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THE STUDY OF DETERMINANTS OF LISTED BANK SHARE PRICES IN VIETNAM'S SECURITY MARKET

DOCTOR OF PHILOSOPHY DISSERTATION IN ECONOMICS

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LIST OF RESEARCH WORK DISCLOSED BY THE AUTHOR

No	Contents
1	Nguyen Phu Ha (2021), "Impact of macroeconomics factors and interaction with institutional performance on Vietnamese bank share prices", *Journal of banks and bank system,* Volume 16(1), p. 127-137. Ranking Scopus (Q3)-Schimago. DOI: http://dx.doi.org/10.21511/bbs.16(1).2021.12
2	Nguyen Phu Ha (2020), "Effect of equity issues on stock prices: Case of largest commercial banks in Vietnam's stock markets", International Conference in *Contemporary issues in finance, banking and accounting for sustainable development*. Social Science Publishing House, ISBN: 978604-67-1458-3, p. 142-164.
3	Nguyen Phu Ha (2020), "Volatility of bank share prices in the nexus of credit institution restructuring", *Journal of institute for African and Middle East Studies,* ISSN-1809-0519, Issue 3(175), p. 50-57.
4	Nguyen Phu Ha (2021), "Behavior of individual investors: case of listed bank shares in Vietnam's stock market". National Conference in *Competency and behavior of individual investors in Vietnam's security market,* Science and Technics Publishing House, ISBN: 978-604-67-2109-3, p. 7-16
5	Phu Ha NGUYEN, Phi Hung NGUYEN, Jung Fa TSAI, Thanh Tam NGUYEN, Van Nguyen HO, Trong Khoi DAO (2020), "Determinants of share prices of listed companies operating in the steel industry: An Empirical Case from Vietnam", *The Journal of Asian Finance, Economics and Business,* Vol.7 No.12 pp.131-138. Ranking Scopus (Q3)-Schimago. DOI:https: //doi.org/10/13106/jafeb.2929.vol7.no12.131.
6	Tam Thanh Nguyen, Ha Phu Nguyen, Linh B.K Nguyen, Nam Thanh Vu, Thinh Ung Le, (2020), "The relationship between capital structure and firm value: Cases of Listed companies in the Food and Beverage industry in Vietnam", *Academy of Accounting and Financial Studies Journal*. ISSN: 1096-3685, Vol 24(1), 2020. Ranking: Scopus (Q4)-Schