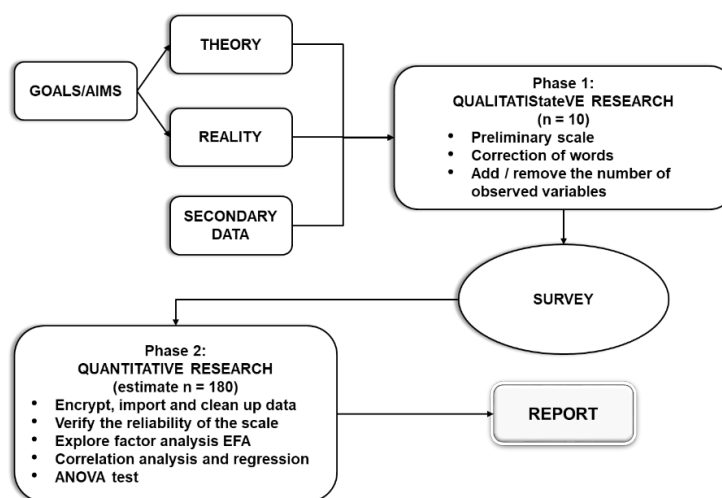
H5: There is a difference in the demographic of decisions to use E-wallets.

Methodology of research

Processing

The study overview is described in the flowchart. First of all, based on the theory and the necessity of practice, the main tasks need to be performed in accordance with an objective and scientific order, logically arranged, helping the research team to carry out their research.

Figure 6: Research process



Source: Research team

First of all, based on the theory, the research method is used to test and establish a set of scales to meet the requirements of mathematical statistics in data analysis and processing, these data will be used to evaluate factors affecting the decision to use E-wallets of the people of HCMC.

The testing of models and hypotheses is done through quantitative research, the interviews with the expected sample size of about 180 responses. The sample size is based on the standard formula (Tabachnick & Fidell, 2007; Nguyen Dinh Tho, 2011) defined as: $n \geq 50 + 5p$. Therein: n is the minimum sample size, p is the number of independent variables in the model. This formula is relatively suitable if $p < 7$. The group's topic suggests a model with four independent variables, so it satisfies the conditions for applying the above formula. The minimum number of samples required is 130 ($50 + 5 * 16$). These are self-scoring questionnaires. Each answer is rated on a 5-point Likert scale (1 = totally disagree, 2 = disagree, 3 = no idea, 4 = agree, 5 = totally agree) (Likert, 1967). The questions in these questionnaires have been developed and tested to suit Vietnamese conditions.

After the data collected is processed by SPSS version 20nd. The work is done in formal research include: preliminary evaluation of the scale; factor analysis of discovery; correlation analysis; regression analysis; analysis of variance (ANOVA). In analyzing, evaluating and verifying scales, we will continue to exclude, group, or classify the component variables according to their characteristic groups and be appropriately named by the exploratory factor analysis (EFA).

The research team conducted an inspection to discover the factors affecting the decision to use E-wallets of people in Ho Chi Minh City. This is a quantitative study that is done in two phases: Phase one - qualitative research; Stage two - quantitative research. Before formulating the official scale, the author conducted preliminary research with experts by direct interviews ($n = 10$) to edit words.

With 16 observed variables in the draft scale, after adjustment, the preliminary scale is still 16 observed variables belonging to 4 groups of factors (independent variables) and 4 observed variables belonging to the factor "decide to use the electric wallet of the people of HCMC" (dependent variable).

Formal research by quantitative method, in fact, online survey via google.doc form with a sample size of 150. This study is used to evaluate the reliability and test the scales in the model of the topic. through testing Cronbach's alpha coefficient, total variable correlation, EFA analysis. After collecting and processing and analyzing data.

Research samples are those who have used and are using E-wallets in Ho Chi Minh City. The age from about 18 - over 55 years old, regardless of gender.

Qualitative research

Based on the relevant theories and previous studies reviewed, the team proposes scales for the independent and dependent variables. Next, the group sends sample surveys to experts to receive exchange ideas and suggestions for the drafted questionnaire. After receiving suggestions from experts, the group synthesized the opinions to adjust the scale and variables in the research model, thereby completing the official questionnaire for the survey to get data. primary, conduct quantitative research.

The results of the discussion are four independent variables and one dependent variable as proposed by the research model, all of which are retained and are deemed necessary and appropriate in the analysis of the factors that influence the decisions. using e-wallets of people in Ho Chi Minh City.

Quantitative research

After having scale results for the variables in the model from qualitative research, the team designed the questionnaire and coded the observed components of the dependent variable and the independent variables.

The reliability of the scale is assessed through Cronbach's Alpha coefficients. Use Cronbach's Alpha's confidence coefficient method before analyzing EFA factors to eliminate inconsistent variables as these variables can create dummy factors. If Cronbach's Alpha coefficient > 0.6 : Scale factor is appropriate. After removing the unreliable variables through Cronbach's Alpha analysis, the exploratory factor analysis method EFA is used by the author to evaluate two important values of the scale, the Convergent validity and Discriminant validity, at the same time set the estimated parameters by each group of variables.

When analyzing the exploratory factor EFA should consider the following criteria:
 – KMO coefficient (Kaiser-Meyer-Olkin): is the index used to consider the appropriateness of factor analysis. Large KMO value means factor analysis is appropriate (Nguyen Dinh Tho, 2011). Usually a value of $0.5 \leq \text{KMO} \leq 1$ is considered suitable for factor analysis (Hoang Trong & Chu Nguyen Mong Ngoc, 2008).

Bartlett test: statistically significant (Sig. < 0.05): This is a statistical quantity used to consider hypotheses that the variables have no correlation in the population. If this test is statistically significant (Sig. < 0.05), the observed variables are correlated with each other in the whole can be analyzed for EFA (Hair, 2010).

Factor loading: According to Hair & ctg (1998, 111) is an indicator to ensure practical significance of EFA:

- Factor loading > 0.3 is considered the minimum
- Factor loading > 0.4 is considered important.
- Factor loading > 0.5 is considered practical.

The authors choose the diagnostic criteria for factor load factor must be > 0.5 . The observed variables with this coefficient less than or equal to 0.5 will be rejected.

Total variance extracted: must be at least $\geq 50\%$ (Nguyen Dinh Tho, 2011), representing the percentage variation of the observed variables. That is, considering the 100% variation, this value tells us how much of the data variation is explained by the factor analysis.– Stopover when extracting Eigenvalue factors: must be at least ≥ 1 (Hair, 2011).

Results and Discussion

After surveying, we obtained 180 responses. Proceed to discard non-standard responses, keeping 150 valid responses.

Sample tests with three attributes: gender, age, and occupation. Sample statistics for demographic variables show heterogeneity in sex, age, and occupation. Female for the majority, the age from 18 to 24 is 53.3%, occupations are students, 52% students. The most used electronic wallet is MOMO, reach in 46%.

Table 2: Descriptive statistics

Sex					
Frequency		Percent	Valid Percent	Cumulative Percent	Frequency
Valid	Male	63	42.0	42.0	42.0
	Female	87	58.0	58.0	100.0
	Total	150	100.0	100.0	
Occupation					

Valid	Student	78	52.0	52.0	52.0
	Officer/ Civil servant	26	17.3	17.3	69.3
	Business	29	19.3	19.3	88.7
	Houseworker	7	4.7	4.7	93.3
	Other	10	6.7	6.7	100.0
	Total	150	100.0	100.0	
Age					
Valid	Under 18	7	4.7	4.7	4.7
	18 - 24 years old	80	53.3	53.3	58.0
	25 - 35 years old	43	28.7	28.7	86.7
	36 - 50 years old	15	10.0	10.0	96.7
	Over 50 years old	5	3.3	3.3	100.0
	Total	150	100.0	100.0	
Types of e-wallets used					
Valid	Moca	26	17.3	17.3	17.3
	Zalopay	24	16.0	16.0	33.3
	Momo	69	46.0	46.0	79.3
	Vnpay	20	13.3	13.3	92.7
	Other	11	7.3	7.3	100.0
	Total	150	100.0	100.0	
Frequency of use					
Valid	Daily	16	10.7	10.7	10.7
	1-3 times a week	41	27.3	27.3	38.0
	1-3 times a month	36	24.0	24.0	62.0
	Sometimes	54	36.0	36.0	98.0
	Other	3	2.0	2.0	100.0
	Total	150	100.0	100.0	

Source: Research team

Analysis results showed that most of the observed variables met the criteria (Cronbach alpha coefficient ≥ 0.6 and total variable correlation ≥ 0.3). Finally, the study has a total of 20 observed variables before conducting factor analysis to explore EFA. After testing Cronbach Alpha, the satisfactory variables will continue to be included in the exploratory factor analysis. The research team carried out the observed variables of the scales of factors affecting the decision to use E-wallets of Ho Chi Minh City residents through EFA.

The 1st EFA result showed that 4 factors were accepted. And these 4 factors explain 72.849% (> 50%) of the variability of the data, proving that EFA analysis is appropriate. Factor loading values of each observed variable are greater than 0.5, indicating a high correlation between the observed variables with the factors. In addition, we can see that the variable RR1 does not represent data, so we remove this variable. With the second EFA analysis, we retain 15 observed variables, the coefficient KMO = 0.793 > 0.5, so it is suitable with the data. The Chi-squared statistic of Bartlett's test reaches 1411.083 with the significance level Sig. = 0.000, so the observed variables are correlated. Total variance extracted 76% shows the factors explain more than 76% of the variation of the data. Therefore, the scales are accepted. Eigenvalue = 4,869, loading factors are all greater than 0.5.

Table 3: The results of eliminating variables through EFA analysis

	First Rotated Component Matrix	2 nd Rotated Component Matrix
Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.779	0.793
Bartlett's Test of Sphericity	0.000	0.000
Observed variables are excluded	RR1	0

Source: Research team

According to the original theoretical model, the factors influencing the decision to use E-wallets of the people of Ho Chi Minh City include 4 components. When factor analysis, the results also show four factors. Based on the results of Cronbach alpha analysis, 15 observed variables were retained and continue to be used to analyze discovery factors EFA. According to the results of factor analysis of the dependent variable, we have KMO coefficient = 0.780, and Bartlett's test has significance level Sig = 0.000 < 0.5, variance extracted 76% and all variables have factor load coefficients greater than 0.5. Thus, the factor "use decision" includes 4 observed variables, which are QD1, QD2, QD3 and QD4.

Table 3: Rotated Component Matrix^a

	Component			
	1	2	3	4
SD3	.914			
SD2	.892			
SD1	.867			
SD4	.855			
HI1		.857		
HI4		.825		
HI2		.802		
HI3		.726		
RR1			.925	
RR2			.902	
RR3			.902	
XH4				.855
XH2				.837
XH3				.701
XH1				.674

a. Rotation converged in 5 iterations.

Table 4: Correlations

		QD	HI	SD	XH	RR
QD	Pearson Correlation	1	.392**	.526**	.275**	-.044
	Sig. (2-tailed)		.000	.000	.001	.590
	N	150	150	150	150	150

HI	Pearson Correlation	.392**	1	.487**	.270**	-.090
	Sig. (2-tailed)	.000		.000	.001	.274
	N	150	150	150	150	150
SD	Pearson Correlation	.526**	.487**	1	.108	.065
	Sig. (2-tailed)	.000	.000		.187	.432
	N	150	150	150	150	150
XH	Pearson Correlation	.275**	.270**	.108	1	-.045
	Sig. (2-tailed)	.001	.001	.187		.589
	N	150	150	150	150	150
RR	Pearson Correlation	-.044	-.090	.065	-.045	1
	Sig. (2-tailed)	.590	.274	.432	.589	
	N	150	150	150	150	150

** . Correlation is significant at the 0.01 level (2-tailed).

Source: Research team

After the factor analysis phase of EFA, the factors were included in the model test. Factor value is the average of observed components belonging to that factor. Pearson correlation analysis is used to consider the suitability of components in the regression model. The results of regression analysis will be used to test hypotheses from H1 to H4. The correlation coefficients are statistically significant (Sig. <0.05), the analysis shows that the RR factor is correlated for the dependent variable (-0.44 fails), so the RR factor can be eliminated. Despite this, the team still used the RR to run the test regression again.

Regression analysis was performed with 4 independent variables including: Perception of ease of use, Perception of usefulness, Perception of risk, Social influence that affects the decision to use E-wallets of people in HCMC and variable depends on the people's decisions to use E-wallets in HCMC.

The regression model has the form: $Y = \beta_0 + \beta_i X_i + \varepsilon$ (*)

Equation (*) becomes: Decision to use E-wallet = β_1 x Awareness of use + β_2 x Useful perception + β_3 x Perceptions of Risk + β_4 x Social influence + ε

Table 5: Coefficients^a

Model	B	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		Std. Error	Beta				Tolerance	VIF
1	(Constant)	1.683	.356		4.721	.000		
	HI	.104	.073	.115	1.425	.036	.703	1.423
	SD	.362	.062	.453	5.809	.000	.751	1.332
	XH	.155	.057	.193	2.747	.007	.926	1.080
	RR	-.033	.042	-.055	-.800	.425	.976	1.024

Source: Research team

Regression analysis shows that both Perception of usefulness, Perception of ease of use, and Social influence are accepted and have a positive relationship with the decision to use E-wallets due to the

coefficient. Sig. <0.05. And Perception of Risk (RR) has an inverse linear relationship with the coefficient Sig. > 0.05. Therefore, we can conclude that three independent variables HI, SD, and XH are significant in the model and have a positive impact on the dependent variable, because the regression coefficients are all positive signs. Variable RR is eliminated. The very small VIF magnification factor (VIF <2) shows that these independent variables do not have a close relationship with each other, so there is no multicollinearity phenomenon occurring. Therefore, the relationship between the independent variables does not affect the interpretation results of the model.

The adjusted coefficient R² is 0.320. This means that the relevance of the model is 32% or the independent variables explain 32% of the dependent variable to use E-wallets of the people of HCMC. Durbin – Watson achieved 1,850 (between 1 and 3) and accepted the hypothesis of no correlation in the model. Verify the suitability of the linear regression model, considering F value in ANOVA analysis table. This test shows the linear relationship between the dependent variable and the independent variable. ANOVA analysis table shows that the regression model has test F = 77,796; Sig. <0.05 shows that the model is suitable for the data set and can be extended to the whole population (Hoang Trong & Chu Nguyen Mong Ngoc, 2005).

Thus, the linear regression model satisfies the conditions. The regression equation is as follows:

$$QD = 0.115 \times HI + 0.453 \times SD + 0.193 \times XH$$

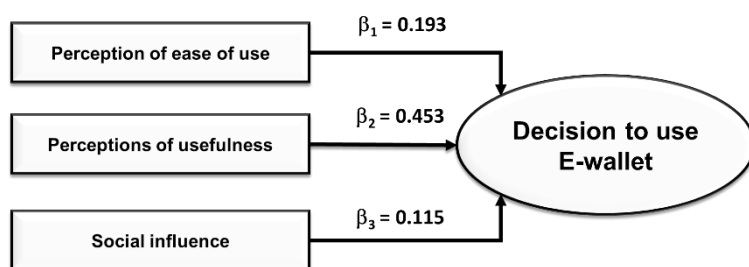
The results of the study shows that the factors influencing the decision to use E-wallets of Ho Chi Minh City people include three factors and their influence levels are arranged in descending order: Perception of ease of use ($\beta = 0.453$), Social influence ($\beta = 0.193$), Perceptions of Usefulness ($\beta = 0.115$). In practice, discussing the results of this study with members who have participated in focus group discussions in the preliminary research stage, from the perspective of who have been using E-wallets, most of the opinions are agreed that the use of E-wallets by the people of Ho Chi Minh City is influenced by factors such as: Perception of usefulness, Perception of ease of use and Social influence.

Conclusions and Policy Implications

On the scale: Some scales that the researchers have successfully tested, but in this study were excluded through qualitative and quantitative research. Some scales are not suitable for Vietnamese consumer culture, some are very good, but only suitable for the developed economy, while the environment and consumption patterns are not yet developed in Vietnam today. is not suitable.

Hypothesis: This study has successfully applied the TPB and TAM model, also known as C-TAM-TPB model and Swilley's model (2010). This model has an advantage over the TAM model and the separate TPB model in that it identifies specific beliefs that can influence information technology use, increases the ability to explain behavioral decisions, and Correct understanding of behavioral events. The group selected factors in the C-TAM-TPB scale model including: Perceptions of usefulness, Perceptions of risks, Social Influence, and Perceptions of ease of use. In terms of research in the Ho Chi Minh City market, the initial research model with 5 useful cognitive factors: Perceptions of usefulness (HI), Perception of Ease of Use (SD), Social Influence (XH), Perceptions of Risk (RR), Decision to use e-wallet (QD). From the research results, we found that three factors and their influence levels are arranged in descending order: Perception of ease of use ($\beta = 0.453$), Social influence ($\beta = 0.193$), Perceptions of Usefulness ($\beta = 0.115$)

Figure 7: The model confirms the research results



Source: Author

Considering the demographic factors affecting the decision to use E-wallets of the people of Ho Chi Minh City, the test results show that there is no difference for the sex groups, age, education level, occupation of the user. Hypothesis H5 is not accepted.

Sample: in this study, using convenient sampling method, interviewing by online survey, the reliability may not be the best.

From the above results, the research team proposes several implications:

First, increase the ease of use expected. According to the analysis results, Perception of Ease of Use is the main factor that has the strongest impact on the decision to use the E-wallet. Therefore, in order to increase the ease of use of the E-wallet, suppliers should improve technology and processes, increase the automatic level of buyer information on electronic orders / invoices, in order to shorten the time for users, increasing the comfort and ease of transactions by E-wallet. Besides, specific instructions for customers before and during the payment transactions by E-wallet.

Secondly, promoting social influence - one of the factors strongly influencing the decision to use E-wallet of individual customers in Vietnam. Therefore, to take advantage of and promote this feature, service providers should take advantage of the pervasiveness of the media, television, social networks, online forums to introduce and promote transmission and dissemination of electronic wallet products. Take advantage of the influence of famous people and reputable people to promote the E-wallet product.

Third, increase usefulness. Useful is the third factor that strongly influences the decision to use an E-wallet of individual customers in Vietnam. Therefore, suppliers need to focus on solutions to increase the expected usefulness of users for their E-wallet products. Specifically, in order to bring the highest efficiency and convenience to customers using E-wallets, suppliers need to learn and catch up with the ever-expanding demands of E-payment of customers and integrating various payment facilities in many fields such as payment for travel reservations...etc., and even money transfer / receipt or international payment for services purchased abroad. In order to help customers, save time and money, suppliers should integrate with E-wallet function to automatically search and propose to customers the most preferential price for the service that customer needs.

Fourth, to help E-wallets become more and more trusted by customers, suppliers need to pay attention to factors such as: Develop a reasonable price policy to attract customers and improve the competitiveness of the E-wallets compared to other electronic payment methods such as Internet banking, Mobile banking, ATM cards, credit cards, debit cards ...etc., service providers need to develop and maintain low-cost policies.

incentives for customers, especially in the new stage of development. In addition, suppliers need to actively link and cooperate with goods / service providers to offer promotion and discount policies for customers when paying with E-wallet. Pay attention to demographic information depending on the goals, business strategies and target customers, suppliers need to consider the influence of factors Age, Gender, Education Experience and Income to build for themselves the right policies to help businesses thrive and achieve the set goals and strategies.

After implementing the topic, with the meanings and limitations that the group has drawn, the group will accumulate more knowledge and draw for themselves the experience experienced during the research process. With the next research direction, the group will learn more in other cities and provinces in the country and can expand the research scope of countries in Asia, because of different region, economy, culture, lifestyle, ... etc., with different users, it will help the group make more conclusions about the decision to use E-wallets, propose specific and more effective solutions.

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DEVELOPING HIGH-TECH AGRICULTURE IN CENTRAL HIGHLAND IN THE CONTEXT OF GLOBALIZATION AND INTERNATIONAL ECONOMIC INTEGRATION

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Abstract: *This article introduces an indispensable trend using high-tech agriculture in agricultural development that the Central Highlands should adopt in the globalization and international economic integration. SWOT matrix was employed to assess strengths, weaknesses, opportunities, and threats of the Central Highlands agriculture sector in the current context. From identified drawbacks, the author offered five solutions to develop high-tech agriculture in the Central Highlands.*

Keywords: agriculture 4.0, Central Highlands, high-tech agriculture, globalization, sustainable agriculture.

JEL Code: Q16

1. Introduction

In the context of globalization and international economic integration, Industrial Revolution 4.0 has facilitated the rapid development of the agricultural sector. Countries such as the United States (US), Australia, Canada, Israel, the Netherlands, etc. have applied high technology, biotechnology, computerization in agricultural production to produce safe, effective, and high-quality products. Also, Asian countries such as Japan, South Korea, China, and Taiwan have transformed agriculture towards high-tech applications and achieved certain achievements (eds. Minh Ngoc, 2017). In addition, the application of high technology in agricultural production has tackled the urgent challenges, including the current shortage of productive land and climate changes. High-tech agricultural development, therefore, becomes an indispensable trend of agriculture in the current context.

In Vietnam, hi-tech agriculture is gradually drawing attention and yielded positive results. Employing high technology in production in some fields such as cultivation, farming, and aquaculture has contributed to the improvement of productivity and quality, thereby satisfying the strict requirements of the international market. However, the development of high-tech agriculture in Vietnam has faced many obstacles, such as the lack of suitable mechanisms, policies, investment capital, and technology. Consequently, the results of applying high-tech agriculture have not been promising as expected (Hoang et al. 2019).

The Central Highlands is one of six key economic regions of Vietnam, including five provinces: Kon Tum, Gia Lai, Dak Lak, Dak Nong, and Lam Dong. This is a major agricultural production area of Vietnam, with various high-value agricultural products. Recently, due to climate changes, the Central Highlands provinces are suffering from the most severe drought in the past 30 years, which attributes to the decrease in agricultural production. As a consequence, many farming households in this area run out of money and

fell into misery. Given the current context in the Central Highlands, it is necessary to develop high-tech agriculture to cope with the above-mentioned challenging circumstances.

2. Theoretical Framework and Methods

2.1 Overview of high-tech agriculture

Stolze (2009) defined that hi-tech agriculture was advanced agriculture in a modernized and highly mechanized economy based on the application of the achievements of biotechnology, ecology, and the environment.

Hung, Thu, and Phi Hung (2019, cited in Von Thunen, J.H. 1966), perceived the High-tech Agriculture zone was the convergence of the most advanced achievements in biotechnology, chemistry, materials, information, and automation in the centralized agricultural system. It aimed to create a production scale and technology demonstration, which had a decisive effect on the transformation of agrarian economic structure.

According to the Ministry of Agriculture and Rural Development of Vietnam: “High-tech agriculture is the agriculture applied new technologies to production, including agricultural industrialization, automation, information technology, new material technology, biotechnology, and high-quality and high-yield crops and animal breeds with high economic efficiency in a unit of area and sustainable development based on organic farming”. Thus, high-tech agriculture is a model of agricultural production that applies scientific and technical achievements in the stages of the production process. High-tech application in agriculture plays a vital role in improving productivity, producing high-quality products, meeting the increasing demands of the market as well as protecting the ecological environment.

Developing high-tech agricultural is the activity of generating modern materials, machines, and equipment for utilization in agriculture; employing state-of-the-art technology in selecting and propagating plants and animals for high productivity and quality; cultivating and breeding with high efficiency; preventing and managing diseases on plants and animals; preservation and processing of agricultural products; developing high-tech services for agriculture; promoting the role of hi-tech enterprises in the farming sector. The ultimate goal of developing high-tech agriculture is to tackle common issues in the agriculture sector, including low productivity, low-quality products, high labor investment, low economic efficiency. The effective utilization of labor and natural resources, along with the application of scientific and technological innovation in the farming sector is a promising approach to enhance productivity, economic efficiency, and quality of products, which ultimately results in sustainable agriculture (Phuong 2017).

High-tech agriculture has been taking place since the mid-twentieth century and growing substantially across the world. A study of Stolze (2009) shows that hi-tech agriculture has become the focus and concern of policymakers, consumers, environmentalists, and farmers in Europe since the mid-1980s. Currently, Europe particularly encourages the trend of applying high technology in agriculture with the Common Agricultural Policy (PAC). In the US, the first high-tech park was established in 1939, and by 1980 there were more than 100 high-tech agricultural parks across the US. In the Asia-Pacific region, hi-tech agriculture is becoming the accelerating trend of interest. According to Hung, Thu and Phi Hung (2019, cited in Choi, C. 2016), high-tech agricultural production is an inevitable movement of the moment through analysis of high-tech application forms in agriculture of specific countries such as Japan, Malaysia, Philippines, Australia, Korea, China, and Thailand. Many Asian countries are piloting the use of big data analysis in farming and developing national strategies to support agricultural automation with robotics, data analysis,

and sensor technology. These instruments are expected to make an enormous improvement in crop yields, quality, and farmer profits.

Globalization refers to the interdependence and integration of markets in the international economy, leading to the increased interconnectedness of national economies. This tendency may contribute to the national development but also pose significant challenges to Vietnam if we cannot hold the opportunities. To take advantage of globalization, Vietnam should have proper strategies to strengthen domestic capacity and to equip people with knowledge and know-how skills.

Given the context of globalization and internationalization, the agricultural economy has witnessed changes in its operation and management procedures. Generally, the agriculture industry of Vietnam benefits from absorbing scientific and technological achievements as well as learning from international lessons. Meanwhile, as economic globalization proceeds, small farm-holdings, and crop diversity have been replaced by monocultural industrial farming under the management of multinational corporations. Small farms, characterized by low levels of organization in cooperatives, lack infrastructure, and financial scarcity, are unable to compete in the face of large corporations (Alinovi et al. 2010). Currently, the majority of agriculture products are results of extensive export-oriented agricultural activities, which are owned by multinational groups (Hung, Thu, Phi Hung 2019, cited in D'Erico M., et al., 2010). Hence, employing hi-tech agriculture to reform this sector, thereby improving competitive capability and enhancing productivity, is an inescapable approach to Vietnam.

The Central Highlands covers an area of 5.46 million hectares, in which 2 million hectares are used for developing agriculture. This region is covered with fertile red basalt soil, together with favorable climate conditions, making it an ideal place for large-scale production specialized in coffee, tea, cassava, pepper, cashew, rubber, etc. However, over the past time, the potential for agricultural development in this region has not been exploited adequately. Currently, the area is facing various adversities such as unstable productivity, insufficient processing, and preservation. Additionally, the quality of agricultural products has not been met the standard for the domestic and international markets, and regional products have not been able to build their own brand. Moreover, production procedures from the input, the process to output activities are not well-organized, causing low-value outcomes (Thu, Phi Hung, Toan 2019 a). Besides that, the Central Highlands region is severely suffering from climate change, including annual droughts and water shortages in the dry season, extreme climate events such as hail, ferocious thunderstorms, tornadoes, etc. This is a result of forest destruction, ineffective natural resources management, and the lack of a long-term strategic plan for agricultural development, which jeopardized agricultural production. Unstable productivity has accounted for the poverty of small farm households in the Central Highlands. Therefore, the development of high-tech agriculture in this region plays a vital role in the agriculture reform into a modern, competitive, and sustainable agro-industry. A transformation of the agriculture sector is expected to increase farming productivity, add value to agricultural products, and to increase household income.

2.2 Research Methods

A SWOT analysis was conducted to assess strengths, weaknesses, opportunities as well as threats of the agriculture sector, thereby identifying strategic goals and providing an appropriate approach for high-tech agriculture in the Central Highlands. The Strengths component provided advantage characteristics of the region that facilitated the development of high-tech farming. The Weaknesses element presented

critical self-awareness on the disadvantages that hindered the development of high-tech agriculture. The Opportunities section showed external factors that can be seized to gain the advantage of accelerating the application of hi-tech agriculture in the region. The Threats part indicated external factors causing negative impacts that might hamper the application of hi-tech agriculture in the Central Highlands. Subsequently, the author constructed a SWOT matrix, which was a technique aimed to remove the hindrances and stimulate the advantages.

Statistical Analysis: Data were collected and synthesized from the dataset of the General Statistics Office of Vietnam, Department of Agriculture and Rural Development and Branches of Rural Development of Kon Tum, Gia Lai, Dak Lak, Dak Nong, Lam Dong provinces. The analyzed data were interpreted to assess the current status and possibility of developing hi-tech agriculture in the Central Highlands.

Methods of analysis, comparison, and synthesis: According to the results, the author analyzed, compared, and synthesized the capabilities and requirements of developing high-tech agriculture in the Central Highlands, and proposed solutions for the development of high-tech agriculture in the region accordingly.

3. Results and Discussion

3.1 Analysis of Strengths, Weaknesses, Opportunities, Threats of high-tech agriculture in the Central Highlands in the context of integration and the technology revolution 4.0

3.1.1 Strengths

The Central Highlands has the following strengths in agricultural development:

The first strength is abundant land resources. The Central Highlands region has a natural area of 54,474 km², accounting for 16.8% of the country's natural area, including 2 million hectares of agricultural land, including 850.1 thousand hectares of annual cropland and nearly 1,151 million hectares of perennial cropland. In particular, the Central Highlands provinces have basalt land areas accounting for 74.25% of the total basalt land area of the country, which is suitable for industrial crops such as coffee, cocoa, and pepper.

Table 1: Acreage for major crops of the Central Highlands compared to the whole country

Crop	Area cultivated (hectares)	Percentage compared to the whole country (%)
Coffee	582,149	89.4
Rubber	251,348	27.0
Pepper	85,000	55.2

Source: Statistical Yearbook of Vietnam 2018

With such abundant land resources, it is very convenient for the application of new technologies and mechanization in cultivation and husbandry to increase the value and competitiveness of agricultural products.

Secondly, a diverse climate is suitable for many crops. The Central Highlands provinces with diverse and abundant natural conditions and many different sub-climatic regions are the premise for developing a diversified agricultural industry with competitive agricultural products. The area has many unique mountain products that cannot be found elsewhere, which is considered a great advantage of high-tech applications in farm development and competition in the domestic market and export.

Thirdly, the Central Highlands has formed large-scale specialized farming areas. With favorable soil conditions, suitable climate for many crops, especially long-term industrial crops and annual crops, the Central Highlands provinces have established specialized farming areas of coffee, pepper, rubber, cashew, tea, etc. This is a prerequisite for high-tech applications in agricultural production. According to statistics, Vietnam currently has 34 hi-tech agricultural zones in 19 cities and provinces, of which Lam Dong is one of the largest high-tech provinces in the country (Hoang et al., 2019). In addition, a number of other provinces in the region have begun to form high-tech agricultural zones, such as in Dak Lak province, the project of establishing high-tech agriculture zone in Cu M'gar district with the scale of 105.5 hectares has been approved; Dak Nong has about 3,300 high-tech farming models (by the end of 2017), the province currently has about 30,000 hectares of coffee cultivated according to clean and sustainable agriculture standards; Kon Tum has also established Mang Den High-tech agricultural zone in Dak Long commune, Kon Plong district; Gia Lai province has also planned to build five high-tech agrarian zones with a total area of nearly 240 hectares (Department of Statistics of Central Highlands Provinces, 2018).

3.1.2 Weaknesses

Firstly, there is a lack of investment capital for hi-tech agriculture. High-tech agriculture needs huge capital for infrastructure, equipment, investment in the production of plant and animal breeds, human training, etc. Meanwhile, capital from the state budget is limited; the most difficult capital to access is the concessional loan of VND 10,000 billion packages; Preferential policies to attract foreign investment are not specific and attractive, so it has not attracted a large number of farmers and businesses to participate. According to the Ministry of Agriculture and Rural Development's statistics, in 2017, 90% of Vietnamese enterprises operating in agriculture had a capital of less than VND 10 billion, bank loans only met 50% of the capital mobilization demand (Bach 2018). Therefore, the lack of investment capital is the biggest weakness in the High-tech agriculture development in Vietnam in general and the Central Highlands region in particular.

Secondly, the scale of production is small and challenging to accumulate land. Manufacturing high-tech agriculture requires large-scale land. Meanwhile, land for agricultural production is mainly from farmers; most of the area is still small and scattered. According to the 2017 Agricultural Census, about 90% of agricultural land belongs to agricultural households and farms, 6% belongs to enterprises, and the rest belongs to other facilities. Most agricultural households are very small in scale. In particular, the group of households cultivating on an area of fewer than 0.5 hectares accounts for 69%; the group with area from 0.5 to 2 hectares accounts for 25%, and the group with an area larger than 2 hectares accounts for only 6% (Hung 2017). The process of land accumulation and concentration is still slow due to the regulations on land tenure, and the time of land use is still inadequate, has not created a motivation to attract investors, etc. so the investment in high-tech applications still faces many difficulties.

Thirdly, the quality of labor resources is low. Human resources is another weakness of the Central Highlands agriculture sector. The population of 5 provinces in the Central Highlands is more than 5.5 million, of which ethnic minorities account for 38.7%; The education level in the labor force is still low compared to the overall index of the country. The rate of the trained labor force in the Central Highlands is also much lower than in other regions of the country in 2017 the rate of the Central Highlands was 14.3% while the national average rate was 21.4%. The rate of untrained labor is still high so that productivity labor only equal to 47.5% of the national average.

Table 2: The percentage of students at the right ages of enrolling in corresponding education levels in the National Educational System 2019.

Unit: %

Socio-economic regions	Education Level		
	Primary School	Secondary School	High School
Red River Delta	98,8	94,9	83,7
Northern Midlands and Mountains	98,1	90,2	65,1
North Central and Central Coast	98,4	92,4	73,8
Central Highlands	96,8	82,8	56,4
South East	97,7	87,5	64,2
Mekong River Delta	97,1	82,4	55,3

Source: 2019 Population and Housing Census Preliminary Report, General Statistics Office of Vietnam

The low qualification makes the majority of agricultural laborers incapable of mastering advanced technology. On the other hand, currently, the Central Highlands provinces have 162 vocational training institutions, including 20 universities, colleges, vocational colleges, vocational secondary schools, etc. However, the training of human resources in the field of agriculture still has many shortcomings: impractical, and the content does not cover all the knowledge, skills in high-tech agriculture, lack of knowledge of international integration, climate change, production linkages, and value chain development, business, market, information technology application, etc (Tuan and Linh 2019).

Fourth, infrastructure for agriculture is weak. Although transport infrastructure in the Central Highlands has been invested and developed strongly in recent years, it still has many limitations such as lack of uniformity, lack of connectivity, failing to meet production and business needs as well as requirements of investors, especially foreign investors. Information technology infrastructure is lacking. It is necessary to apply information technology to the production process of high-tech agriculture. Although the information technology infrastructure has grown significantly over the past few years, the Internet has been extended to remote communes, the percentage of people using mobile phones has increased rapidly, but the Internet connection quality is still low and unstable. In some places, people even do not have access to Internet services. The irrigation system does not meet the production requirements. As of 2019, this region has 2,354 irrigation works with a total storage capacity of 1,535,106 m³ of water (of which the useful capacity is about 1,290,106 m³), according to the design for irrigation of 288,484 ha of crops. The irrigation system in the Central Highlands was planned and established to meet the needs of the agriculture sector under normal conditions. However, due to the impacts of climate change and the degradation of many works, the irrigation system has not met the practical needs of current agricultural production. Specifically, the actual irrigated area of the whole region is 214,645 ha, reaching 74.4% of the design. Compared to the total size of crops that need to be watered in the entire area, the new irrigation system can meet 30% (Vietnam News Agency 2019).

Fifth, there is no stable consumption market. High-tech agriculture will create a large volume of agricultural products; therefore, a stable consumption market is required. For our country in general and the Central Highlands region in particular, the consumption market for products of high-tech agriculture is still limited and unstable. The reason is that many types of agricultural products are not branded; forecast of market demand for hi-tech agrarian products is not yet available or incomplete; Consumption system is not, however, professional, the link between production and consumption is not stable; There is no production

process in accordance with international standards, so it cannot reach the consumption channels of the world market; the price of hi-tech agricultural products are still high compared to consumers' incomes; the fake and counterfeit products are affecting the operations of high-tech agriculture businesses (Dieu 2019).

Sixthly, research, and technology transfer in agriculture have not been developed. Businesses have to receive a transfer from foreign companies most of plants and animals; technical solutions, high-tech agricultural cultivation methods. Meanwhile, due to lack of orientation as well as not meeting the needs of High-tech agriculture businesses, many technological products of agricultural science and technology research facilities are still at testing and cannot be put into production (Mien 2018).

The seventh weakness is the lack of linkages between production and consumption entities. The relationship between entities in the production chain of agricultural products in general and high-tech agricultural products, in particular, has not been established sustainably on the basis of balancing the interests of the parties. According to Nga and Niem (2016), research on the link between farmer households and enterprises in coffee production and consumption in the Central Highlands shows that this link is quite weak, farmers directly engaged in production do not have the opportunity to participate in the final product consumption, most farmers only perform the cultivation stage, not the processing stage. The reason for this unstable relationship is the small-scale farming of households (55%) and farmer's disobedience of associated contracts for agriculture and markets (18%). The participation of State management agencies and local governments in investment promotion and attraction is still very weak, mainly due to the self-study and self-connection of enterprises. Therefore, the lack of cohesion between production, processing, consumption, and export, leading to unstable consumption markets, leads to precarious production.

3.1.3 Opportunities

Firstly, the 4.0 Industrial Revolution helps accelerate the application of high technology science in agriculture. Applications from 4.0 Industry revolution: applications from artificial intelligence help automate the entire production process; biotechnology helps to quickly decode genomes to create new crops that are resistant to pests and adapting to climate change; remote sensing technology in service of management, supervision, and forecasting; nanomaterial technology helps to produce fertilizers and insecticide according to the characteristics of soil microorganisms and helps better preserve agroforestry products, increase quality and expiry date; Agricultural database system is digitized, etc. Also, other applications such as 3D printing technology and robots help reduce labor force, increase productivity, reduce costs (Thanh 2018; Central Institute for Economic Management 2018).

Secondly, the consumer market is being expanded. In the context of deep international integration, commitments in the ASEAN Economic Community (AEC), EU-Vietnam Free Trade Agreement (EVFTA), CPTPP Trade Agreement ... has been being signed and is expected to help accelerate the development of high-quality agriculture.

Thirdly, foreign direct investment (FDI) in High-tech agriculture is increasing. When participating in trade agreements, some countries do not have an advantage in agriculture, so that they may shift their investment sources to Vietnam in general and the Central Highlands region in particular. Attracting foreign direct investment will help accelerate the process of high technology application in agricultural production, forming closed chains with advanced technology, creating possibilities for the Central Highlands - Vietnam agriculture to participate in regional and global value chains.

Fourthly, consumers are tending to use more and more environmentally friendly, safe, and beneficial products for human health. High-tech agriculture helps create quality, safe, and healthy products, so it is gaining more and more trust from consumers (Dieu 2019).

3.1.4 Threats

Firstly, the pressure of competition for output products is increasing. When Vietnam joins the aforementioned trade agreements, agricultural products of other countries will be imported at a more competitive price. In addition, high-tech agrarian products in the Central Highlands are subject to competition from common domestic agricultural products because the price of high-tech agricultural products may be higher than that of conventional products, while counterfeit, fake and inferior quality products not only reduce the competitiveness of the products but also damage the reputation of the business. Meanwhile, there is still no legal corridor to manage, to ensure benefits for businesses, producers, consumers, and to protect the brand reputation of high-tech agricultural products.

Secondly, climate change and natural disasters are getting worse, seriously affecting agricultural production. The Central Highlands has experienced the most severe drought in 30 years. In addition to the risk of drought, water resources are also at risk from the increasing volatility of river systems, forcing farmers to rely more on groundwater. Land degradation and desertification are taking place with increasing scale. The climatic climate is strongly divided by seasons; total rainfall supplying to the Central Highlands is over 100 billion m³ water/year, but 85-95% falls in the rainy season, creating a crisis of excess and water shortage in agricultural cultivation.

Thirdly, the policies related to hi-tech agricultural development are still inadequate. Policies related to the development of high-tech agriculture in our country in general and the Central Highlands region, in particular, have been inadequate over time. Currently, there are no specific and synchronous policies to support the development of High-tech agriculture (Hung 2017). For example, the credit policy to support the development of high-tech agriculture is complicated and difficult for businesses to access. The development of high-tech agriculture in the Central Highlands is still entangled in land-related policies, and there is no real interest of local authorities. One of the criteria for people and businesses to have access to preferential loans is that localities need to establish programs and projects with high-tech agricultural regions and areas. However, up to now, no province in the Central Highlands has done this (Anh 2019). Remarkably, there is currently no legal corridor to manage, to ensure benefits for businesses, producers, consumers, and protect the brand reputation of high-tech agricultural products. Policies such as agricultural, human resource training, agricultural insurance, product consumption, market management, research, and technology transfer into agriculture, etc. Still have many drawbacks and barriers which slow the development of high-tech agriculture in the Central Highlands.

3.2 SWOT matrix of the high-tech agriculture in the Central Highlands in the context of integration and the technology revolution 4.0

EXTERNAL FACTORS	OPPORTUNITIES (O)	THREATS (T)
INTERNAL FACTORS	<p>O₁ – the 4.0 Industrial Revolution helps accelerate the application of high technology science in agriculture</p> <p>O₂ – the consumer market is being expanded</p> <p>O₃ – the foreign direct investment (FDI) in High-tech agriculture is increasing</p> <p>O₄ – consumers are tending to use more and more environmentally friendly, safe and beneficial products for human health</p>	<p>T₁ – the pressure of competition for output products is increasing</p> <p>T₂ – climate change and natural disasters are getting worse</p> <p>T₃ – the policies related to hi-tech agricultural development are still inadequate</p>
<p>STRENGTHS (S)</p> <p>S₁ – abundant land resources</p> <p>S₂ – the diverse climate is suitable for many crops</p> <p>S₃ – the Central Highlands has formed large-scale specialized farming areas</p>	<p>SO strategic solution:</p> <p>(1) S_{1,3} + O₃: Attracting investment in hi-tech agriculture</p>	<p>ST strategic solution:</p> <p>(4) S₃ + T_{1,3}: Promote the link between production - processing - consumption entities</p>
<p>WEAKNESSES (W)</p> <p>W₁ – lack of investment capital for hi-tech agriculture</p> <p>W₂ – the scale of production is small and difficult to accumulate land</p> <p>W₃ – the quality of labor resources is low</p> <p>W₄ – Infrastructure for agriculture is weak</p> <p>W₅ – there is no stable consumption market</p> <p>W₆ – research and technology transfer in agriculture have not been developed</p> <p>W₇ – lack of linkages between production and consumption entities</p>	<p>WO strategic solution:</p> <p>(2) W_{5,7} + O_{2,4}: Develop consumption market</p> <p>(3) W₃ + O_{1,3}: Training and developing human resources</p>	<p>WT strategic solution:</p> <p>(5) W_{1,2,4,6} + T₂: Developing science and technology</p>

The SWOT analysis results of high-tech agriculture in the Central Highlands show that specific strategic solutions are needed in the coming time as follows:

SO strategic solution: Attracting investment in hi-tech agriculture. Provinces in the Central Highlands region can diversify capital sources by encouraging the attraction of organizations, individuals, and types of enterprises, especially foreign enterprises and scientific and technological organizations investing in High-tech agriculture. In order to do this, the local governments in the Central Highlands provinces need to create favorable conditions for hi-tech agricultural production establishments to access preferential capital from

the bank and the VND 10,000 billion support package from government; eliminating policy risks so that enterprises can be assured of long-term investment such as simplifying administrative procedures; the law must be specific, clear and transparent, especially issues related to land allocation and land lease; building appropriate mechanisms, policies and procedures to accumulate and concentrate land for hi-tech agricultural development; invest in completing technical infrastructure in the areas oriented to hi-tech agricultural development planning; upgrading infrastructure including transport infrastructure; agricultural infrastructure system for production, information technology system ...; It is necessary to develop ancillary services for high-tech agricultural development such as technical advisory services, investment advisory, legal, financial, insurance, intellectual property insurance; consulting services on machines, equipment ... (Chung 2016).

WO strategic solution: Develop consumption market. To develop markets for consuming high-tech agricultural products, the Central Highlands provinces need to coordinate with the Ministry of Industry and Trade, the Ministry of Agriculture and Rural Development, the Ministry of Finance and enterprises to take the following measures: building brand for agricultural products; investing in investigations, research, and market demand forecast of high-tech agricultural products; There must be a strong promotion, propaganda, and introduction of Central Highlands agricultural products on the mass media, at domestic and foreign fairs and exhibitions; It is necessary to design beautiful packaging designs and at the same time provide full information about the product and the origin to create trust and love for consumers.

WO strategic solution: Training and developing human resources. In order to improve the quality of human resources for hi-tech agricultural development, the involvement of ministries and industries, especially the Ministry of Education and Training is required. Accordingly, it is necessary to focus on renovating the content and training program of experts, scientific and technological officials specialized in high-tech agriculture; put theory into practice. Joint training with universities and research institutes in countries and territories with hi-tech agriculture such as Taiwan, Korea, Japan, Israel, etc. (Mien 2018). The Central Highlands provinces need to invest in building vocational training institutions in order to improve professional skills, including technical and managerial skills. Coordinating with businesses in the direction of training and practicing and receiving workers after training. In addition, the Central Highlands provinces need to have policies to encourage and make good use of graduates from universities, colleges, and intermediate schools in the service of provinces in the region.

ST strategic solution: Promote the link between production - processing - consumption entities. Linkages among entities in hi-tech agricultural production include government, scientists, farmers, entrepreneurs, distributors, and banks. If the Central Highlands want to succeed in developing high-tech agriculture, it is necessary to have a close link between these six entities in production, processing, and consumption. In order to create links, it is necessary to identify the roles and responsibilities of each entity in the link chain. Accordingly, the State should have orientation and overall planning for high-tech agriculture; assisting enterprises in improving the capacity of market analysis and forecasting for hi-tech agricultural products; investing in infrastructure construction; creating a suitable legal corridor, ensuring close and effective alignment. Scientists help farmers gain access to new and high-quality plant and animal breeds; applying scientific and technological advances to production to improve quality and lower production costs; transfer of technology for processing and preserving post-harvest agricultural products; training farmers to acquire and apply advanced techniques. Farmers also need to have knowledge of hi-tech agricultural production and requirements for hi-tech agricultural products in the integration process; avoid backward, fragmented and small-scale production thinking and need to link together in the production process, boldly apply science

and technology to production; Farmers must also learn how to do business under contracts, respect the contract in terms of quantity, quality and delivery time. The distributor is responsible for researching market demand, product prices, advising the government and farmers in deciding which products to produce, and finding consumption markets for such agricultural products, the commercialization of hi-tech agricultural products is exported to foreign countries. The bank plays a role in supporting capital for production when the bank participates in the value chain, and it will help minimize market risks, risks for borrowers, etc. Enterprises play an important role in linking the remaining entities to form production areas; enterprises need to focus on developing markets, actively looking for markets, determining consumption capacity; signing contract with farmers to buy products; step by step towards building a brand of hi-tech agricultural products for the Central Highlands region. When embarking with associates, all entities need to act in accordance with the law, create and keep credibility, and cooperate in a beneficial manner.

WT strategic solution: Developing science and technology. In order for the products of domestic agricultural science and technology organizations to meet the needs of high-tech agricultural production establishments, creating an incentive for farmers to apply high technologies to agricultural production, it is necessary to have the coordination of many ministries and agencies inside and outside the Central Highlands region. Firstly, domestic agricultural science and technology organizations must improve their capacity, coordinate with enterprises to research and transfer agricultural technical advances into production. Secondly, the Ministry of Agriculture and Rural Development directly places orders for research institutes. Thirdly, the related ministries, industries, and scientific and technological organizations need to simplify administrative procedures to create conditions for enterprises to shorten the time to access agricultural technology products. Fourth, the Central Highlands provinces need to promulgate mechanisms and policies to encourage enterprises and farmers to produce large-scale goods to facilitate the introduction of high technology into production (Mien 2018).

4. Conclusions

The Central Highlands has the potential for agricultural development, but over the past years, the production scale is fragmented, small, low productivity, lack of linkage between production-consumption, and marketing. The consumption market is uncertain, making this area still underdeveloped. Results of this study suggests several implications. First, this study supports the potential of hi-tech agriculture's involvement in economic development in the Central Highlands. Second, the effective and efficient cooperation among stakeholders including government entities, hi-tech enterprises and farmers plays a crucial role in the transformation of agrarian economic structure.

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THE RELATIONSHIP BETWEEN TRADE OPENNESS AND ECONOMIC GROWTH: A STUDY ON ASEAN-5

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Abstract: *This paper focuses on examining the nonlinear impact of trade openness on economic growth in ASEAN countries. If the nonlinear impact exists, the author will estimate the threshold value of trade openness when it affects economic growth. Thanks to this, the author expects to discover many interesting and different things compared to previous studies. Regarding the research data, the author collected the data of Asean-5 countries (Indonesia, Malaysia, Thailand, Singapore, and the Philippines) and Vietnam in the period 2004-2019. These countries have witnessed the impressive rate of trade openness and economic growth over the past time. In order to achieve the set research objectives, the author will estimate the research model through the panel threshold regression approach. The research results show that there is a nonlinear impact of trade openness (OP) on economic growth (EG), but the impact level before and after the two threshold values of trade openness ($\gamma_1 = 129,873\%$, $\gamma_2 = 147,842\%$) is different. Specifically, before the threshold value of $\gamma_1 = 129.873\%$, trade openness plays an important role in boosting economic growth. However, this impact level decreases gradually when trade openness exceeds the threshold value of γ_1 . Especially, when exceeding the threshold of $\gamma_2 = 147,842\%$, the impact of trade openness on economic growth is still positive but with a relatively low value. This shows that if trade openness is increased at a high level (beyond the threshold value) without combining with other complementary policies, it will not bring high efficiency for economic growth. It can be said that this is the first empirical evidence to find the existence of the two threshold values of trade openness when it affects economic growth. Therefore, the findings in this paper are of great importance to ASEAN countries as well as researchers.*

Keywords: ASEAN, Economic Growth, Macroeconomic, Panel Threshold, Trade Openness.

JEL classification code: F14, F43, F62.

1. Introduction

Trade openness has always been a concern for many countries, especially developing countries (Zahonogo, 2016). This is because open economies often have faster growth rates than closed economies (Grossman & Helpman, 1991; Edwards, 1993). When trade openness increases, production can be more efficient and domestic technology is also improved; accordingly, productivity will increase. In other words, trade openness can play an important role in stimulating economic growth. For this reason, in order to improve economic growth, trade openness is always of top concern to many countries. However, trade openness is not always

as successful as expected (Singh, 2010). Indeed, if trade openness is not accompanied by macroeconomic stability and favorable investment environment, it is difficult to promote its role of stimulating economic growth (Newfarmer & Sztajerowska, 2012). In empirical studies, the impact of trade openness on economic growth is also a topic of great interest to many researchers; nevertheless, there are still conflicting views (Zahonogo, 2016). Indeed, some previous studies suggest that trade openness has a positive impact on economic growth, for example: Chang et al. (2009), Kim (2011), Jouini (2015). In contrast, Lucas (1988), Young (1991), Redding (1999), Kim and Lin (2009), Herzer (2013) have argued that trade openness could hinder economic growth in the long term if economic management policies are ineffective, which is clearly shown in developing countries. Meanwhile, other studies point out that trade openness may not be related to economic growth (Ulaşan, 2015), or trade openness may not be an important factor that stimulates economic growth (Trejos & Barboza, 2015). Recently, Zahonogo (2016) have stated that the impact of trade openness on economic growth is expressed through the inverted U curve-type, meaning that there is a threshold value of trade openness and the impact of trade openness on economic growth in the positions before and after the threshold is different. Although the nonlinear impact of trade openness on economic growth has only been mentioned in a small number of recent studies, this is likely to occur in reality. Overall, there are many opposing views about the impact of trade openness on economic growth and this issue needs to be examined in empirical studies. In particular, is there a nonlinear impact of trade openness on economic growth? If there is a nonlinear impact of trade openness on economic growth, what is the threshold value of trade openness? These are the questions that previous studies have not answered properly. In other words, this is a very interesting research problem and there are still gaps to explore.

In this paper, the author will focus on examining the nonlinear impact of trade openness on economic growth, thereby estimating the threshold value of trade openness. Furthermore, the research data were collected in ASEAN countries, which have witnessed a relatively high rate of trade openness and economic growth in recent years, but there is a lack of empirical studies on this issue. Accordingly, the author expects to provide the first empirical evidence for the nonlinear impact of trade openness on economic growth in ASEAN countries. The research results will be an important foundation to help ASEAN countries to make appropriate trade openness policies to stimulate economic growth in a more stable and more sustainable manner.

The remaining content of the paper is presented as follows: part 2 demonstrates the literature review of previous studies, part 3 indicates the methodology, part 4 displays the results and discussion, and the final section proclaims the conclusions of the paper.

2. Literature Review

Trade openness is an indicator that reflects the value of exports and imports to the economy's GDP (Zahonogo, 2016). In other words, this indicator reflects the openness level of the economy. Trade openness can stimulate each country's economic growth by increasing the access to advanced technology (Barro & Sala-i-Martin, 1997; Baldwin et al., 2005; Almeida & Fernandes, 2008). At the same time, trade openness also helps countries to expand markets, to make good use of great opportunities brought about by international integration, and especially to improve productivity (Alesina et al., 2000; Bond et al., 2005). To put it another way, trade openness can have a positive impact on economic growth (Chang et al., 2009; Kim, 2011; Jouini, 2015). As a result, countries tend to increase their trade openness in expectation of stimulating economic growth, which is clearly shown in developing countries (Zahonogo, 2016). Although the role of stimulating economic growth of trade openness cannot be denied, some views reveal that trade openness

can hinder economic growth (for example, Lucas, 1988; Young, 1991; Redding, 1999; Kim & Lin, 2009; Herzer, 2013). One of the reasonable explanations for this impact is that the management policies in these countries are not effective. Indeed, Newfarmer and Sztajerowska (2012) have argued that trade openness must be accompanied by macroeconomic stability and a favorable investment environment in order to promote the role of stimulating economic growth. In another study, Kim and Lin (2009) suggested that trade openness has a positive impact on economic growth in high-income economies. Meanwhile, in low-income economies, trade openness has a negative impact on economic growth. Therefore, the role of stimulating economic growth of trade openness seems to be more clearly shown in developed economies. In the same view, Herzer (2013) found a positive impact of trade openness on economic growth in developed countries, but this impact was negative in developing countries. From a different perspective, Zahonogo (2016) assumed that the impact of trade openness on economic growth in sub-Saharan Africa (SSA) countries is shown through the inverted U curve-type. Specifically, before the threshold value of trade openness of 134.21%, the impact of trade openness on economic growth is positive, but this impact is negative after the threshold value. In addition, there is a view that trade openness is not related to economic growth (for example, Ulaşan, 2015), or that trade openness is not an important factor that stimulates economic growth (for instance, Trejos & Barboza, 2015). Overall, although the impact of trade openness on economic growth has been of great interest in empirical studies, this research topic remains controversial. Moreover, the nonlinear impact of trade openness on economic growth may exist, but there are a very small number of empirical studies on this issue. Meanwhile, if the nonlinear impact of trade openness on economic growth is determined, we can estimate the threshold value of trade openness where the impact of trade openness on economic growth may change. Based on this threshold value, countries will have a reliable foundation to propose appropriate trade openness policies in order to stimulate economic growth in a more stable and more sustainable manner. It can be said that examining the nonlinear impact of trade openness on economic growth is a very necessary research topic but it is rarely mentioned in empirical studies. This is a big gap in previous studies.

3. Methodology

This paper analyzes the data of Asean-5 countries (Indonesia, Malaysia, Thailand, Singapore, and the Philippines) and Vietnam. These are the countries which have many similar characteristics and an impressive rate of trade openness and economic growth in recent years. The research data were collected by the author from the source of the World Bank in the period 2004-2019.

In this paper, the author used the panel threshold regression approach proposed by Hansen (1999). Later, Wang (2015) developed this approach into a fixed effect panel threshold model. This is an estimation method that allows the author to determine the threshold value of trade openness and reflect the nonlinear impact of trade openness on economic growth.

Furthermore, the author also included the control variables of domestic investment (INV), inflation (INF), and financial crisis (CRISIS) in the paper. These control variables were determined by the author based on the research of Zahonogo (2016). However, regarding the measurement of the financial crisis (CRISIS) variable, the author identified the period of the global financial crisis as the period 2008-2009, instead of all the time periods after 2008 as in Zahonogo's (2016) study because the reality shows that the financial crisis originated in the United States and occurred the most dramatically in the period 2008-2009 (Kapan & Minoiu, 2018).

Based on the results of previous studies, the author built a research model with the following general equation:

$$EG_{it} = \alpha_0 + \beta OP_{it} + \lambda CV_{it} + \varepsilon_{it} \quad (1)$$

Where:

Dependent variable: Economic growth (EG).

Independent variable: Trade openness (OP).

Control variable: CV is a set of control variables, including: domestic investment (INV), inflation (INF), and financial crisis (CRISIS).

ε : Error in the model.

Table 1. Variables used in the research model

Variable		Definition	Source
Dependent variable			
Economic growth	EG	GDP growth (annual %)	World Bank
Independent variable			
Trade openness	OP	The sum of exports and imports as a share of GDP	World Bank
Control variable			
Domestic investment	INV	Gross capital formation (% of GDP)	World Bank
Inflation	INF	Consumer prices (annual %)	World Bank
Financial crisis	CRISIS	CRISIS takes the value of 1 in the period 2008-2009, and takes the value of 0 in the remaining periods.	The author's calculation

4. Results and Discussion

Table 2. Results of correlation analysis

	EG	OP	INV	INF	CRISIS
EG	1.000				
OP	0.060	1.000			
INV	0.132	-0.041	1.000		
INF	0.177	-0.245	0.406	1.000	
CRISIS	-0.423	0.013	-0.011	0.230	1.000

Table 2 shows that the variables of OP, INV and INF are positively correlated with EG. Meanwhile, the control variable of CRISIS is negatively correlated with EG.

Table 3. Results of the threshold effect test

Threshold	Prob
Single	0.000***
Double	0.000***

Note: *** indicates significance at the 1% level.

Table 3 shows that the research model has the double threshold of OP at the 1% significance level. In particular, the double threshold of OP achieves the values of $\gamma_1 = 129,873\%$ and $\gamma_2 = 147,842\%$, respectively.

Therefore, the equation (1) is developed into the following equations:

$$EG_{it} = \begin{cases} \alpha_0 + \beta_1 OP_{it} + \lambda_1 INV_{it} + \lambda_2 INF_{it} + \lambda_3 CRISIS_{it} + \varepsilon_{it} & \text{when } OP_{it} < \gamma_1 \\ \alpha_0 + \beta_2 OP_{it} + \lambda_1 INV_{it} + \lambda_2 INF_{it} + \lambda_3 CRISIS_{it} + \varepsilon_{it} & \text{when } \gamma_1 \leq OP_{it} < \gamma_2 \\ \alpha_0 + \beta_3 OP_{it} + \lambda_1 INV_{it} + \lambda_2 INF_{it} + \lambda_3 CRISIS_{it} + \varepsilon_{it} & \text{when } OP_{it} \geq \gamma_2 \end{cases} \quad (2)$$

In order to determine the impact of trade openness on economic growth before and after the threshold, the author estimated the research model by the panel threshold regression approach. This estimation result is presented in Table 4 below:

Table 4. Estimation results of the research model by the panel threshold regression approach

Dependent variable: Economic Growth (EG)		
EG	Coef.	P> z
OP ($OP < 129.873\%$)	0.056***	0.000
OP ($129.873\% \leq OP < 147.842\%$)	0.047***	0.000
OP ($OP \geq 147.842\%$)	0.038***	0.000
INV	0.105*	0.085
INF	0.081	0.206
CRISIS	-3.110***	0.000
Constant	-4.175*	0.099
R-squared	37.65%	
Significance level	F(6, 84) = 8.45 Prob>F = 0.000***	

Note: * and *** indicate significance at the 10% and 1% levels, respectively.

The estimation results of the research model by the panel threshold regression approach proved suitable and significant at the 1% level (Table 4). Accordingly, before and after the thresholds, OP has a positive impact on EG at the 1% significance level, but the impact level before and after these thresholds is different. Specifically, before the threshold value of $\gamma_1 = 129.873\%$ ($OP < 129.873\%$), OP has a positive impact ($\beta_1 = 0.056$) on EG. This result is quite consistent with the previous view of Zahonogo (2016). However, the research model results show that from the threshold $\gamma_1 = 129,873\%$ to the threshold $\gamma_2 = 147,842\%$ ($129,873\% \leq OP < 147,842\%$), OP has a positive impact on EG but at a lower level ($\beta_2 = 0.047$). In addition, the author found the positive impact of OP on EG after the threshold $\gamma_2 = 147.842\%$ but at a relatively low level ($\beta_3 = 0.038$). This shows that trade openness plays an important role in stimulating economic growth, but when trade openness exceeds the threshold value ($\gamma_1 = 129.873\%$), the role of stimulating economic growth is still shown but at a lower level. Especially, when trade openness exceeds the threshold value ($\gamma_2 = 147.842\%$), the impact of trade openness on economic growth is still positive but takes a relatively low value. It can be said that this is the first empirical evidence to find two threshold values of trade openness when it affects economic growth. This is also quite consistent with the reality in ASEAN countries. Because most of the countries in the sample are emerging economies and trade openness is still in the early stage of development, not showing many shortcomings; thus, trade openness always plays the role of stimulating economic growth (even after the threshold values). Although the research model results do not reveal

the negative impact of trade openness on economic growth, the research results clearly show that when trade openness exceeds the threshold values, the positive impact of trade openness on economic growth decreased dramatically. It can be said that this is a big difference and also an interesting finding of this paper compared to previous studies.

In addition, the results of the research model show that EG was positively impacted (0.105) by INV at the 10% significance level and was negatively impacted (-3.110) by CRISIS at the 1% significance level. This indicates that domestic investment and the global financial crisis also have a significant impact on economic growth in ASEAN countries.

5. Conclusions

In this paper, the author achieved great success when finding the nonlinear impact of trade openness on economic growth in ASEAN countries. Moreover, the author estimated two threshold values of trade openness ($\gamma_1 = 129,873\%$, $\gamma_2 = 147,842\%$) when it affects economic growth. This shows that trade openness has a significantly positive impact on economic growth, but the impact level before and after the two threshold values of trade openness is different. In other words, if trade openness is increased at a high level (beyond the threshold value) without combining with other complementary policies, it will not bring high efficiency for economic growth. In addition, the author found a significant impact of the control variables of domestic investment and financial crisis on economic growth. These findings are an important foundation for ASEAN countries to come up with appropriate trade openness policies to stimulate economic growth. Specifically, trade openness should be promoted in combination with effective management; simultaneously, it is essential to increase domestic investment, stabilize the macro-economy and limit the negative impacts of the global economy on domestic economic growth. Accordingly, ASEAN countries can stimulate economic growth in a stable and sustainable manner.

Although the set objectives have been achieved, this paper has considerable drawbacks because it has not examined a number of other control variables that may affect economic growth, such as: exchange rates, foreign direct investment, financial development, etc. On the other hand, due to the limitation of data collection, this paper has not been able to collect the data of all ASEAN countries. These limitations may open up interesting research directions for further studies.

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THE ASYMMETRIC EFFECT OF GASOLINE PRICE ON CONSUMER PRICES: AN EVIDENCE FROM THE VIETNAMESE MARKET

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Abstract: Gasoline price is closely related to macroeconomic variables. This relationship has been interested in over the last decades by policymakers. So far, there have been many studies on the linear relationship between gasoline price and consumer prices, but little is known regarding the nonlinear interactions between them. The objective of this paper is to analyze the asymmetric effect of petrol prices on consumer prices in the Vietnamese market. The theoretical basis is developed from the theory of asymmetric price transmission (APT). The quarterly data is collected between Q1/2008 and Q4/2019, and the nonlinear autoregressive distributed lag (NL-ARDL) model is used as an analytical tool. The research results indicate that the gasoline price in the Vietnam market disproportionately affects consumer prices in both the short-run and long-term.

Keywords: Gasoline price, asymmetric price transmission, nonlinear autoregressive distributed lag model.

JEL Classification codes: D40, E10.

1. Introduction

Broadly speaking, consumer prices are measured by the Consumer Prices Index (CPI), which is calculated by determining the list of popular consumer goods and services. This is a relative indicator reflecting the trend and level of fluctuations in retail prices over time of consumer goods and daily services in the life of residents and households. On the other hand, the CPI plays a pivotal role to help organizations and individuals in making important decisions such as the interest rate policy of the state bank, bases for adjusting the salary in enterprises, the individual investors make a decision to allocate investment capital. If there is a change in the CPI it means that the change in prices of goods and services on the market. Consequently, it will surely affect other economic indicators of the economy such as securities, inflation, unemployment. Gasoline is, also, one of the inputs of production and consumption activities in society. Therefore, the adjustment of gasoline prices will certainly directly affect the production costs of most industries and economic activities. When the price of gasoline goes up, it will lead to an increase in the cost of goods and services constituting “output” products. As a result, It is the root of inflation that has a negative impact on other macro variables. Therefore, it can be affirmed that petroleum is the main input that decides the entire price system and consumer price index of the economy.

In fact, a short time ago, gasoline prices have fluctuated strongly and the tendency of price fluctuations such as “increase a lot, reduce a little; up fast, slow down” (asymmetry). This not only directly affects the psychology and interests of consumers but also causes hindering the

competitiveness of the economy in the global context. Theoretically, this topic has been analyzed by a number of domestic and foreign authors in many different aspects. However, previous studies often assess the impact of petrol prices on macroeconomic variables of the economy, very few studies have analyzed the effects of gasoline price fluctuations on consumer prices adequately. In terms of methodology, most previous studies have estimated linear models (the hypothesis that the effect of gasoline prices is symmetrical). However, short-term and long-term fluctuations in petrol prices can be asymmetric and nonlinear (Chou & Lin, 2013) employing the producer price general index and various basic sub-indices for evaluation. The empirical results show that oil prices have long-term and short-term pass-through effects on Taiwan’s producer price indices. Moreover, producer prices have significant non-linear error-correction relationships with the oil price, output and wages, suggesting asymmetric and time-variant properties of error correction. When the deviation of price in the equilibrium is greater, the error-correction adjustment will be faster. Our findings could therefore enable the monetary authorities and manufacturers to formulate a more effective policy from the oil price shocks. © 2013 Copyright The Chinese Economic Association-UK.”,”author”:[{“dropping-particle”:"",“family”:"Chou",“given”:"Kuo-Wei",“non-dropping-particle”:"",“parse-names”:false,“suffix”:""},{“dropping-particle”:"",“family”:"Lin",“given”:"Po-Chun",“non-dropping-particle”:"",“parse-names”:false,“suffix”:""}],“container-title”:"Journal of Chinese Economic and Business Studies”,“id”:"ITEM-1”,“issue”:"1”,“issued”:{“date-parts”:[["2013",“2"]]},“page”:"59-72”,“title”:"Oil price shocks and producer prices in Taiwan: an application of non-linear error-correction models”,“type”:"article-journal”,“volume”:"11"},“uris”:[“http://www.mendeley.com/documents/?uuid=cf93d7a0-638d-4884-84c4-99fc52fb9d57”]],“mendeley”:{“formattedCitation”:(Chou & Lin, 2013; Du et al., 2010; Mork, 1989). Starting from the research gap as mentioned above, the purpose of the article is to study the asymmetric effect of gasoline price on consumer prices in the Vietnamese market: The nonlinear autoregressive distributed lag model approach. Thereby, Based on research results suggest appropriate policies to stabilize the valuing market, contributing to macroeconomic stability to promote efficient and sustainable growth.

2. Literature review

2.1 Types of APT

Asymmetric price transmission (APT) is the phenomenon of market reactions at different levels to the price increase (decrease) of goods (Meyer & von Cramon-Taubadel, 2004). APT is classified by magnitude, speed, or a combination of both.

Fig. 1: Magnitude of APT

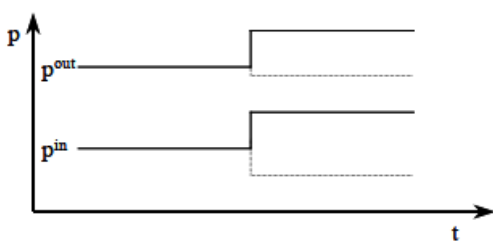
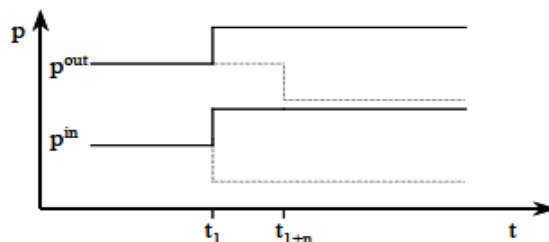


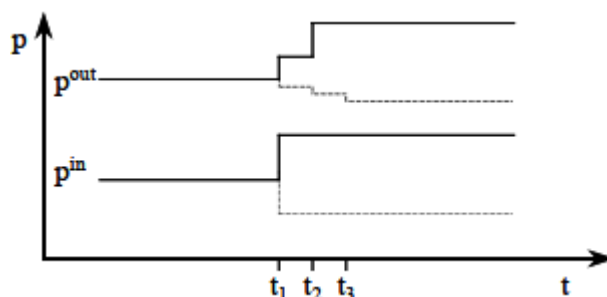
Fig. 2: Speed of APT



In both cases, the change in the output price (p^{out}) of the goods depends on the direction (increase/decrease) of the input price (p^{in}). Fig. 1 shows the amplitude of APT appears when a change of p^{out} and

p^{in} occurs at the same time. The speed of APT comes out when the change of p^{out} and p^{in} occurs at different times (Fig. 2). In some cases, APT also occurs when there are two simultaneous cases.

Fig. 3: Magnitude and speed of APT



The illustration in Figure 3 shows that if the input price (p^{in}) increases, the output price (p^{out}) fully receives after two-point of time (amplitude). If the input price (p^{in}) falls, the output price (p^{out}) is fully received after three-point of time (amplitude and speed). According to Peltzman (2000) the immediate response to a positive cost shock is at least twice the response to a negative shock, and that difference is sustained for at least five to eight months. Unlike past studies, which documented similar asymmetries in selected markets (gasoline, agricultural products, etc.), APT is divided into two types such as negative APT and positive APT.

Fig. 4: Positive APT

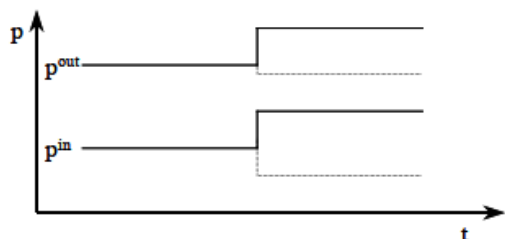
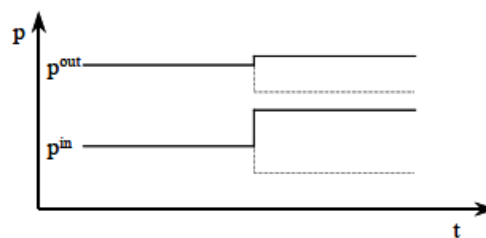


Fig. 5: Negative APT



A positive APT is a phenomenon in which p^{out} responds quickly and fully in the case of an increase of input price rather than when the decrease of input price. Conversely, a negative APT is a phenomenon in which p^{out} responds quickly and fully rather than in the case of decline of input price rather than when the rise of input price. In addition, APT can also be classified vertically based on supply chains or spatially between markets with geographically distant locations.

2.2 Cause of APT

Up to now, most studies suggest that there are three main causes of APT. First, market power that is the influence of one or a group of firms on the determination of market prices, for a specific product or industry as a whole is the main reason (Amonde et al., 2009). On the structure of non-competitive market, the market power is revealed clearly. For this reason, it is often expected to lead to a positive APT case (Kinnucan & Forker, 1987; Miller & Hayenga, 2001) the econometric methods commonly used in such studies cannot empirically distinguish pricing behavior under the competing theories. We argue that the theories may be classified by firm responses to high- and low-frequency price cycles and use Engle's band spectrum regression to test the symmetry of high- and low-frequency cycles in week-

ly pork prices. The findings indicate that changes in wholesale prices are asymmetrically transmitted to retail prices in relatively low-frequency cycles, which does not support search costs and other high-frequency explanations. Conversely, wholesale pork prices asymmetrically adjust to changes in farm prices at all frequencies.”, ”author”:[{“dropping-particle”:””, ”family”:”Miller”, ”given”:”Douglas J.”, ”non-dropping-particle”:””, ”parse-names”:false, ”suffix”:””}, {“dropping-particle”:””, ”family”:”Hayenga”, ”given”:”Marvin L.”, ”non-dropping-particle”:””, ”parse-names”:false, ”suffix”:””}], ”container-title”:”American Journal of Agricultural Economics”, ”id”:”ITEM-1”, ”issued”:{“date-parts”:[["2001"]]}, ”title”:”Price cycles and asymmetric price transmission in the U.S. pork market”, ”type”:”article-journal”}, ”uris”:[“http://www.mendeley.com/documents/?uuiid=1a01c98d-b38e-4dd8-90d4-afe571937c40”]], ”mendeley”:{“formattedCitation”:(Miller & Hayenga, 2001. However, Ward (1982) argued that market power may also be a cause of negative APT because monopolies may be reluctant to raise market prices due to fear of risk of losing market share. Another similar argument of Frey & Manera (2007) we review the existing empirical literature on price asymmetries in commodities, providing a way to classify and compare different studies that are highly heterogeneous in terms of econometric models, type of asymmetries and empirical findings. Relative to the previous literature, this paper is novel in several respects. First, it presents a detailed and updated survey of the existing empirical contributions on price asymmetries in the transmission mechanism linking input prices to output prices. Second, this paper presents an extension of the traditional distinction between long-run and short-run asymmetries to new categories of asymmetries, such as: contemporaneous impact, distributed lag effect, cumulated impact, reaction time, equilibrium and momentum equilibrium adjustment path, regime effect, regime equilibrium adjustment path. Each empirical study is then critically discussed in the light of this new classification of asymmetries. Third, this paper evaluates the relative merits of the most popular econometric models for price asymmetries, namely autoregressive distributed lags, partial adjustments, error correction models, regime switching and vector autoregressive models. Finally, we use the meta-regression analysis to investigate whether the results of asymmetry tests are not model-invariant and find which additional factors systematically influence the rejection of the null hypothesis of symmetric price adjustment. The main results of our survey can be summarized as follows: (i is the case of implicit collusion in monopoly markets. While the whole price rises, companies inform competitors by quickly raising prices to show they are complying with the tacit agreement. However, companies tend to adjust slowly because of concerns about reducing profits when market prices fall.

Secondly, the other cause of APT is depended on the adjustment cost that is the cost that a company incurs when the quantity and/or price of inputs and/or outputs change. If costs are related to price changes, then such adjustment costs are called menu costs (Menu cost) (Meyer & von Cramon-Taubadel, 2004). Menu costs include nominal price changes, catalog printing, inflation costs, and dissemination of price changes information. So that costs may be disproportionate to the increase or decrease of prices (Ball & Mankiw, 1994). Third, another factor causing price asymmetry is the role of government intervention. This is evident in the administrative intervention in the form of price support in the agricultural sector, which is mainly referred to as floor prices (Kinnucan & Forker, 1987).

2.3 Determining retail gasoline price in Vietnam

According to Decree 83/ND-CP/2014 about petroleum trading, the government decides the base price to develop retail prices in the petroleum market. The base price formula of actual petroleum products is based on the following principles: (1) The minimum required gasoline reserve is 30 days of supply, based on the average daily domestic consumption output of the previous adjacent year. (2) The retail price of gasoline does not exceed the base price determined every 15 days. Base price is calculated by the following formula:

Base price = {CIF price + Import tax + Special consumption tax} x Currency exchange + Value-added tax + Standard business expenses + deduction for price valorization fund + Norm profit + Environment protection tax + Other taxes, fees and other deductions as prescribed by current law.

Table 1: Composition of fundamental price gasoline

Base price = CIF import price	gasoline	Diesel oil	Oil	Mazut oil
+ Import tax	10%	0.85%	0.13%	3.04%
+ Special consumption tax	10%	8%		
+ Value-added tax	10%	10%	10%	10%
+ Standard business expenses	1.050đ/l	950đ/l	950đ/l	600đ/l
	1.250đ/l (E_5, E_{10})			
+ Price valorization fund	300đ/l	300đ/l	300đ/l	300đ/l
+ Norm profit	300đ/l	300đ/l	300đ/l	300đ/l
+ Environment protection tax	4.000đ/l	2.000đ/l	1.000đ/l	2.000đ/l
+ Other taxes, fees	If yes	If yes	If yes	If yes

Source: Ministry of Industry and Trade

Regarding the formula and calculation of base price, there are 9 factors that are very clear and transparent. However, each factor in the formula is determined how properly, objectively, and transparently under the market mechanism, asymptotic to world prices is a matter of much debate.

3. Methods

3.1. Econometrics model

The research model developed from the Phillips curve model has the following form:

$$pr_t = \beta(L)pr_{t-1} + \gamma Un_t + \zeta(L)op_t + \varepsilon_t \quad (1)$$

where: pr_t : consumer price index, Un_t : the difference between unemployment rate and natural unemployment rate, op_t : Gasoline price, L : lag operator, ε_t : error term. According to Okun's Law (1962), Un_t can be replaced by the difference between the output level (y_t) and the potential output (\tilde{y}_t), denoted as $g_t = y_t - \tilde{y}_t$. Then equation (1) is rewritten

$$pr_t = \beta(L)pr_{t-1} + \gamma g_t + \zeta(L)op_t + \varepsilon_t \quad (2)$$

So equation (1) shows the long-run equilibrium between consumer prices pr_t , g_t and op_t . According to the cointegration theory (Engle, 1982; Engle et al., 1987) researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org. This

content downloaded from 128.237.210.31 on Sun, The relationship between co-integration and error correction models, first suggested in Granger (1981, if first-order integrated series and cointegration exist, dynamic relationships can be analyzed based on the error correction model (ECM). However, Pesaran, M. H., Shin (1999) argue that time series in the economy are often integrated at 0 or 1 order and have cointegration, then the dynamic relationship is analyzed by ARDL model (Autoregressive Distributed Lag. Especially this model is suitable for small samples. Therefore, if p_t , g_t and op_t have an integrated degree of $I(0)$ or $I(1)$ and cointegration present, the Equation (1) has the form:

$$\Delta p_t = \alpha_1 + \alpha_2 p_{t-1} + \alpha_3 op_{t-1} + \alpha_4 g_{t-1} + \sum_{i=1}^m \phi_i \Delta p_{t-i} + \sum_{i=0}^n \tau_i \Delta op_{t-i} + \sum_{i=0}^k \gamma_i \Delta g_{t-i} + \varepsilon_t \tag{3}$$

From Equation (3) can explain the relationship between oil prices and consumer prices in the short and long term. However, the approaches of Equation (1) and (2) are based on the assumption that the effect of the independent variable on the dependent variable is symmetric.

In reality, it is not suitable because of the fluctuations in gasoline prices are asymmetric to consumer prices. Therefore, Shin et al. (2013) developed a nonlinear ARDL model based on equation (3) to analyze this situation as follows:

$$\Delta p_t = \alpha_1 + \alpha_2 p_{t-1} + \theta^+ op_{t-1}^+ + \theta^- op_{t-1}^- + \alpha_3 g_{t-1} + \sum_{i=1}^m \phi_i \Delta p_{t-i} + \sum_{i=0}^n (\tau_i^+ \Delta op_{t-i}^+ + \tau_i^- \Delta op_{t-i}^-) + \sum_{i=0}^k \gamma_i \Delta g_{t-i} + \varepsilon_t \tag{4}$$

$$op_t^+ = \sum_{j=1}^t \Delta op_j^+ = \sum_{j=1}^t \max(\Delta op_j, 0) ; op_t^- = \sum_{j=1}^t \Delta op_j^- = \sum_{j=1}^t \min(\Delta op_j, 0)$$

Where, op_t^+ and op_t^- are partial sum processes of positive and negative changes in p , m , n , k is the lags of the dependent and independent variables respectively. Equation (4) infers to $L^+ = -\theta^+ \alpha_2$ that is the transmission level when gasoline prices rise to consumer prices, $L^- = -\theta^- \alpha_2$ that is the transmission level when gasoline prices reduce to consumer prices. If $L^+ = L^-$ it is symmetric in long-term. Contrarily, it is asymmetric. Similarly, in short term, the symmetric effect is when the following condition is satisfied:

$$\sum_{i=0}^n \tau_i^+ = \sum_{i=0}^n \tau_i^- \quad \text{v\oai } i = 1, 2, 3, \dots, n.$$

If a short-run or a long-run (or both) asymmetry relationship is confirmed in the NARDL model, we can derive and trace the positive and negative cumulative dynamic multiplier effects of a unit change in op_t^+ and op_t^- on p_t , respectively.

$$m_h^+ = \sum_{j=0}^h \frac{\partial p_{t+j}}{\partial op_t^+} ; m_h^- = \sum_{j=0}^h \frac{\partial p_{t+j}}{\partial op_t^-} \quad \text{v\oai } h = 0, 1, 2, 3, \dots$$

It called asymmetric cumulative effect when op_t^+ , op_t^- change 1%. When $h \rightarrow \infty$ then $m_h^+ = L^+ = -\theta^+ \alpha_2$ and $m_h^- = L^- = -\theta^- \alpha_2$.

3.2. Data gathering procedures

To examine the impact of gasoline prices on consumer prices, this study uses time series data (from Q1/2008 to Q4/2019). Macroeconomic variables are reported quarterly from the General Statistics Office (GSO) and the Ministry of Industry and Trade (MIT). In particular, the variables are defined as follows: the price index variable is the CPI of the last month of the quarter (%), the price of gasoline is the average selling price in each quarter (1000VND/liter), the potential GDP growth (%) is estimated from Hodrick-Prescott-Filter technique.

Table 2: Research variables

N_0	Symbol	Variable	Unit	Source
1	pr	CPI	%	GSO
2	op	Gasoline prices	1000VND/liter	MIT
3	op ⁺	Increase in gasoline prices	1000VND/liter	Own calculation
4	op ⁻	Decrease in gasoline prices	1000VND/liter	Own calculation
5	g	$g_t = y_t - \tilde{y}_t$ output gap	%	Own calculation

4. Results and discussion

4.1 Descriptive statistics

The results in Tab. 3 show that sample has 48 observations (from Q1/2008 to Q4/2019). During this period, the lowest consumer price index was 0.99%, the highest was 27.91% and the average was 7.53 (%). The average gasoline price is 19.16 (1,000VND/liter), the average increase is 0.313 (1,000VND/liter), the average decrease is 0.368 (1,000VND/liter). The output gap (g) has the lowest value of -3.37 (%), the highest is 1.44 (%) and the average is -0.097 (%), indicating that GDP growth has not reached its potential. Except for the petrol price (op) and (g) that have a left distribution (because of the negative skewness), the remaining variables have the right distribution (because of the positive skewness)

Table 3: Data description

Variables	pr	op	op ⁺	op ⁻	g
Observation	48	48	48	48	48
Mean	7.53	19.16	0.313	0.386	-0.097
Standard deviation	7.027	3.671	0.557	0.669	0.791
Coefficient of variation	0.993	0.192	1.780	1.733	-8.168
Min	0.99	11.5	0	0	-3.370
Max	27.91	25.05	2.29	2.55	1.440
Skewness	1.468	-0.217	2.335	2.053	-1.428
Kurtosis	4.168	2.305	7.863	6.244	7.913
Jarque-Bera (JB)	4.6e-05	0.510	1.8e-20	1.3e-12	9.4e-15

Source: Output from Stata.

On the other hand, the output gap variable (g) has the smallest variation (the coefficient of variation is -8.168) and the price increase of gasoline has the largest variation (the coefficient of

variation is 1.780). The result of Jarque-Bera (JB) statistics indicates that gasoline price variable has standard distribution.

4.2. Stationary tests and order of integration

Nelson & Plosser, (1982) argue that most time series are non-stationary at order zero (I (0)). So, it is necessary to test whether time-series station or not. The station of time-series is critical to the efficiency of the estimation method used. If the time series does not station, the assumption of the OLS (Ordinary Least Square) method does not satisfy. Accordingly, t or F tests are not valid (Brooks, 2008). Two common methods employed to examine time-series stationarity is the Augment Dickey-Fuller (ADF) and Phillips-Perron (PP) tests.

Fig. 6: Data series

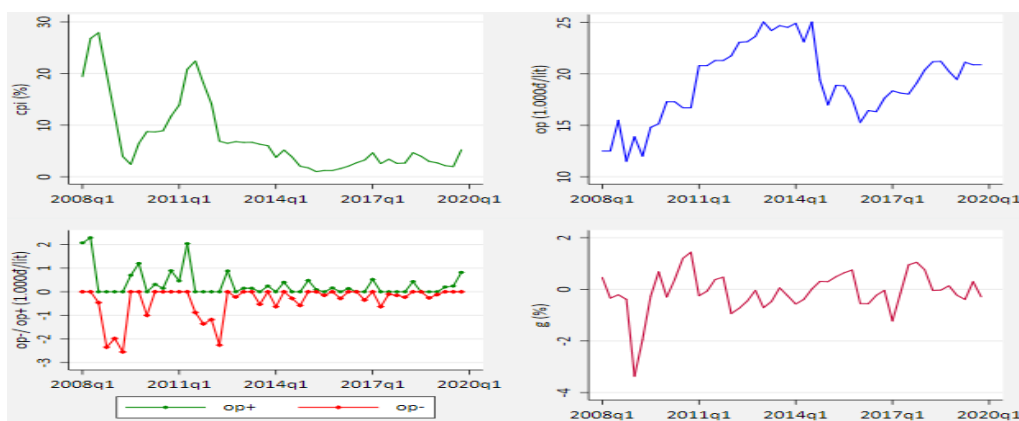


Table 4: Results of stationary tests

Variables	lags	Levels		First-order difference	
		ADF	PP	ADF	PP
pr	2	-4,112***	-2,562	-5,032***	-4,690***
op	1	-1,07	-1,832	-4,940***	-8,729***
op ⁺	0	-5,985***	-5,985***	-10,342***	-10,342***
op ⁻	1	-4,132***	-4,805***	-5,507***	-9,021***
g	2	-3,278*	-4,232***	-5,596***	-7,291***

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: Output from Stata.

Tab. 4 illustrates the results of station tests by two methods of ADF and PP. Indeed, only gasoline price variable is not station at level (according to ADF). In contrast, according to the PP method, the consumer price indexes and gasoline prices variables are not station, the remaining time-series are station at the level. For a first-order differential series, both test methods show that all series are station with at significance level of 1%. So the results of the stationarity test indicate that the integrated research variables are at level 1 or level 0, which is a prerequisite for applying the ARDL model.

4.3 Nonlinear ARDL model

In the nonlinear ARDL regression model, the bounds test is to test the relationship between variables in the long term Pesaran, M. H., Shin (1999), with the hypothesis H_0 : "Does not exist at

cointegration” and H_1 : “Opposite ”.

Table 5: Results of cointegration tests-Bounds test

Variables: pr, op ⁺ , op ⁻ , g; k=3		
Computed F-valued: 30.573		
Critical value F-statistic		
Significant level	Lower bounds	Upper bounds
10%	2.72	3.77
5%	3.23	4.35
2.5%	3.69	4.89
1%	4.29	5.61

Source: Output from Stata.

Tab.5 reveals that the computed F valued is equal to 30.573 greater than 5.61 at the significance level of 1%. So, the hypothesis H_0 is rejected, it means that the existence of cointegration between variables (single cointegration).

Table 6: Estimation of nonlinear ARDL model

Variables	Coef.	Std. Err.	t	P> t
pr_{t-1}	-0.138*	0.068	-2.04	0.050
op_{t-1}^+	5.754***	0.801	7.18	0.000
op_{t-1}^-	-2.177*	1.073	-2.03	0.051
g_{t-1}	0.157	0.395	0.40	0.693
Δpr_{t-1}	0.097	0.156	0.62	0.583
Δpr_{t-2}	0.036	0.129	0.28	0.781
Δop_t^+	3.487***	0.464	7.51	0.000
Δop_t^-	-1.365**	0.507	-2,69	0.011
Δop_{t-1}^-	0.502	0.535	0.94	0.354
Δg_t	0.031	0.273	0.11	0.910
Δg_{t-1}	0.197	0.245	0.80	0.428
Δg_{t-2}	0.058	0.264	0.22	0.827
Constant	0.092	0.242	0.38	0.707
Transmission effect				
L_{op^+}	41.63**			0.023

L_{op}	-15.75**			0.028
Asymmetric test				
W_{LR}	19.53***			0.000
W_{SR}	44.97***			0.000
Diagnostic test				
R-squared	0.9316			
JB	1.366			0.505
χ^2_{sc}	0.333			0.855
χ^2_{Het}	45.00			0.423
CUSUM				Stable

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$; JB: Normality test; χ^2_{sc} : Breusch–Godfrey LM test for serial autocorrelation; χ^2_{Het} : Breusch-Pagan test for heteroskedasticity; CUSUM: Stable test model.

Source: Output from Stata.

Tab.6 interprets the results of estimating the nonlinear ARDL regression model. The coefficient of the Wald test is statistically significant at 5%. It means that, in the long run, if the gasoline price increases by 100 (VND/liter), the consumer price index (CPI) will increase by an average of 4.163% (Assuming other factors remain unchanged). Similarly, if the gasoline price decreases by another 100 (VND / liter), the price of consumer goods (CPI) will decrease by an average of 1.575% (Assuming other factors remain unchanged). Also, both W_{LR} (long-term asymmetric test) and W_{SR} (short-term asymmetric test) are statistically significant at 1%. This means that the effect of gasoline prices on consumer prices is asymmetric both in the short and long term. In the short term, if the price of gasoline increases by 100 (VND/liter), the consumer price index (CPI) increases by an average of 0.3487% (Assuming other factors remain unchanged). If the gasoline price decreases by 100 (VND/liter), the consumer price index (CPI) will decrease by an average of 0.1365% (Assuming other factors remain unchanged).

5. Conclusions

The research results of asymmetric effect of gasoline price on consumer prices, evidence from the Vietnamese market, has confirmed that, in the short and long term, gasoline prices have an asymmetric effect on consumer prices. It means that the policy of operating petrol prices recently has revealed limitations and shortcomings that have not assuage consumers' expectations. To overcome this problem, the author suggests a number of major solutions. The operating policies for petrol prices are as follows:

Firstly, Acceptation on the viewpoint that the management of petrol and oil prices should be ensured according to the market principles, to be competitive, transparent and to break the monopoly over the distribution market. Government needs to enact laws to encourage more businesses to participate in distribution channels to increase competitiveness and reduce monopoly.

Secondly, for the Price Stabilization Fund, in order to harmonize the state management and the interests of consumers, it is recommended that the Government should only deduct the Price Stabilization Fund when prices fall to keep prices stable (stabilize prices) and create sources for funds, when the price increase is not deducted (so as not to increase the price to achieve the goal

of price stabilization) and the stabilization fund will be used to compensate when the fund is insufficient, then the price will increase.

Third, for the frequency of gasoline price adjustment, the government should consider shortening the frequency of adjusting gasoline prices appropriately, so that domestic retail prices are increasingly closer to world prices, avoiding world prices falling, domestic prices rising, and the opposite.

Finally, for the norm profit, the current policy stipulates that the norm of profit for petrol and oil retail enterprises is 300 VND/liter. This shows that the provision is not marketable because it has to make a profit and has losses, as with the norm of profit norm, the leading petroleum business enterprise will never loose. Therefore, the government needs to study and improve this policy in accordance with the market mechanism, ensuring fair and fair competition.

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THE RELATION BETWEEN CEO TENURE AND EARNINGS MANAGEMENT

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Abstract: *Earnings management is the act of corporate to adjust financial reports to present positive earnings, positive profit growth and gain positive predictive analysis from report through accounting techniques. The financial statements are of great value to all users in decision making and the smoothing earnings will affect the quality of accounting information presented on the reports. Therefore, the research on earnings management is important to information users, attracting attention from the global academic community. Previous studies have found that earning management was often greater than in the last years of the CEO tenure, this result was obtained only after controlling for earnings during the years. However, there are new studies in the later years showing that earning management is done in the early years of the CEO tenure, so what effects do change in the intention for CEOs manage earnings during their tenure. This study examines earning management and the relation between its and CEO tenure.*

Keywords: earnings management, CEO tenure, adjust financial statements.

JEL code: M41, M49

1. Introduction

As more and more scandals related to financial reporting fraud occurred, many accounting regulations have been issued to prevent such cases. In addition to complying with the current accounting regulations, the results of investigations of financial scandals of the early 2000s (eg: Enron, Worldcom, BBT, Bibica, ...) also recognized the role of executives in ensuring the quality of their financial statements, as they can use their influence to change financial reporting results through earnings management.

The motivation to manage profitability of managers can come from personal interests or common business goal. However, this leads to users of financial statements misunderstand about the financial performance and position of the business and make inappropriate decisions. For that reason, the research of earnings management is interested by many researchers in the world and in Vietnam. The research of earnings management can be done under two aspects: the manager's earnings management and the adjusted earning magnitude. Depending on specific goals, managers can adjust profits to increase or decrease compared to the actual earning of the company. And the magnitude of the earning is adjusted under different factors that represent the manager's level of earnings management. The explanations for the manager's earnings management motives were initially based on the Agency Theory. While managers can act for personal benefit and therefore the tendency of earnings management to be stronger when the conflict is

higher. Conversely, even when agency costs are low, high earnings management can be intended to convey information about a manager's future profit expectations. Accordingly, managers tend to make decisions to maximize their own benefits, even based on earnings management. Earnings management, however, is still within the framework of generally accepted accounting principles and therefore this manager's behavior is not as negative as fraud (Dechow & Skinner, 2000). However, the financial statements containing the earnings management behavior will no longer reflect the real picture of the enterprise's production and business activities under normal conditions. This can falsify the information received from investors and stakeholders and reduce the transparency of financial statements (Schipper, 1989; Healy & Wahlen, 1999).

This paper aims to examine profit management and the relationship of the CEO tenure to profit management in businesses, specifically: section 2 summarises the research on earnings management, the causes and the techniques commonly used in earnings management; section 3 presents the discussion on the relationship between earnings management and CEO tenure. After that, the authors will discuss the future development of earnings management and concludes the paper in section 4.

2. Literature review

2.1. Earnings management

According to SFAC 01, the financial statements need to provide business performance in a period. Dechow et al. (2010) use the language of SFAC 01 to define earnings quality as: The higher the earning quality, the more information is provided about the characteristics of business performance, suitable to each specific decision of each decision-making subject. Therefore, the quality of a business's earnings will influence the decision of the user of the Financial Statements (FS). Therefore, manager will find ways to adjust profits to influence user decisions for different purposes, known as the term "earnings management".

In addition, earnings management is understood in many different aspects such as:

- Earnings management as a "purposeful intervention in the external financial reporting process, with the intent of obtaining some private gain" (Schipper, 1989).

- Earnings management as a gray area where the accounting is being perverted, where managers are cutting corners; and, where earnings reports reflect the desires of management rather than the underlying financial performance of the company (Levitt, 1998).

- Or earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers (Healy and Wahlen [1999, p. 368]).

2.2. The cause of earnings management

Earnings management can be considered as fraud on the financial statements. Meanwhile, fraud in disclosing information on financial statements is one of the current topical issues, especially after the bankruptcy of a series of leading companies in the early 21st century. Bankruptcy allegedly fraudulent financial statements can include a lot like: Lucent, Xerox, Rite Aid, Waste Management, Micro Strategy, Raytheon, Sunbeam, Enron, Worldcom, Global Crossing, Adelphia, Qwest. Senior executives, including chief executives (CEOs) and chief financial officers (CFOs) of these companies, are alleged to have been involved in processing the data that led to fraudulent financial reports. (Giang Tan, 2009)

To find out the cause of fraud, we refer to Cressey's fraudulent triangle model, according to Cressey, fraud only arises when meeting the following three factors:

- **Pressure:** Fraud often arises when employees, managers or organizations are under pressure. Pressure can be deadlock in personal life such as financial difficulties, due to the rift in the relationship between employer and employee.

- **Opportunities:** When under pressure, if given the opportunity, they are willing to commit acts of fraud cheat. There are two factors related to opportunity: information capture and execution skills.

- **Attitude and personality:** Not all people who encounter difficulties and have opportunities to perform frauds depend a lot on individual's personal attitudes. There are people who are under pressure and have the opportunity to perform but still do not commit fraud and vice versa.

Cressey's fraud triangle is used to solve many fraud cases. However, because this is not an axiom, it cannot be asserted that this model is true in all cases. Therefore, Cressey's fraudulent triangle is used to explain the causes of earnings management as follows:

- **Pressure:**

According to Chan, Chen, Chen and Yu, (2015), companies in industries with high growth opportunities are under pressure to meet expectations.

Get better business results from the market (market pressure). At the same time, managers will suffer more if the business results are not met. On the other hand, for companies with a large share of capital owned by financial institutions with short-term investment views, they will be pressured to make profits to meet the expectations of these shareholders.

Managers have incentives to report positive earnings news based on the market. However, market expectations are influenced by economic events, such as the profitability of related companies (Far-Rell and Whidbee 2003). To the extent that other companies exhibit unexpectedly bad performance, a manager may find that there is less responsibility when they report similar poor performance. Varian (2002) shows that managers are more willing to disclose more disappointing news, as many companies publish declines in their Financial Statements. Conversely, managers may feel more pressure to increase profits reported when other businesses publish good news.

Or according to Bratten, B., Payne, JL and Thomas, WB (2015) Report large companies put pressure on smaller companies in the same industry: depending on whether large companies announce good or bad performance.

According to Dechow et al. 2010, one of the factors affecting income quality is the characteristics of an enterprise, including the business results of the enterprise so if the business results are often low creating pressure on corporate governance (Petroni, 1992; DeFond and Park, 1997, Balsam et al., 1995; Keating and Zimmerman, 1999; Doyle et al., 2007; Kinney and McDaniel, 1989)

Another pressure to earnings management is that the market may be uncertain about the abilities of CEOs in the early years of their tenure, and the reported returns at that time will have a major effect on market assessment of their capabilities (Fama, 1980; Gibbons and Murphy, 1992; Hermalin and Weisbach, 1998; Holmstrom, 1999). The CEO's competence is a valuable asset, because it relates to the long-term interests of CEOs, such as higher future compensation, reappointment, and management autonomy.

- **Opportunity:** It is seen as the catalyst that allows fraud to take place if both pressure and personality exist. Opportunity can include poor or lack of fraud-control policy, poor oversight, a low level of risk reduction, weak internal software controls, a lack of segregation of duties, and general poor governance.

- **Attitude:** The manager has the incentive and opportunity to conduct earnings management behavior. In which the opportunity to conduct an “advantageous comparison” is explained as follows: The administrator knows about the serious earnings management behaviors that have taken place in the market (i.e. discovered) and they compared their earnings management behavior with these examples. They then draw conclusions that their behavior is relatively harmless and appropriate (Brown, 2014).

2.3. Techniques often used in earnings management

Earnings management techniques are often based on two basic groups: real earnings management (RM) and accruals-based earnings management (AM).

2.3.1. Real earnings management

Roychowdhury (2006) focuses on studying the application of RM to deceive stakeholders that the company has achieved a standard profit and still operate under normal conditions. The author found evidence that companies dodged loss reporting in three ways: boosting sales by reducing prices or offering favorable credit terms to customers; over-normal production to allocate costs to inventories as well as reduce COGS; cut down on non-mandatory expenses such as advertising costs, R&D costs ... to improve profits.

According to Francis, J.R. and Wang (2008): previous studies have shown 4 types of RM that managers often apply to earnings management:

- Reducing research and development expenses to increase income (R&D RM)

- Reducing selling, general and administrative expense to increase income (SG&A RM): SG&A expenses contribute to the creation of intangible assets such as brand, technology, customer loyalty, human capital and employee commitment.

These two types of RM are expected to impact the company’s operations and have long-term consequences. Some researchers have demonstrated that managers have cut down on non-mandatory costs to achieve different profit targets such as Roychowdhury (2006), Baber et al. (1991), Dechow and Sloan (1991), Bushee (1998), Bens et al. (2002), Cheng (2004).

- Timing of income recognition from the disposal of long-lived assets and investments.

- Cutting prices to boost sales in the current period and/or overproducing to decrease cost of goods sold (COGS) expense

2.3.2 Accruals-based earnings management

Companies often treat debt write-off as an earnings management tool during the first year of changing CEOs (Strong and Meyer, 1987; Elliott and Shaw, 1988; Pourciau 1993). This technique relates to the relationship between CEO tenure and earnings management because debt relief is the motivation for CEOs to report higher earnings in the first years of their tenure, and encourage The CEO reported higher earnings in the last year of his tenure.

According to Ali, A. and Zhang, W. (2005), the CEO made a practice of making earnings in the first years greater than the following years of his tenure:

- Subjective accumulation is larger in the first years than in the later years of the CEO's management tenure.

- Subjective extraordinary expenses are smaller in the first years compared to the later years of the CEO's management tenure.

According to Daniel A. Cohen, Paul Zarowin (2010), summarizing previous studies on earnings management based on accumulation around SEO³ events.

The techniques used mainly derive from the three income characteristics that have been widely used in previous income quality studies: the magnitude of the extraordinary deduction (Frankel, Johnson, and Nelson 2002); ability to report losses (Burgstahler and Dichev 1997); and prudent income based on the theoretical framework on how to record timely losses of Basu (1997) and Ball, Kothari, and Robin (2000). According to Jere R Francis, Dechung Wang (2008), show:

- Signed abnormal accruals: smaller in countries with strong protection against investors.

- Loss avoidance: customers of Big 4 are not afraid to report losses like non-big groups 4. However, this only happens in strong protection countries for investors.

- Earnings conservatism: investor protection and the audit profession have a common role in creating a good quality of profit.

Graham et al. (2005) found that managers prefer to use RM rather than AM to adjust profit on the report. Unlike AM, which is only done through accounting, RM changes the actual activities of the business, so it will have a direct impact on current and future cash flows (S. Roychowdhury, 2006). For example, conducting overproduction in this period can help managers reduce fixed costs allocated to products, thereby reducing cost of goods sold, increasing accounting profits. But this will also increase inventory levels, increase costs of businesses in later periods.

Despite negative consequences on the company's performance, the manager still chose RM over AM or a combination of these two methods. This is because, firstly, the annual financial statements will be audited by independent auditors or checked by state agencies.

If applying AM, it will be susceptible to interference by the above supervisors and not achieve the goals of the regulator (K. Gunny, 2010). Meanwhile, RM is often harder to detect because it mixes with a normal change in business operations to maximize business benefits. Second, implementation of AM usually takes place at the end of the year, while the RM can be carried out at any time of the year, creating flexibility for the manager in implementation. According to research by Chen (2009), managers often evaluate the performance achieved in the period, then value will be done by profit management on an accrual basis. Third, RM is often influential in the long term, while AM requires a reversal next year, so it can easily cause disappointment and doubt to investors if profits drop dramatically in the same period.

Many studies such as Zang (2012), Enomoto, Kimura and Yamaguchi (2015) show that the trade-off between AM and RM to optimize the purpose of managers; Matsuura (2008) also found the sequential and complementary between the use of AM and RM to level the accounting profit in the period.

3. Results and Discussion

The earnings management by CEOs in the first and last year of their tenure CEO has been the subject of many other studies before. Studies show that new CEOs are related to non-routine change, previous CEOs used to disclose the stock / losses of businesses in the first years they managed, then the earnings reported for

the next year are higher. (Strong and Meyer, 1987; Elliott and Shaw, 1988; DeAngelo, 1988; Pourciau, 1993). Previous studies have suggested that CEOs declare profits in the last year of the tenure to increase salary in the final year (Dechow and Sloan, 1991; Pourciau in 1993; Murphy and Zimmerman, 1993; Cheng, 2004; Kalyta, 2009). During 1992-2010, however, discretionary accruals were significantly higher and abnormal discretionary costs, such as R&D costs, were significantly lower among the first year (usually the first three years) compared to the later years of the CEO tenure. Annual ROA in the early years compared to the last years of service of the CEO tenure is about 25%. The difference in profitability between the early and later years of the CEO tenure is significantly smaller for businesses with higher organizational ownership, analyst , board independence and audit independence. These results suggest that profit margin is greater in the first years than in later years of the CEO tenure and better supervision of CEOs helps to reduce this impact.

Moreover, with some previous empirical research on earnings management in the last year of the CEO's departure, we find that earnings declaration is not significantly higher in the last years than in other years during their tenure. However, after controlling for earnings making during the first years of the CEO tenure, we find that profit declaration is significantly larger in the final year of the tenure, which is only relevant to matters of the departure of CEOs.

Another explanation for making larger profits in the early years of the CEO tenure is due to the CEO's low competence. Declared profits in the early years, and they were fired for a few years to become CEOs because their earnings management was discovered (Desai et al., 2006; Hazarika et al, 2012.).

For CEOs who have remained in the office for a long time, arbitrary accruals in the first few years are reversed in the following year, suggesting that higher discretionary accruals in the first years reflect a profit margin. Ali, A. and Zhang, W. (2005) found that during the first year of the CEO tenure, debt write-offs were significantly larger, adversely affecting the reported profits. And write off debt significantly smaller in the second and third year as well as the last year of the CEO term, consistent with the motives of the CEO to declare profit in this period.

In addition, the profit margin is greater in the early years than in the later years of the CEO tenure, perhaps due to concerns about the CEO's career. Graham et al. (2005) find that three-quarters of CEOs view career interests as an important driver for earnings management. If earnings during the first years of service is not controlled, the CEO last year's earnings management tests can provide misleading results.

Also Francis et al. (2008) predict that reputable CEOs are less likely to manage profits because they will suffer human capital losses. Use the media as a proxy for the CEO's reputation and settlement is not signed as a measure of earnings management.

In general, the results of Ali, A. and Zhang, W. (2005) suggest that the profitability of income is greater in the first years than in the later years of the CEO tenure. Finally, research by Ali, A. and Zhang, W. (2005) shows that companies did not invest in the first years of the CEO tenure and then increased investment. Ali, A. and Zhang, W. (2005) argue that in the first years of operation, the CEO destroyed the ineffective assets that his predecessor established and did not want to sell. The CEO then gains more benefits after gaining more control than the board. Ali, A. and Zhang, W. (2005) suggest that the motivation for profit management also changes over time by CEOs. Moreover, the author shows that arbitrary payables are larger in the first years of the CEO tenure, cumulative reversal of subsequent years, and bad debts affect the reporting income unfavorably during the changing year of the CEO.

In addition, the authors also found that the difference in profitability between the first and subsequent years of the CEO tenure is less pronounced in businesses with stronger supervision, as shown by organizational ownership, analyst, board independence and audit independence. In addition, the author's findings are significant for profit-checking checks by CEOs who leave during their final year. This inspection may provide uncontrolled bias for profitability in their early years.

4. Conclusion

In short, the market may be uncertain about the capacity of CEOs in the first years of the term, and the profit reported at that time will greatly influence the market's assessment of their capabilities (Fama, , 1980; Gibbons and Murphy, 1992; Hermalin and Weisbach, 1998; Holmstrom, 1999). The CEO's competence is a valuable asset, because it relates to the long-term interests of CEOs, such as higher future compensation, reappointment, and management autonomy. As a result, managers work harder in their early years to show off their capabilities, and CEOs also have a greater incentive to claim profits in the first year than in later service years.

This paper only mentions the relationship between CEO tenure and earnings management behavior. In Vietnam, the research on earnings management is still quite new. In recent years, Vietnam's economy has been affected by major changes in the global economy, and business activities of enterprises have also faced many difficulties and instabilities. Managers are under great pressure to report profits to investors, creditors as well as the market. The more pressure they are under, the more likely they are to perform earnings management activities to achieve the expected returns. This background creates an opportunity for domestic researchers to continue to explore and explore issues surrounding earnings management, thereby bringing about clearer and more complete understanding of earnings management in the Vietnamese businesses.

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SUSTAINABLE DEVELOPMENT REPORT AND CURRENT TRENDS

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Abstract: *Sustainable development is the trend of the world in the past few decades. Organizations are becoming increasingly aware of taking responsibility for the environmental, economic and social impacts they create throughout the value chain. Sustainable development report is considered as a tool to disclose, explain and undertake corporate responsibility to stakeholders for its operations. Although very popular around the world, sustainability reporting is still relatively new to the Vietnamese business community. Sustainable development report is currently a topic that attracts a lot of attention of researchers in the field of management and accounting. This paper aims to introduce the Sustainable Development Report and current trends.*

Keywords: Sustainable development report, sustainable development, social responsibility report, GRI.

JEL code: M41, M49

1. Introduction

The issue of sustainable development is increasingly emerging among corporations and stakeholders around the world. Sustainable development report has been enthusiastically responded to by the business community around the world and is regarded as an important information product for those interested in a business. Sustainable development report plays an important role in production and business activities of enterprises. This is also one of the tools to help build a transparent, fair, and sustainable business environment, ensuring accountability. Over the past few years, the number of companies sharing details of their sustainability initiatives in public reports has grown rapidly. The names used for these reports vary, including “sustainability”; “Sustainable development”, “corporate social responsibility”; “Corporate responsibility”; “Three basic points” and “accountability” report. Despite the increase in these reports, questions about the information this report should have and how it is structured are of interest (Davis and Searcy, 2010). For that reason, the sustainability report has attracted the attention of researchers around the world from the 1990s to the present.

Sustainable development report is voluntary, but now many countries are asking for a transition to be mandatory. They recognize that highly adaptive economic systems have clear explanations for long-term risks, including environmental, social and economic impacts. The issue of sustainable development is increasingly emerging among corporations and stakeholders around the world.

Sustainable development report helps businesses participate in global value chains and improve their competitiveness and access to markets. In Vietnam, sustainable development report is still a new concept, especially since Circular 155/2015/TT-BTC issued requires listed companies on the stock market to disclose sustainable, this issue has started to attract more attention from researchers in Vietnam. This

paper examines sustainable development reports and related research of sustainable development reports research to create a premise for the next research directions, as follows: section 2 summarises the research on sustainable development report; section 3 presents sustainable development report in the world and Vietnam then discuss about research trends related to sustainable development report; section 4 gives some key conclusions and implications of the paper.

2. Literature review

Business activities are aimed at exploiting resources to achieve profit targets, so it is difficult to avoid damaging environmental impacts, exhaustion of resources, and hurting workers and communities. In the new economic era, every business participating in economic activities must have a responsibility for the overall sustainable development. Sustainable business operations in each business will contribute to the country's sustainable development. In the short term, a sustainable business may increase costs, but in the long term the position of the business is increasingly strengthened and brings economic benefits to the business. Therefore, most business managers believe that it is necessary to integrate sustainable development strategies into business strategies of enterprises.

The present reality shows that, besides financial information, businesses must also report on their sustainable development activities. Sustainable development reports supplement financial statements, aiming to fully inform your business in relation to related parties when doing business. Sustainable development report are business information about their sustainability commitments and activities to follow.

Sustainable development and social responsibility are related to goals, but differ in level and scope. According to the European Commission's latest definition of social responsibility "... Social responsibility is the responsibility of businesses for their impacts on society ... is a combination of social and ethical issues. , human rights and consumer interest in core business and strategy "(European Commission, 2011: 6).

- Global set of standards for social responsibility - defining social responsibility as "organizational responsibility for the impact of decisions on society and the environment through transparent and ethical behavior" (International Organization for Standardization, 2010), and directly refers to the maximization of contribution to sustainable development as the "leading goal of the organization". These characteristics directly impact sustainable thinking. Meanwhile, sustainable development is a macroeconomic and social issue (Ebner & Baumgartner, 2006). Enterprises are called upon by international and national organizations to absorb and apply the principles of sustainable development into their operation strategies. According to Hahn (2011), sustainability and social responsibility gradually converge and so by reviewing the theoretical overview of social responsibility reporting or sustainability reporting are consistent concepts.

Based on a normative basis, the firm's specific activities in the area of sustainability and social responsibility are measured by means of sustainable accounting. Accounting sustainability (related to) includes information management methods that aim to create high quality data to support internal decision making regarding company sustainability. Based on reliable accounting data, the sustainable development report provides and demonstrates information about the status and progress of the company's sustainability to stakeholders through key media. In terms of the internal assessment of organizational sustainability, accounting plays a fundamental role for sustainability reporting (Lamberton, 2005).

According to Roberts (1992), social responsibility reporting is a strategic plan for companies to manage stakeholder relationships. In other words, the company uses social responsibility reporting to communicate

with stakeholders. Disclosure of corporate social responsibility activities is necessary because the company has a social obligation or has a social contract (Karagiorgos, Theofanis, 2010). Stakeholders are increasingly required to provide more information not only about economic efficiency but also the environmental and social practices of the company (Waddock, 2003). This is an important driving force for the development of sustainability reporting tools.

- Significantly reduce the time and effort required to respond to social and environmental disclosures (Chester and Woofter, 2005). Nikolaeva and Bicho (2011) find that competitive pressure and the media along with the GRI vision are important determinants of the application of the GRI standards. By publishing GRI reports publicly, companies don't need to spend too much time responding to requests from non-financial stakeholders. GRI guidelines can become an assessment of investment decisions because shareholders can understand past performance and future goals (Willis, 2003).

- Reporting based on GRI is better. Several studies show that GRI users score higher than non-users in a standard of overall quality of sustainability reports (Chester and Woofter, 2005, p. 19). Samy et al., (2010) used the GRI standards in research and argued that GRI is an attempt to overcome problems that may occur with the company using other measurement standards.

- Higher financial performance. GRI users have lower volatility than stock prices and better returns (Chester and Woofter, 2005, p.19). Schadewitz and Niskala (2010) share the view that companies can gain higher profits by applying the GRI standards, which has been tested in their research.

The Global Reporting Initiative (GRI) is a not-for-profit organization, operating a network of experts from different stakeholder groups aims at providing a “globally shared framework of concepts, consistent language, and metrics” to “communicate clearly and openly about sustainability” (GRI, 2011b:3). The GRI Guidance was established in Boston in 1997 by the Union of Environmentally Responsible Nations (CERES) and the United Nations Environment Program (UNEP) began working to achieve global standards for environmental protection. format and content of social responsibility disclosure. The main reason for this project is to overcome the limitations of the previously presented reports that differ in content and therefore cannot be compared. Thus, the GRI was established with the purpose of creating a global sustainability reporting framework (Siew, Renard YJ, 2015). Currently, G4 is the latest version of the GRI Guidelines, providing reporting principles that include materiality; completeness; balance; comparability; usefulness; timeliness; clarity; reliability.

Quality requirements of sustainability reporting under the GRI standards, requirements for ensuring the quality of sustainable development reports include: Requirements for balance, requirements for comparability, requirements accuracy, requirements in time, requirements for clarity, requirements for reliability:

- Balance requirement: Requires a sustainable development report to reflect both positive and negative impacts of the business on sustainable development. The balance requirement enables information users to make a comprehensive assessment of sustainability performance. An imbalance can occur when a business only mentions its achievements in its report and ignores events that negatively impact sustainable development.

- Comparable requirement: It is an essential requirement allowing readers to report on the performance of enterprises. Implementing this principle firstly allows the reader to analyze the changes in sustainable development activities of enterprises over time, and at the same time can analyze and compare with other sustainable development activities of other businesses.

- Correct requirements: The reported information needs to be full and accurate so that the objects using the information have a basis to evaluate the operation of the enterprise. Accuracy refers to both the accuracy and magnitude of the error. Enterprises need to describe basic and proven data measurement techniques that can be replicated with similar results. The error must not be too large to influence the decisions of the users of the reporting information. Enterprises need to ensure that the quality of reported information is valid on the basis of basic information and evidence.

- Timely requirements: The value of information closely tied to the timing of information provision enables stakeholders to use the integration of the analysis in order to make decisions. Sustainability reports must be released on time and be available to all stakeholders to make informed decisions.

- Clearly requirements: Requires a sustainability report to be presented in an easy to understand, accessible and usable format. The clarity of the report allows the user to find and understand the information in a convenient way. To ensure clear requirements, a sustainability report must also show the full level of information, limit redundancy, scientific terms, slang, abbreviations as well as confusing presentation.

The concept of sustainability appears poised to continue to influence future discourse regarding development science. This, in the view of Porter and van der Linde (1995), implies that the best choices are likely to remain those that meet the needs of society and are environmentally and economically viable, economically and socially equitable as well as socially and environmentally bearable. This leads to three interconnected spheres or domains of sustainability that describe the relationships among the environmental, economic, and social aspects of sustainable development

The development and focus of sustainability-related reporting has seen several shifts (Fifka, 2012; Kolk, 2010). In the 1970s, traditional financial reporting in Western countries was sometimes complemented by additional social re-ports. In the 1980s, the focus shifted towards environmental issues such as emissions and waste generation often replacing prior social reporting. By the end of the 1990s, reporting research and practice increasingly began to consider the social and the environmental dimension simultaneously in a joint report which is often published alongside traditional financial reports

3. Results and Discussion

3.1. Situation of sustainable development reports in the world

Sustainable development report is considered as a tool to measure, record and announce the goals and responsibilities of enterprises towards sustainable development. Because besides financial information, information about enterprises' activities in environmental and social aspects is increasingly concerned. Sustainable development report is a new tool, helping businesses organize and disclose information about their sustainable activities in a similar way to financial reporting. Sustainable development report plays an important role for related parties and within the company itself. Through public reporting, transparency, accountability and its efforts in specific activities for sustainable development, the company strengthens the trust of stakeholders, increases credibility, brand name of the company. Today, stakeholders are always interested in how sustainable activities can benefit the core businesses of businesses. For enterprises internally, the process of identifying sustainable development aspects and preparing Sustainable development report helps businesses consider the interests of stakeholders, identify risks and business opportunities, and then standardize for new development trends, decentralizing responsibilities and improving the management system to improve operational efficiency. So the publication of sustainable development reports is becoming

an international practice. It not only helps businesses strengthen cooperation with stakeholders, investors and the community, but also helps businesses improve business risk management, improve their ability to adapt in a rapidly changing environment and compete more effectively.

In addition, a number of studies show that there has been evidence of the relationship between sustainable development and operational efficiency and the profitability of enterprises. Lack of information on sustainable development can lead to a loss of business opportunities and attract investment capital from responsible investors for sustainable development. Sustainability reporting is a necessary condition for businesses to participate in international economic integration. The 2019 United Nations Global Compact Progress Report of the United Nations Global Compact Network surveyed and found the results: 86% of CEOs recognize that the global economic system needs to refocus on equitable growth. Smart CEOs also know that sustainable business is good business, with 73% reporting that it builds trust and reputation, and 44% pointing to opportunities for sustainability to generate revenue and meet demands from consumers. Only when enterprises ensure sustainable environmental and social development will their profit targets be stable and developed.

Regarding the presentation of sustainability reports, the survey results of the World Business Council for Sustainable Development show that: 80% of members prepare sustainability reports under a separate report, meaning information about sustainability is presented separately from other reports; a few companies put their sustainability reports into integrated reports or integrated reports; Nearly 75% of sustainability reporting has been produced following the Global Reporting Initiative (GRI) guidelines. This also contributes to the demonstration that GRI is the leading networking organization with the world's most used sustainability reporting framework. GRI's Sustainability Reporting Standards is considered to be the most useful because of its widespread use and recognition. The GRI's Sustainability Reporting Standards addresses core sustainability issues including economic, social and environmental impacts with technical guidance on how to measure and report these issues. GRI is applicable to businesses and organizations of all sizes and different industries. The GRI representative also added that GRI has recently launched its fourth generation, emphasizing the flexibility of the reporting framework, in which businesses can choose areas for reporting depending on their needs. according to their level of involvement in the operations of their business.

3.2. Situation of sustainable development report in Vietnam

According to economic experts, sustainability reporting is a useful non-financial reporting product. But it must be admitted that the process of making sustainability reports is still too new, relatively unfamiliar to many Vietnamese enterprises. In Vietnam, many companies and corporations have pioneered in preparing sustainable development reports since there are no legal regulations requiring mandatory sustainable development reports such as Baoviet Holdings (BVH), Vietnam Dairy Products Joint Stock Company (VNM), DHG Pharmaceutical Joint Stock Company (DHG), PVDrilling (PVD),... In addition, although there are no legal regulations, since 2013, the Vietnam Listed Companies Awards (VLCA) by HOSE (HSX), VIR and Dragon Capital have also cooperated to bring Sustainability Reporting Awards (SRA) into the framework of the voting, aiming to guide businesses interested and prepared sustainable development reports. Thereby, the enterprises honored in the Sustainability Reporting Awards have received encouragement from the community and strengthened the confidence of investors. The award-winning sustainable development reports have become a valuable illustrative source for other businesses to learn to make sustainable development reports.

Reality in Vietnam enterprises over the past time also shows that most businesses need more specific guidance and advice on content and how to make sustainable reports. The first legal document to request the disclosure of information on sustainable development of listed companies is Circular No. 155/2015 / TT-BTC dated October 6, 2015 of the Ministry of Finance guiding the disclosure information on the stock market. Listed companies can prepare their own sustainability report or integrated presentation in the annual report. Content enterprises must report the impact on the environment and society, including 6 issues: (1) Material resource management; (2) Energy consumption, water consumption; (3) Compliance with the law on environmental protection; (4) Employee related policies; (5) Reporting relating to accountability to local community; (6) Report on green capital market.

After nearly 5 years of Circular No. 155/2015 / TT-BTC taking effect so far, reports on sustainable development of listed companies have seen remarkable development. Fiscal year 2015 (published report in 2016) is the first year businesses have to report sustainable development information, so many businesses are passive, the content of the report is sketchy, even some businesses still have skip this content. However, by 2016, only a few SMEs have not yet shown sustainable development content in the report. The content of the reports of enterprises focused on 5 requirements of Circular No. 155/2015/TT-BTC, which are material resource management, energy consumption, water consumption, compliance with the law on protection. worker-related policies, reports related responsibility to local communities. However, at that time there were still many companies that did not report the content related to the green capital market. Up to now, the sustainability reporting situation of the private enterprises has gradually stabilized. The majority of enterprises presenting sustainable development report content incorporated in annual reports and presented contents have basically complied with the requirements of Circular No. 155/2015/TT-BTC. Some businesses presented their own sustainability reports with rich content. The typical companies providing high quality sustainability reports are BVH, VNM, Vingroup, FPT Corporation (FPT), HAGL Joint Stock Company (HAGL), ... In which, many companies have made reports under GRI's guidance such as BVH, FPT, HAGL, ... These reports have been highly appreciated by international organizations, even honored through awards for development reports.

Circular 155 is an important step forward in demonstrating corporate social responsibility. One of the new points in Circular 155/2015 / TT-BTC on information disclosure on the stock market is the regulation that public enterprises must disclose information related to sustainable development. The social and environmental disclosure regulations in Circular 155 mark an important step forward for Vietnam towards a sustainable financial market.

The company's long-term growth outlook will be more clearly presented in its annual report through its sustainable development goals, compliance with environmental protection legislation, and how the company manages its impacts and risks related to the environment and society

Although it has been in use since 5 years, the number of listed companies complying with sustainability reports is still slow. Some reasons are as follows: Enterprises face pressure and difficulties in publishing. Most businesses have to apply for an extension of the time to publish quarterly and semi-annual financial statements.

“Audited annual financial statements have a 90-day disclosure period, but we are required to disclose financial statements after 20 days, reviewed semi-annual financial statements 45 days after the end of the

period. Accounting is very difficult ” is a quote from a business representative in Vietnam. The pressure on accountants is great because I cannot control the progress in the units. Sometimes, because the second, third, or fourth tier companies are not clear enough, I also take time to verify, or just have a small mistake to find out where the error to fix. That is not to mention the consolidation process can also have flaws. Many businesses have said that the provisions on the deadline for publication of financial statements in this circular put pressure on enterprises. The information disclosure deadline takes into account whether the enterprise needs to consolidate the financial statements or not.

3.3. Some research trends related to sustainable development report

After summarizing the studies on sustainable development report, the author finds that the research direction focuses mainly on the following issues:

- Find out the development of sustainability reports and related issues definition and measurement (Bebbington et al. 2014; Montiel et al. 2014; Lozano et al. 2011; Amran et al. 2011; Burritt et al. 2010)

- Factors affecting sustainability information disclosure such as corporate governance, reputation, size, industry, economic performance, etc. (Amran et al. 2014; M. Shamil, Mohamed et al. 2014; Michelon et al. 2011;)

- Means, how to publish the sustainability reporting (Morhardt, J. Emil. 2010)

- Benefits of sustainability reporting: sustainability reporting and corporate values (Bachoo et al. 2013; Servaes et al. 2013; Becchetti, Leonardo et al. 2012); sustainability reporting and economic performance (Mishra et al. 2010; Karagiorgos and Theofanis. 2010); sustainability report and cost of capital (El Ghouli, Sadok et al. 2011); sustainability reporting and innovation (Gallego-Alvarez et al. 2011);

- Factors affecting the integration of Financial statements and sustainability reporting, the relationship between financial statements and sustainability reporting. (Jensen, Julia Catharina, and Nicola Berg. 2012; Frias - Aceituno et al. 2014)

- sustainability reporting for small and medium enterprises (Tomšič, Nastja, Štefan Bojnec, and Blaž Simčič. 2015)

- sustainability reporting and assurance (Junior et al. 2014)

- ...

Most studies use quantitative methods to test relationships related to sustainability reporting, the use data is secondary data (financial statements, annual reports, development reports). corporate website, government organization website) (Amran et al. 2014; Mohamed, et al. 2014; Bachoo et al. 2013; Servaes et al. 2013; Michelon et al. 2011; El Ghouli, Sadok, et al. 2011; Gallego-Alvarez et al. 2011; Mishra et al. 2010). Few studies use qualitative methods such as case studies to discover new factors (Lozano et al., 2011).

In Vietnam, studies focus primarily on analyzing how corporate social responsibility affects the interests of businesses. Due to the difficulty of collecting research works in Vietnam, through the survey, the author found a number of research works focusing on the following issues:

- Applying accounting management environment (Trinh Hiep Thien. 2010)

- Social responsibility accounting orientation (Huynh Duc Long. 2014)

- Impact on accounting of social responsibility (Nguyen Thi Ngoc Bich, Trinh Hiep Thien, Le Hoang Oanh)
- Sustainable development and corporate governance (Melina Manochin, Nguyen Thi Xuan Trang, Nguyen Lan Phuong. 2015)
- Check the content of published sustainability reports at listed companies (Le Ngoc My Hang. 2015; Assoc. Prof. Dr. Ha Xuan Thach and Mr. Duong Hoang Ngoc Khue (2014)
- The relationship between the quality of financial statements and the quality of sustainability reports (Trinh Hiep Thien and Nguyen Xuan Hung. 2016)

4. Conclusion

Reporting on sustainability and social responsibility has become a topic of interest in management and accounting. Research results show that most researches on sustainable development reporting in Vietnam so far mainly focus on analyzing how this report will affect the interests of enterprises, which is not on the development, means, and methods of publishing reports; benefits published in sustainability reports, factors affecting the publication of the report or the report status in enterprises, ... This will be a research gap, researchers can perform these research directions in the future.

In addition, The Future of Sustainability Reporting will focus on companies' ability to create value for business and society. Companies will have to be much clearer about its contributions to efforts such as improving wealth distribution, reducing the impact of climate change protecting ecosystems, implementing regional sustainable development plans. The language of future reporting will be "monetizing the Impact" and "valuation of externalities." Data technology will allow companies, professionals, and stakeholders to create methodologies that use large amounts of data to more accurately evaluate external factors that can be monetized. Financial value language will be used to represent the natural and social value in future reports, ... Due to a change in reporting trends, especially in the complicated epidemic situation. As complicated as the present, the authors can study this situation in the world and draw lessons for Vietnam.

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IDENTIFY INTEREST AND ATTITUDE OF ACADEMY STUDENTS BASED ON CONFESSION POSTS ANALYSIS

Hoang Huu Son, Do Thi Thu Thao¹

Abstract: *Capturing psychological changes and aspirations of the young, especially students, is always the essential concerns. However, this is still a big challenge not only for administrators but also for psychologists. Due to the population of sharing information trends through confessions in student communities, confession pages become a valuable source for identifying the interests and attitudes of student communities. In our research, we propose an text analysis methods to mining AOF confession post in a year to find out the issues that students is interesting and assessing the feelings. As a result, the model automatically extract students' interest according to 3 interest domain and built an automatic sentiments recognition model with 52% F-score accuracy. This research is the potential step to build an automated system of assessing young people's perspectives during the social networking boom.*

Keyword: *Facebook Confession; Topic Model; Sentiment Analysis;*

INTRODUCTION

Social networks are places where users share, update information of each user through individual pages or share information of community through pages, groups. These are public information. Besides, users also have the need to share confidential information to share and express feelings in an anonymous form. Therefore, Facebook confession pages were born and became a trend of the young.

Facebook confession sites have gained popularity, giving youth another venue to anonymously post secrets, rants, and insults. Facebook confession sites are set up in that posts are anonymous while “like” or comments on the post identify the user by name. Confession sites appear to be associated with university, as they may contain the university name, mascot, acronym, city or state, however, most Facebook confession sites are not affiliated or sanctioned by the university they are associated with. Concerns were risen about cyber bullying and the effects of the sites on the reputation of the school. Cyber bullying is using electronic communication devices to threaten, intimidate, or insult someone.

The trend is known roughly as revealing ours secrets on social networks Facebook. Many pages related to this trend were established such as CNN Confessions of University of Languages and International Studies, Ams Confession of students studying in Amsterdam, FTU Confession of “superheroes” from Foreign Trade University and many other related sites, the most famous and the biggest in these Confession sites is Confessions Of A Uni Student which was founded in the UK and has nearly 250,000 participants. Do not stop at sharing learning secrets, emotional secrets are also posted, and then finding information of user also appeared. Advantages of Confession pages include: 1) Sharing problem with someone will promote their own

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mood. 2) You can share with everyone secretly that can be directly or identity inform. However, confession pages also having some disadvantages such as: Cause arguments or sharing sensitive information

Though the confession pages contain extremely important information for data mining, most research on confession sites is very limited. In my view, there are a few typical studies. Research of Birnholtz et al [1] has shown the advantage of confession sites that allow users to ask about taboo and stigmatized topics against others locally and get less threatening or negative matching responses. C. Chelsea's study uses the Linguistic Inquiry and Word Count (LIWC) model to give the linguistic features of confession and shows the emotional behind it so that they understand students' attitudes towards problems of the university [2]. DAMAYANTI et al did a research on confessions to show the virtual reality of housewives in Indonesia [3]. Fatima used a content study of confession of the male community in Pakistan on women's human rights [4]. In general, studies on Confession Exploration are not much, focusing mainly on psychological and sociological issues.

In our research, we focus on researching to apply Text processing methods to bring out the characteristics of the community under two angles to identify the problem that the community is interested in through the problem of identification, the problem topic detection and building automatic emotion recognition model of each confession to detect sensitive confession, to help identify events and characteristics of the community.

SOCIAL CONTENT MINING BASED ON TEXT PROCESSING

Because of the content generation of the social network comes from a large number of people using it, it includes posts, share comments, likes and other reactions. It describes the user activity information when participating in social networks. Thus, when exploring content on social networks, it will help to bring out implicit / existing information that is reflected by each individual in particular and the community in general. Because of 90% content of social media is in the form of text (post, share, comment), text techniques will help extract information from social networks and become a major trend.

Due to the goal of exploring social media to identify specific community-specific characteristics, it is necessary to bring up the issues presented in the social media content (Topic modeling problem) and the attitudes of the community in content (emotional recognition problem). These are also two problems I need to solve in this study.

2.1. Overview Topic model

Topic modeling is a fast-growing approach that enables businesses to analyze large quantities of unstructured text data, and understand the main topics of each text. Topic modeling is an unsupervised machine learning technique. This means it can infer patterns and cluster similar expressions without needing to define topic tags or train data beforehand. Topic modeling solves the following type of problem: giving a set of text documents (such as emails, survey responses, support tickets, product reviews, etc), and you want to find out the different topics that they cover and group them by those topics.

Several unsupervised learning algorithm can be deal this problem:

Bag of Words is an algorithm that supports natural language processing and BoW's purpose is to classify text or text. The idea of BoW is to analyze and group according to the frequency of occurrence of words to come up with "Bag of key Words" (corpus). With new test data, find out the number of times each word of test data appears in "bag".

TF-IDF (Term Frequency - Inverse Document Frequency) aims to evaluate the importance of words in text (in word count). High weight is defined as the frequency of appearing that word in the text more but appearing less in other documents, so the word is characteristic of the text. Tf-idf is also used to filter stopwords words in problems like text summaries.

TF-IDF of a word is calculated as follows:

$$tf(t, d) = \frac{f(t, d)}{\max\{f(w, d) : w \in d\}}$$

$tf(t, d)$: the frequency of word t in the text d

$f(w, d)$: Occurrences of word w in the text d

$\max(\{f(w, d) : w \in d\})$: Occurrences of word with the most number of occurrences in the document d

$$idf(t, D) = \log \frac{|D|}{|\{d \in D : t \in d\}|}$$

Where:

$idf(t, D)$: idf value of the word t in text set

$|D|$: Total number of text in D

$|\{d \in D : t \in d\}|$: the number of document in set D that contains the word t

$$TF_IDF(t, d, D) = tf(t, d) \times idf(t, D)$$

2.2 Sentiment Analysis

Sentiment analysis is to detect long-term attitudes, emotional colors, and tendency to believe in objects or someone.

Sentiment analysis problem is the form of text semantic analysis problem. Therefore, we need to build a model to understand the meaning of a sentence or paragraph to decide which sentence or paragraph has the main emotional color.

According to the perspective of machine learning, emotional analysis is a problem of classifying emotions based on natural language text. The input of the problem is a sentence or piece of text, and the output is the probability values (the scores) of the N emotional classes that we need to determine.

Sentiment analysis can be approached follow

Method based on the dictionary of expressive emotion words: accordingly, emotional prediction is based on finding individual emotional words, determining score for positive words, determining score for negative words and then aggregating these scores against a certain measure to decide what emotional color the text colors.

The method of combining Rule-bases (based on rules) and Corpus-bases (based on data): the method based on rules stored in the form of tree banks to determine the nuance of the text based on parsing. This method requires expert knowledge

Deep Learning Neural Network: using LSTM deep learning models combined with text vectorization model (Word2Vector), this method gives high accuracy but requires large input data and the language need supporting word2vector method.

In Our research, we overcome the challenge of limiting the size of the data set, and the Vietnamese language, I use traditional machine learning approach combined with natural language processing methods.

At that time, we use the processing language methods and co- occurrence graph to evaluate keywords in text; Step 2 modeling the keyword set of text into vector for the classifier.

3 PROPOSAL RESEARCH FRAMEWORK

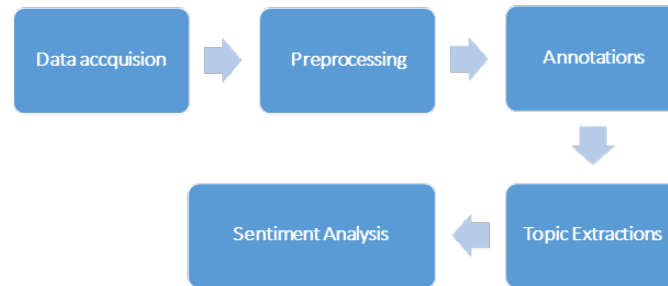


Figure 1 Diagram of Proposal Research Framework

- Dataset includes the posts and comments and use a reaction .We collected them on the university Facebook confession pages by using Nvivo software developed by QSR International.

- Below is a table of dataset that we have collected.

Table 1 Confession collection statistics

Pages	Link	From	To	Post number
HVTC Confessions	https://www.fb.com/hvtccconfessions/	24/07/2018	25/08/2019	850
NEU Confessions	https://www.fb.com/neuconfessions.vn/	15/04/2017	30/11/2019	876
HUST Confessions	https://www.fb.com/hustconfession/	26/04/2019	1/1/2020	450
FU Hòa Lạc Confessions	https://www.fb.com/FUHLConfessions/	15/08/2016	27/12/2019	1085
RMIT Confessions	https://www.fb.com/rmitvnconf/	15/02/2019	28/12/2019	699

In this research, we **focus on analysis the AOF Confessions**, each post has **300 words long on average**. Collected data will be save excel file for processing.

Preprocessing: to eliminate noise includes the following steps: remove too short and lack information posts; convert all capital letters to lowercase, use teencode dictionary to remove abbreviations and emotions in posts.

Annotation: based on studies on the use of social networks of Vietnamese students and surveys of students sharing on social networks, we build up a user annotation guideline to guide participants to assign Data labels are agreed. There are 2 labels that need to be assigned: the topic label (**Topics:** 1) Student life and society 2) Work and study 3) Romance 4) # N / A (topic cannot be identified theme). And the label about emotions (positive; negative and nature).

Keyword Extractions: language models are applied to come up with the list of keywords and word importance level, corresponding to the following processing steps:

1. Use Vietnamese Underthesea library¹ to perform the steps of separating and labeling type word (POS) and retaining only meaningful lattice words: Verbs; Adjective; Nouns and text terms

2. Create a TF-IDF matrix for each Term in corpus and remove the term

¹ <https://pypi.org/project/underthesea/1.1.2/>

3. Constructing Co-occurrence graph for corpus chart and using page ranks algorithm to determine keywords for each post and for all corpus.

Topic detection: According to modeling, topic of a text (1 corpus) is the set n - keyword representing the text. So the topic of a post is considered as the n-keywords representing the text. The topic for discussion of the community is the n-keyworks that is specific to all posts in confession. Due to define the topic for each post or topic for the community, we choose top -K keyword with the highest weight.

Post sentiment Analysis: Build and evaluate a model that automatically recognizes emotions based on content. That means when we put the content of a post confession, the system automatically assigns the positive, normal, negative labels

Feature Selection: As previous subsection, each post is presented by a set of keywords and mentioned as its content. We model each post as numerical n dimensions vector where n is the number of keyword in the corpus according to the expression:

In that each post D is presented as $X_D = \{x_1^D, x_2^D, \dots, x_n^D\}$

$$x_i^D = \begin{cases} 0 & \text{if } Word_i \text{ is not in set of keyword in document } D \\ PAGERANK_{word_i}^D & \text{if } Word_i \text{ is in set of keywords in document } D \end{cases}$$

Feature extraction: Due to a huge value zero in Post vector, that is caused to reduce the accuracy of classification models, it is necessary to reduce the dimensions data. And we applied the Sklearn library to reduce the data dimensions from 10587 to 2417 features.

Train and validation sets construction: Use K-Fold and Sklearn to divide the data into 2 groups of train and test for a total of 850 posts confessions, where:

- + The train group accounts for 90% (765 posts)
- + The test group accounts for 10% (85 posts)

Step 4: Applying the light GBM library to building training, and evaluating the classification model and estimating the results LightGBM is a Framework to processing the algorithm (Gradient Boosting) developed by Microsoft.

4. RESULTS AND DISCUSSIONS

4.1 Results identify topics of community interest

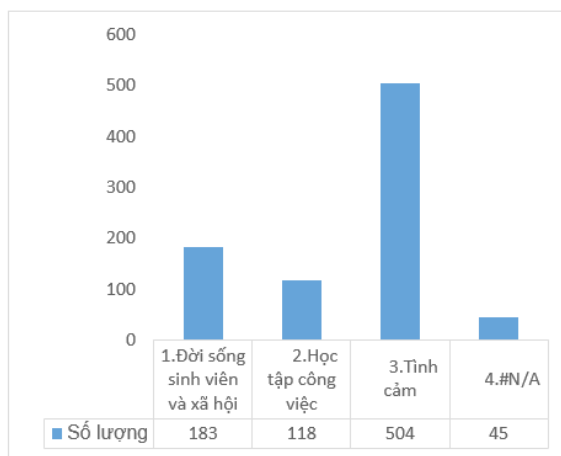
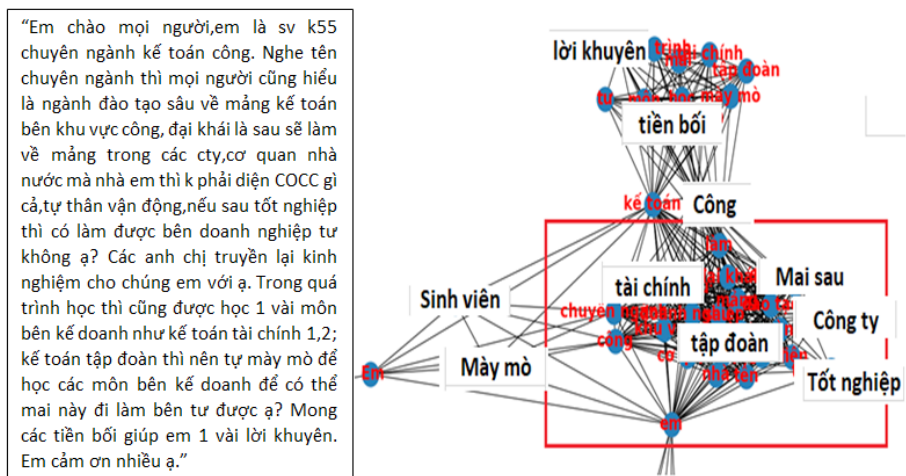


Figure 2 Statistic of post according to topic categories

The bar chart illustrates the statistics of post confession according to topic groups. Overall most of the post confession focuses on the topic of love (accounting for 59% of the number of posts), showing the topic of love is always an issue of students of Academy of Finance. It also suitable for previous studies on student psychology and student life. Then student life issues are discussed with more than 183 posts and studying issues are following.

To specifically identify the issues that Academy of Finance students are interested in, the topic detection model is applied to each post; each subject group and the entire confessions



VNese Keywords	Lời khuyên	Sinh viên	Công	Tài chính	Mai sau	Tiền bối	Tập đoàn	Công ty	Mày mò	Tốt nghiệp
Traslation	Advices	Student	public	Finance	Later	Senior	Corporation	Company	Self-study	Graduating
page rank	-3.8	-3.9	-4.9	-9.0	-11.4	-14.6	-15.5	-18.7	-21.0	-30.4

Figure 3 Case study topic extraction for specific post

For example from original confession post that is mentioned the confused about public Accounting major. The algorithm will construct the co-occurrence graph that represents the context of post (figure...) and the Page Rank algorithms are applied to identify the weight of each keywords. We assign k- top keywords (k=10) for Topic post. As a result a topic of post will present of 10 keywords that are showed in the table ...

4.2 Analyzing content for specific topics

Similar to the whole confessions, we divided the confessions into three groups of subject and defined the set of keywords representing each confession group and the result gave 20 keywords for each group of topics.

Table 2 Key words list that represent for each category post

1.Student life	2. Working and studying	3.Emotion
Private	Depth	Dear
Dormitory	Really	Past
Fly	Huge	Lover
Sure	Skills	Friend
Return	inferiority	Cancel
Landfills	Sales	Make friend

Night	Education	Ignored
Shock	graduating	nature
Vacation	distraction	hide
Furniture	D	follow
Personal	teaching	family
Use	environment	Lover
Word	General	housewife
Careful	Job	Before
Toward	when	procrastination
Given	synonymous	persistence
aspiration	achievements	Clothes
Tuition	Job	wash
Age	awareness	drinking

With the social life group: from key words we realize that Academy of Finance students will be interested in major topics including: student quality of life, financial issues

With the work group, through keywords, we highlight issues of concern that are related to learning knowledge, skills at school, and the concerns about future career opportunities. These are also current issues that are referring in seminars about job.

With the love group, this is the group with the most active discussion, it shows complex psychological developments and a very high need to share. From the most discussed keywords, we can see many aspects of love. Love is given and created community’s interest such as: friendship and love, love and family, love and life, etc. From this analysis, it shows that the Academy of Finance needs to have measures to orientate emotional and psychological issues of students with the aim at a good student life and psychological comfort.

In short, the topic model partly reflects the problems related to Academy of Finance students.

4.3 Students Sentiment Analysis result

Analyzing students attitudes of Academy of Finance represented through confession, we built a sentiment Analysis model to automatically evaluate the sentiment of each post. The sentiment identity model is based on a supervised machine learning model from the labeled data through the LightGBM framework. To evaluate the model I use the F-measure scale which the calculation is shown through the article . The results we get the accuracy with the validation test set are as follows:

Table 3 F- measure for sentiment Analysis

Fold	1	2	3	4	5	6	7	8	9	10
F-score (%)	51,92	50,17	54,33	51,94	52,22	53,71	51,11	55,12	53,51	51,11

Average: 52,51%

Comments: Although the result obtained is 52.51% is not high compared to sentiment problems with social network data, however, with confession problem this result is “acceptable”. Due to limited data collection and labeling resources, this can be improved when analyzing many other confession pages.

CONCLUSIONS

In Vietnamese culture in particular and East Asian countries in general, the anonymous disclosure is very frequent. Therefore, confession pages can be known as a place for individuals to express an individual's views, thoughts and aspirations to the community. Then people can be better understand each others feel and share to help each others. Therefore, the data mining on social networks, especially on confession sites, is currently not only scientific but also social and human.

This research is based on content analysis of a confession of a specific community to provide research direction and analyze content on social networks through language processing tools. Community will need to consider among the topics that need to be addressed through topic analysis problem. And analyze the sentiment to recognize the reactions and attitudes of the community. Although the research results are limited, it also opens up a potential research direction for social networks of the student community in particular and the community of Asian countries in general.

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CLIMATE CHANGE AND SALT CONTAMINATION IN THE MEKONG DELTA

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Pham Dao Thuy Linh - CQ 56/32.03

Problem defined: *With an area of about 4 million hectares, the Mekong Delta is one of the most fertile deltas in the world with natural and soil conditions that are extremely favorable for agricultural development. "According to the World Bank, the Mekong Delta is a large rice production area, accounting for about 20% of global commercial rice, contributing to food security in Asia, Africa and Latin America. However, the Mekong Delta region is currently heavily affected by climate change. Without the right solution, it is forecasted that by 2100, rise in sea level will cause salt contamination for about 40% of the area, affecting the livelihoods of 55% of the population here and possibly affecting global food security" [1]. Therefore, studying the impacts of climate change on the livelihoods in the Mekong Delta is necessary to find effective solutions.*

Abstract: *Currently, the situation of climate change and natural disasters continues to evolve rapidly and unpredictably due to the volatility and radicalism among other challenges. In the long term, climate change will affect all aspects of life such as health, livelihood in general and the sustainable economic development of the Mekong Delta. The impacts of climate change is great, but the article only studies the current state of salt contamination and solutions to cope with salt contamination on the Mekong Delta economy.*

Key words: Climate change, salt contamination, Mekong Delta

1. Climate change and salt contamination in the Mekong Delta

According to the Ministry of Natural Resources and Environment: *"Climate change is the change in the state of the climate relative to the average and/or the fluctuation of the climate maintained over a long period, usually decades or longer. Climate change can be caused by internal or external impacts, or by human activities that change the composition of the atmosphere or in the exploitation of land"*.

Climate change has seriously affected production and business activities, is the biggest challenge to the sustainable economic development of the Mekong Delta in the present as well as in the long term. Under the impact of climate change, drought and sea level rise have made salt contamination in this area more and more serious.

- In terms of time: salt contamination tends to appear earlier. Before 2012, salt contamination often starts from February to April with the salt contamination peak at the end of March due to the driest currents and the strongest winds. In recent years, salt contamination usually appears from the end of December of the previous year and peaks in late February and early March. Thus, salt contamination not only appears earlier but also lasts longer from 1 month to 1,5 months.

- Regarding the degree of salt contamination: According to the report of the Ministry of Agriculture and Rural Development, after 2 years of implementation of the Government’s Resolution 120/NQ-CP dated 17th November, 2017 on “Sustainable development of the Mekong Delta adapting to climate change”, at a conference organized by the Ministry of Natural Resources and Environment on 18th June, 2019: before 2012, the rank 4g/l salt contamination only penetrates about 35-45km, the deepest record is 60km; from 2012 to now, the salt contamination often goes deeper (from 50-60 km). In 2016, salt contamination was up to 90km (Illustrated in Figures 1.1 and 1.2).

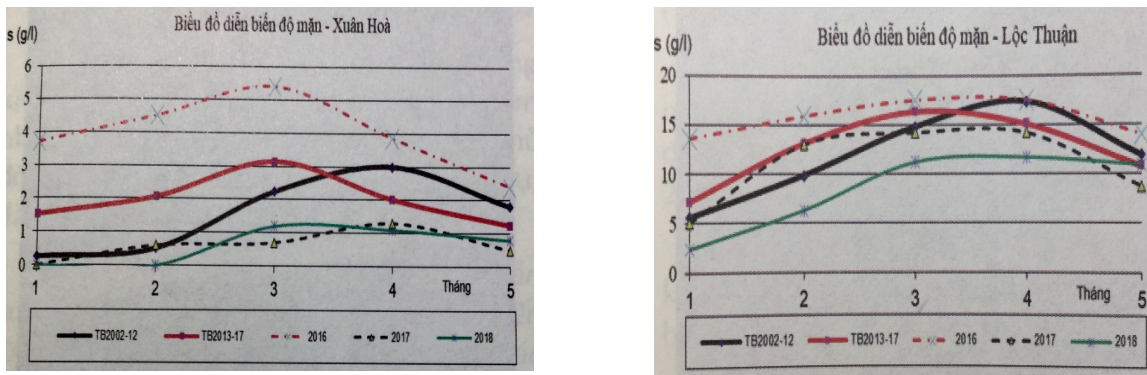


Figure 1.1 Salt contamination changes at the pilot station on Cua Tieu and Cua Dai rivers in 2012 compared to the past

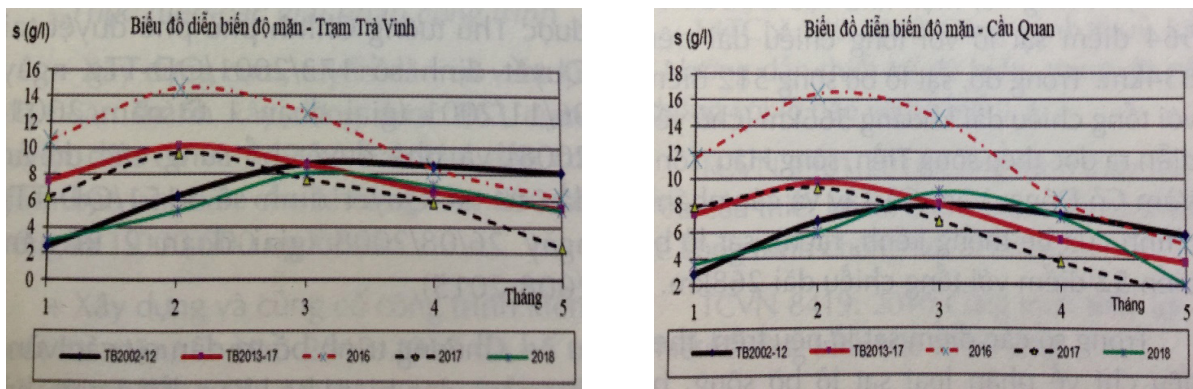
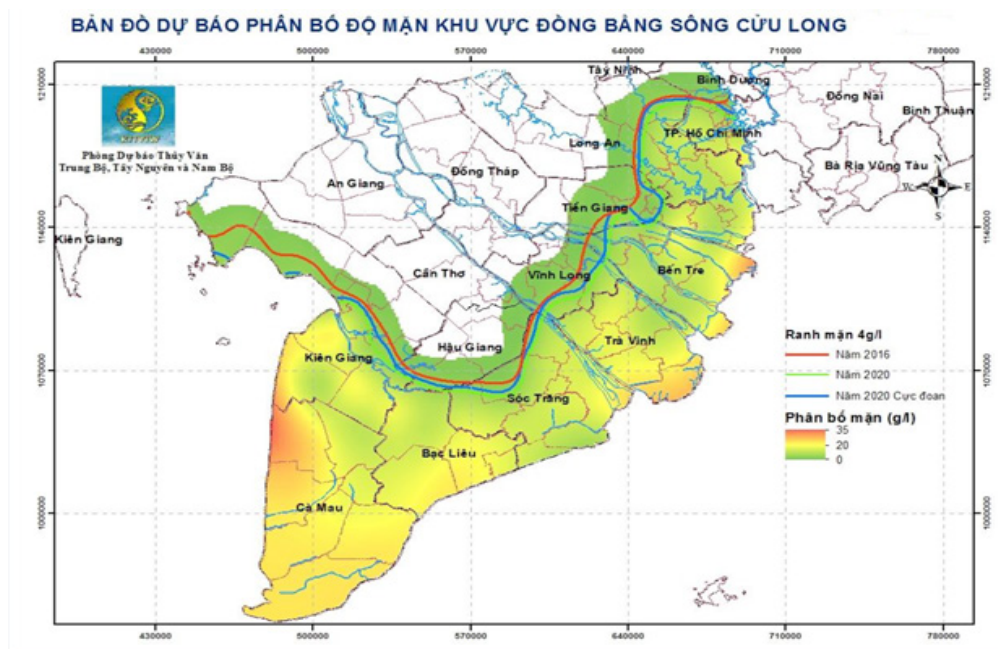


Figure 1.2 Salt contamination changes at the pilot station on Co Chien and Hau rivers in 2012 compared to the past [2]

(Source: The Ministry of Agriculture and Rural Development June 2019)

This has resulted in a series of water gates for agriculture, which were previously built 35 - 50km away from the river gate, unable to obtain fresh water. At the same time, these gates are built using automatic valve mechanism that opens and closes according to the upstream/downstream water level difference, which has a great impact on the active operation.

We can refer to the evolution of salt contamination from 2016 to present through the following map:



(Source: National Center for Hydrometeorology Forecast [5])

2. Economic impacts of salt contamination

Increased contamination has significantly affected the production and business activities of a number of industries in the Mekong Delta. To be specific:

Agricultural production

For fisheries, the increase in sea level and inundation leads to the loss of suitable habitats for some freshwater aquatic species; existing mangroves are narrowed, affecting the habitats of some aquatic species. The ability of the seaweed ecosystem to immobilize organic matter decreases resulting in a reduced supply of photosynthetic products and nutrients to the benthic. Therefore, the quality of the habitat of aquatic species is affected in a bad way.

In farming and ranching, the Mekong Delta has a low terrain, not highly embellished due to a sharp decrease in alluvial content, and a very high risk of submerging. Salt contamination threatens to shrink agricultural land. A significant portion of agricultural land in the lowlands of the Mekong Delta is inundated by sea level rise. At the same time, the risk of acid sulfate soil is increasing.

Sea level rise aggravates flooding in the rainy season, and drought and salt contamination in the dry season, increases inundation area, and salt contamination of water sources greatly affects agricultural production.

Forestry

Sea level rise reduces the existing mangrove area, adversely impacting natural and planted forests on acid sulfate soils in the Mekong Delta. The boundary of primary forest as well as secondary forest can be changed. Dipterocarp forest expands to the North and higher, deciduous forest with many drought-tolerant trees thrive.

Climate change reduces the forest land and forest area. The area of coastal mangroves suffers huge losses due to sea level rise; change the forest structure; degradation of forest quality; significantly developing new and more damaging pests or diseases. Desertification processes

seriously impair the quality of the soil. The moisture level has decreased causing a loss of biomass in most forest types, especially production forests. The populations of rare and precious forest fauna and flora declines to the point of exhaustion leading to the danger of extinction.

Tourism

Climate change has a direct impact on tourism activities and indirectly through negative impacts on other sectors.

Sea level rise affects coastal beaches, some may disappear, others are pushed deep inland, affecting the exploitation, damaging cultural heritage buildings, ecotourism sites; lowland coastal golf courses and other related infrastructure can be flooded, moved or stalled, increasing costs for reclamation, relocation and maintenance. The situation of landslide and salt contamination is increasingly complicated and affects on a large scale. In the past few years, the typical floating water season of Western tourism has also disappeared. Tourists will be taken to places that have been and are being strongly affected by climate change such as landslide, loss of protective forests in Thanh Phu district; lack of water for domestic use in Lach market, districts of Ba Tri, Binh Dai. Thus, the safety as well as quality of service for tourists is at high risk of decline.

3. Responding to salt contamination in the Mekong Delta

Facing the increasing impacts of salt contamination in the Mekong Delta, it is imperative that we take the initiative to “Live with salt contamination”. To do this, we need a system of comprehensive and specific solutions as following:

3.1 Solution from the Government

Circulars and directives should be issued guiding the effective implementation of Resolution 120/NQ-CP on sustainable development of the Mekong Delta in response to climate change on November 17, 2017.

In order for the Prime Minister’s Resolution 120/NQ-CP on the sustainable development of the Mekong Delta to adapt to climate change, issued on November 17, 2017, it is indispensable to have effective guiding documents. The guiding documents should focus on the following main contents:

There is an investment policy for the structural transformation of the entire Mekong Delta, not for each province separately. In which, there should be policies to prioritize investment in developing more infrastructure.

Especially, it is necessary to have solutions to improve the capacity of forecasting and warning in the short and long term on the impact of salt contamination in order to help localities adjust, especially for agricultural and forestry production, as well as more efficient tourism development.

Closely coordinate with the International Mekong River Commission, fully exchange information on reservoir operation with countries in the upper Mekong region. To upgrade and modernize the hydro-meteorological monitoring, forecasting and warning system for better natural disaster prevention and salt water intrusion prevention in particular.

Promote scientific research and technology application; promote the formation of high-tech development and reception centers. Develop a Science and Technology program for an overall study of long-term climate change adaptation in the Mekong Delta region.

Improve business environment to promote production, reduce costs, improve capacity to respond to climate change.

There are policies to encourage localities to actively spend their budgets responding to climate change as a special expense. At the same time looking for resources to establish the Mekong Delta Development Fund to be more active in investment capital.

Strengthen international cooperation, establish new cooperation frameworks in the field of climate change to promote the investment support of investors in developed countries for sustainable economic development in the Mekong Delta.

3.2. Solutions from the Mekong Delta provinces

On the basis of the overall national development policy, the local authorities of the provinces in the Mekong Delta should actively plan and organize more effective implementation of the construction and strengthening of the flood control, effective loan imbursement of the World Bank, the Government of Japan, Government bonds, the State budget and other sources.

It is necessary to build a system of synchronous and comprehensive solutions. Specifically:

- *For agricultural production:* On the basis of regional and sub-region planning, redefine the area of rice production and other crops with a more reasonable area for aquaculture. Areas that are frequently affected by salt water should actively rotate between rice and shrimp farming.

Agricultural production should be reorganized in the direction of large-scale production. There are solutions to encourage small producers to cooperate in production to have enough power to effectively cope with the penetration. At the present, these policies have not been enough and have not made big breakthroughs.

- *For fresh water sources:* Need to invest in infrastructure to provide fresh water for daily life as well as production. In the context of climate change and in particular increasing salt contamination, the demand for fresh water is increasing. Therefore, it is necessary to have a specific roadmap to replace the exploitation of groundwater resources (one of the causes for landslides). Construction of water reservoirs in suitable areas during the rainy season. Encourage locals to store rainwater at household scale is the solution that should be done immediately. In the long term, it is necessary to deploy fresh water supply systems to the Mekong Delta provinces from the water sources of the Hau River. With fresh water for production, it is necessary to survey to build a more proactive system of regulating, supplying fresh water and salty water for production.

- *For production infrastructure:* Infrastructure for production includes irrigation systems, road traffic, and waterways. On the basis of the national master plan, local authorities need to identify specific investment projects, prioritize in accordance with the overall orientation and balance of resources.

For traffic, it is necessary to focus on investment in developing waterways rather than roads. Because, this is the strength of the Mekong Delta region with a dense network of canals.

For irrigation infrastructure, on the basis of the master plan of the Ministry of Agriculture and Rural Development, provinces actively re-plan irrigation systems to better serve agricultural production in the coastal areas of Mekong Delta region.

- *For tourism:* Developing ecotourism on the basis of agricultural ecosystem development as a foundation for tourism development associated with mangrove protection and development. Attract

investment to develop support services. Vocational training for tourism services, contributing to sustainable job change for rural workers.

- *For forestry*: To consider forest restoration and development, especially mangroves, to be a key task and a prerequisite for the sustainable development of the whole region. Effectively combine the development of Melaleuca and mangrove forests with the development of livelihoods from forests, especially the ecosystem under the forest canopy and ecotourism development.

- *It is necessary to develop a plan to properly restructure the development of industries* in the direction of increasing tourism development, especially marine tourism, reducing agricultural production in areas with heavy salt contamination.

3.3 Strengthen communication activities

To effectively implement the above solutions, the communication to raise awareness of all levels and levels about climate change and respond to climate change in the Mekong Delta region is the solution. To do this, it is necessary to develop and organize an effective communication program on prevention and mitigation of risks caused by climate change, the impact of salt contamination on people's lives, as well as sustainable economic development of the region. Because we want to live with salt contamination, we must understand it fully.

Conclusion: Climate change is a big problem and a global issue. Responding to climate change in general and salt contamination in particular requires the cooperation of governments as well as of global effort. Salt contamination adversely affects all aspects of socio-economic life. In particular, it has a significant impact on the development of agriculture - forestry production as well as tourism and other industries. Therefore, to develop sustainably the Mekong Delta region requires Vietnam to have a system of solutions from central to local as well as from the local of this region.

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RESEARCH OF PERSONALISATION IN ONLINE SHOPPING: LITERATURE REVIEW AND RESEARCH MODEL

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ABSTRACT: *This paper studies personalisation at scale in the field of ecommerce, which has changed constantly in recent years due to the advancement of technology. The main purpose of this research was to explore the attitudes of five personality traits toward proactive and reactive mechanisms of personalisation in the field of online shopping. Additionally, the potential mediation effect of personalisation mechanism on purchase intention of different personality traits was also expected. In sum, personalisation, especially the new proactive personalisation with predictive ability, is future of marketing.*

Key words: *personalisation, ecommerce, online shopping, five personality traits*

INTRODUCTION

Due to the increasing diversity of buying options from a variety of sellers, it has become more and more challenging for brands to convince customers to choose and stick to their products or services (McShane *et al.*, 2017). Such intense competition on the market urges companies to adjust their marketing approach. The questions “How to sell?” or “How to increase sales?” are no longer exist; instead, businesses should pay attention to creating value to satisfy customers’ needs and enhance customers engagement to the brands (Kotler and Armstrong 2017). As an emerging trend in recent years, personalisation has proven itself as an effective strategy for the customer-centric marketing orientation (Davis 2019). Also known as one-to-one marketing, personalisation refers to “the implementation of a strategy by which companies deliver individualized content to recipients through data collection, analysis, and the use of automation technology” (Emarsys 2017).

In this digital and technological era, the rising of smart devices such as laptops, smartphones and tablets, and wearable devices like smartwatches has completely changed the retailing industry. Online shopping has increased significantly as a result. Focusing on e-commerce environment, this study evaluates the attitude of different personalities toward two mechanisms: Reactive personalisation and Proactive personalisation (Zhang and Sundar 2019). The Big Five personality traits model (Costa and McCrae 1992) is used to reflect how each individual is associated with these methods of personalisation. The main focus of this research is to address the following research question:

How do different personality traits react to different personalisation mechanisms?

How do different personalisation mechanisms affect the purchase intention of different personality traits.

LITERATURE REVIEW AND RESEARCH MODEL

Personalisation in marketing was derived from the idea of customer-focused approach based on customer preference. Before becoming a phenomenon in marketing these days, the art of personalisation has been adopted and mastered by luxury brands with their tailored design items, buying experience and customer care (Tungate 2009). But those high-end commodities are not for the majority. In fact, not only the wealthy, but each individual, no matter from what social class or income, also prefers and is more likely to be persuaded by the experience uniquely designed for them (Walters 2015). That is why marketers are trying is to adapt the personalised strategy from luxury brands and apply it to the mass customers.

Personalisation in modern marketing is separated from customisation. Although both personalisation and customisation aim to create a tailored experience to match a single user's needs or interests, the approaches of each method are different. Personalisation is achieved when companies tailor their products or services customer preferences, based on collecting data and observing previous behaviours of online users; customisation, on the other hand, is achieved when a user manually specifies the changes should be made for his/her preferred experience (Sundar and Marathe 2010). Personalisation allows brands to deliver the right products to the right people, at the right time, while customisation focuses on manufacturing, customising products and services to fulfil the needs of specific customer groups. Because of these superiorities, personalisation can be seen as smarter but requires far more subtlety and strategic thinking than customisation.

Reactive Personalisation and Proactive Personalisation

Reactive personalisation is generated from users' explicit requests for personalised suggestions, it captures already existing knowledge about consumer's preferences and display these preferences back to them without any new insights or potential offerings (Tuzhilin 2009). Customers are the ones who provide information on their preferences and activate the personalisation option. The system will not expose any recommendation until the users start the search for an item. Customers still get the tailored experience based on their background, preceding actions as well as the selected search criteria (such as price range, category, colour, size) and their feedback on similar items (Zhang and Sundar 2019).

Proactive personalisation refers to the prediction of customers' needs or tastes based on analysing user preferences and online actions (Zhang and Sundar 2019). The personalised content will proactively, automatically display or will be sent at the optimal time for an individual. This mechanism of personalisation mainly depends on collecting passive digital footprint, which involves synthesizing user data, implicit feedbacks and observing user behaviours (Chen and Sundar 2018). Rather than requiring user interaction to generate personalised requests, the system studies customer needs and interest, then suggests the tailored offers or recommendations at an appropriate moment or at the right time when needs arise. Further, the system can predict the products or services that customers might be interested in, although they might not even realize whether they actually need those or not. In fact, while reactive personalisation has become quite

popular and many companies have been able to employ it; proactive personalisation with the distinctive ‘predictive feature’, has newly arisen, and only few brands are moving to it (Jha 2019). Take Starbucks for example, by proactively recording users’ data including their favourite coffee, their most frequently purchasing timeframe, and even their location, the Starbucks application automatically updates individualised recommendations and offers, or display a notification inviting customers to visit the store if they are close to any Starbucks’ location (Taylor 2016). In the field of music streaming, Spotify has become the most popular subscription service (Statista 2020) thanks to its predictive personalisation. In sum, reactive personalisation brings less privacy concern while proactive provides better personalised experience. However, to choose between enjoying tailored buying experience and controlling personal information privacy, it depends on individual personality.

Big Five personality traits

Consumer personality has been proven to influence on buying behaviour (Aydin, 2018). People with different personalities would have different motivations to shop and different barriers to their buying enjoyment (Goldsmith, 2016). In this thesis, the big-five model was used to study perspectives of different personalities on proactive and reactive personalisation.

The big-five model, which characterizes a human in terms of thoughts, feelings, and actions, is recognized as the Standard paradigm in research about the personality and trait theory (Tuu 2017). The model consists of five dimensions to describe personality: neuroticism, conscientiousness, agreeableness, extraversion, and openness.

Neuroticism is related to negative emotions such as anxiety, irritability, psychological depression, fear and instability (Costa and McCrae 1992). High scores on neuroticism are “defensive response” to threat (DeYoung 2015) and more sensitive to hazardous situations (Chauvin *et al.*, 2007), which means the neuroticism might be more worried about their personal data being revealed to a party/organisation without their awareness. Despite that, neuroticism is also described as being unstable, easily affected by environment stimuli (Swickert *et al.*, 2010), as the results, this trait has been found to be positively correlated impulsive buying (Shahjehan and Saifullah 2012). Thus, personalisation, in whichever mechanism, as long as it provides valuable offers in a sophisticated delivery method, can positively trigger neurotic consumers.

Conscientiousness refers to self-discipline, ethical behaviour, dependability and precaution (Costa and McCrae 1992). Further, consumers with conscientiousness characteristic express the high tendency of future-oriented, which means they focus more on long term goals rather than short term temptation (DeYoung 2015), hence predictive personalisation with various appealing offers might not attract them. Not only that, due to the cautious characteristic, conscientiousness individuals are more likely to avoid risky situations. Those who get high score on conscientiousness would consider privacy invasion as unethical and perilous, hence, they might be against data collection without consent and advocate information security measures.

Anyway, if they are provided with a privacy-safe solution, or at least they can have control over how information is handled, worry about data security might be mitigated (Sutanto *et al.*, 2013). That is the reason to expect that, conscientiousness is positively associated with Reactive personalisation.

Agreeableness reflects to an individual's level of empathy, trusting, generosity, and flexibility (Costa and McCrae 1992). Generally, agreeableness relates to positive emotions; thus, agreeable people have the tendency to experience affective attributes more positively. Guido *et al.* (2015) specifies the positive connection between agreeableness and hedonic shopping values, which suggests that the agreeableness might enjoy the tailored service and convenient shopping journey.

Nevertheless, individuals having high score in agreeableness appreciate proper social behaviours and avoid deviant actions (Chauvin *et al.*, 2007). They might consider companies' data harvesting without users' consent, for whatever purposes, as an inappropriate activity.

Extraversion involves venturesome affiliation, positive affectivity, optimism, ambition, sociability, activity, and excitement-seeking (Costa and McCrae 1992). Due to these characteristics, the extraversion individuals yearn for exploring new experiences and seeking reward. With regard to privacy concern, extraversion has been tested as being negatively associated with privacy concern (Bansal *et al.*, 2016); and on the other hand, this trait has been proven to be positively associated with impulse purchasing (Badgaiyan and Verma 2014). The extraversion, thus, can be willing to embrace both personalisation mechanisms, as long as he/she finds them beneficial.

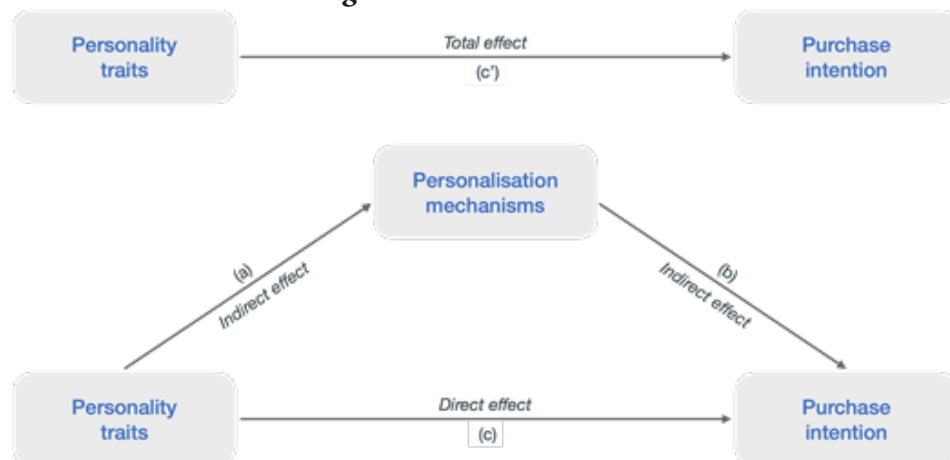
Openness characterized the tendency of curiosity, creativity, innovation and receptivity to new ideas. Thus, customers with dominant trait of openness are more curious about new experiences and tent to quickly adopt new trends or products. Badgaiyan and Verma (2014) indicated that such individuals are likely to be more impulsive in buying behaviour. Hence it is proposed that:

Mediating role of personalisation mechanisms

Purchase intention is the indicator that is widely investigated in business and marketing research (e.g. Pappas, 2018; Martins *et al.*, 2019), because after all, one of the main purposes of marketing is to generate profit by driving consumer's willingness to buy. Previous studies found the positive impact of personalisation on purchase intention (e.g. Bues *et al.*, 2017; Li & Liu, 2017). Besides, association between personality traits and buying behaviour was also investigated (e.g. Bosnjak *et al.*, 2007; Goldsmith, 2016). Therefore, this research would examine whether personalisation mechanisms affect purchase intention of different personalities based on mediation model; in other words, exploring the potential mediating role of different personalisation mechanisms in the relationship between personality traits and purchase intention.

According to Baron and Kenny's (1986) mediation model, there are three conditions should be established: (1) the independent variable must significantly influence the mediator; (2) the independent variable must significantly influence the dependent variable; (3) the mediator must significantly influence the dependent variable (Baron and Kenny 1986). The model for mediation effect of this study is described as below:

Figure 1: Mediation model



The conceptual framework is developed as below:

Figure 2: Conceptual framework

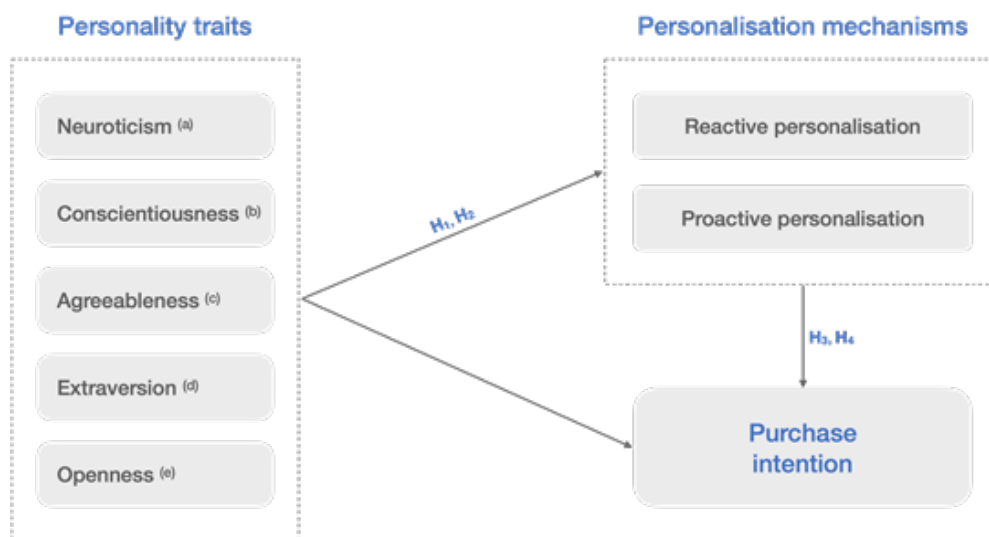


Table 1: Summary of hypotheses in the research

H1_{n,b,c,d,e}	Neuroticism, Conscientiousness, Agreeableness, Extraversion, Openness positively reacts to Reactive personalisation.
H2_{n,d,e}	Neuroticism, Extraversion, Openness positively reacts to Proactive personalisation.
H2_{b,c}	Conscientiousness and Agreeableness negatively reacts to Proactive personalisation.
H3_{n,b,c,d,e}	Reactive personalisation mediates the relationship between Neuroticism, Conscientiousness, Agreeableness, Extraversion, Openness and Purchase intention.
H4_{n,b,c,d,e}	Proactive personalisation mediates the relationship between Neuroticism, Conscientiousness, Agreeableness, Extraversion, Openness and Purchase intention.

Aiming to investigate (1) whether online shoppers with different traits react differently with two personalisation mechanisms, and (2) whether reactive or proactive personalisation have more effects on buying intention of different personalities, positivism was chosen as the main philosophy for this research.

Positivism is one of the two classical philosophical schools of scientific research (Melnikovas 2018), the other is Interpretivism. Positivism reflects the view of studying consumers and marketing phenomena in natural sciences stance, using deductive reasoning for theory testing, while interpretivism is associated with inductive approach for theory building (Saunders *et al.*, 2019). If some theories exist, applying deductive reasoning would be most appropriate (Hinkin *et al.*, 1997). Thus, positivism philosophy with deductive approach is compatible with this research where existing theories about (1) big five personality traits and their buying behaviours, and (2) personalisation mechanisms and the choice between the benefits from individually tailored service and concerns about data privacy.

CONCLUSION

Personalisation is an inevitable part of the modern customer-centric marketing, it has become more and more popular and has evolved more and more sophisticatedly. From providing tailored experiences based on customers' intentional submission of information and preference (reactive personalisation), technology has enable the ability to collect data trails that internet user unintentionally reveal to establish the higher level of individualisation (proactive personalisation). Consumers value highly-personalised experience, but it often goes with higher concern about privacy. That is why this research looked into five representative personality traits (Costa and McCrae 1992) to explore how they would perceive reactive and proactive mechanisms of personalisation. Additionally, it examines the potential effect of each mechanism on the purchase intention of different personalities. A quantitative research in Vietnamese e-commerce industry using questionnaire survey method and statistical analysis via SEM was adopted. Despite not successful in supporting all proposed hypotheses, the findings still brought out meaningful insights.

In conclusion, personalisation, especially the new proactive personalisation with predictive ability, is future of marketing (Jha 2019). While in practice, this mechanism has started to seep into some leading firms for a couple of years; in academic field, there is not much literature about it. That is why further studying on this topic is necessary.

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FREE TRADE AGREEMENT – DRIVING FORCES AND CHALLENGES FOR VIETNAM’S ECONOMIC GROWTH AND SUSTAINABLE DEVELOPMENT

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Abstract: *Vietnam’s international economic integration through Free Trade Agreements (FTAs) that Vietnam has committed to trading partners on tariff reduction and market opening plays an important role in Vietnam’s rapid increase in export capacity, in the meantime it is also an effective factor in attracting investment for the economy. On that basis, growth in trade and investment has formed an important pillar for Vietnam’s rapid economic growth and sustainable development in recent years. In the coming time, integration through FTAs will continue to create great opportunities and will also create challenges for the Vietnamese economy in terms of mechanisms, policies and market development.*

Keywords: *Free trade agreement, FTA, trade and investment, sustainable, growth ...*

1. Introduction

In the period 2011-2020, the Vietnamese economy has entered a new stage of development - becoming a middle-income country and laying a basic foundation for fairly extensive integration into the regional and global economy. Thanks to export achievements, Vietnam’s average GDP growth has been as high as 6.5% in the past 10 years, as a result of a policy of proactive, aggressive expansion and strengthening of trade and investment by Vietnam. Since joining the WTO to deeper and broader economic integration through the Free Trade Agreements (FTAs) of Vietnam and its partners, the FTAs have affirmed their role as a flexible transmission tool, contribute to the process of reforming policies and mechanisms, bringing about high economic efficiency. In that context, integration through FTAs will continue to create great opportunities and will also create challenges for the Vietnamese economy.

2. The contents of Free Trade Agreements signed by Vietnam

Vietnam’s policy of multilateralization of international economic integration is concretized through 13 bilateral free trade agreements (FTAs), namely FTA with Japan, Korea, and Chile; expanded to include ASEAN regional FTA, ASEAN and partners such as Korea, Japan, China, Australia, New Zealand, India and Hong Kong; followed by FTA with trans-Pacific partners, the Eurasian Economic Union and the European Union has been signed and put into practice in the economy in recent years. Vietnam’s FTAs cover a wide range of areas, however, the most significant impact on the trade and investment economy must consider the commitment to reduce tariffs

on imports and exports of commodities, and commitments to financial services in the securities and insurance sectors.

3. Discussion

Through on-going FTAs, Vietnam's goods export market is expanded, and commitments to cut tariffs in FTAs make Vietnamese goods more competitive, which helps Vietnam's exports increase rapidly at a high rate over the past years, from an export of only 71.6 billion USD in 2007 to 263 billion USD in 2019, ranking 22 in the world. At the same time, the policy of diversifying the export market of goods of Vietnam associated with development policy orientation and production capacity has also been promoted. From the production and export of labor-intensive goods, the assembly and preliminary processing of raw materials were at a high level since the early 2000s. With the focus on vocational skills training of domestic workers enhanced, capital and technology resources of foreign investors poured into Vietnam during the years when Vietnam was more economically expanded, Vietnam's export capacity also improved, from the export of primary goods. processing such as agricultural and aquatic products, to export of assembled goods, secondary goods such as textiles, leather shoes, bags, suitcases, wooden products ... and so far export of valuable goods high growth rates such as electronics, telephones, computers ... to FTA partner markets of Vietnam account for a relatively large proportion. Thus, the benefits from the large market access brought by the FTAs have contributed to the motivation for developing export capacity by diversifying and upgrading the value of export goods. From the import of raw materials for production, to the export of secondary goods to other countries, to the export of finished goods from Vietnam demonstrates Vietnam's increasing participation in the global value chain. At the same time, the capacity to export goods with high value content is increasing, contributing more to economic growth and sustainable development in recent years.

As an economy with many resources for development including nature, geographic location, labor, institutional, policy and social stability, an open economy like Vietnam with various FTAs becomes very attractive for foreign investors. The majority of foreign direct investment in Vietnam comes from countries Vietnam has FTA with like South Korea, Japan, Singapore ... However, goods of FDI enterprises are not only exported back to investing countries but they also take advantage of preferences and tariff reductions of FTAs to export to other countries. Especially with the new FTAs signed and put into execution over the last 3 years as CPTPP and EVFTA, with a commitment to market opening abolished tariffs of up to 97-98% for imports from Vietnam of Trans-Pacific partner countries and the European Union, the greater export opportunities for Vietnamese goods, the greater the attraction of foreign direct investment. In 2019, Vietnam's exports to the EU and CPTPP partners including the United States account for over 50% of the total export value of Vietnam. Export market of Vietnam gradually shift the focus from the ASEAN countries, China, Korea and Japan to the new markets such as the EU and CPTPP, and this trend will continue to rise due to the attractive large wider tariff abolition preferences for Vietnam when EVFTA and CPTPP come into effect. With the 70% export capacity of Vietnam by FDI contribute the current shift in oriented export market of Vietnam can be found mainly due to export capacity and strategic decisions belong to foreign investors. With this positive potential, foreign direct investment in Vietnam continues to rise, reaching 38.02 billion US dollars in 2019, up 7.2% over the previous year and the highest level in the last 10 years.

Not has only a positive impact on foreign direct investment, but commitments in financial services related to investments in securities and insurance services in the FTAs also have a positive impact on indirect investment through the financial market. Implementing most of the FTAs on Vietnam's WTO securities services background commitment over the past 20 years has helped to create a stock market with developed financial services, product diversification, transparency, increase operational efficiency, competitiveness and market liquidity. The size of the stock market as of the end of September 2019 has increased significantly. The market has 744 shares and fund certificates on Hanoi and Ho Chi Minh City exchanges and 852 shares registered for trading on UPCOM with a total listed value of over 1,372 trillion VND. Total mobilization on the stock market is estimated at 225.5 trillion VND, up 13% over the same 9-month period of 2018. The insurance market has also grown with 64 insurance companies. Total insurance premium revenue is estimated at 126,771 billion VND, up 19.9% compared to the same 9 months of 2018. Total assets are estimated at 447,428 billion VND and invested back into the economy at 378,035 billion VND. Along with efforts to reform domestic policy mechanisms towards absorbing and transforming practices and standards within the scope of financial services commitments under the WTO / GATS Agreement, and application of management standards and prudent measures, especially the commitment to open more markets for insurance services also under the CPTPP and EVFTA Agreement did help Vietnam's financial services market increasingly attract investors and become an important capital channel for the economy. the obligation to enforce the standard management standards of the CPTPP and EVFTA Agreement constitutes a driving force and a challenge for regulators to innovate policies and management methods, and strengthen the market management capacity, keeping the stability of financial system in particular and the economy in general.

4. Policy implications

Extensive integration into the regional and world economy through FTAs has had a positive impact on Vietnam's exports and investment attraction, forming an important pillar of economic development in recent years. However, better using the rights and obligations committed in the FTAs is a major challenge for the regulator. The incentives to abolish tariffs on importing Vietnamese goods into the markets of the CPTPP or EVFTA countries can be utilized only if they meet high standards of origin, food safety and hygiene, environmental protection, labor standards, intellectual property ... With the lack of experience in these matters, letting Vietnamese goods be exported to those potential markets requires great efforts from manufacturers, exporters, and regulators in meeting the above-listed quality oriented and environmentally friendly standards. Therefore, the policy to attract foreign direct investment also needs to be adjusted toward attracting investment capital into projects with high technology content, less harm to the environment, labor training and responsibility to society. Besides, the opening of the financial market to increase the participation of capital investors in the market to serve the development needs of enterprises and the economy is necessary, however, risk management, prudent management measures to ensure the safety of the financial system, maintaining the health of the economy are also the top priorities. With these challenges, Vietnam can take full advantage of the benefits brought about by FTA, contributing to the rapid growth and sustainable development of the economy./.

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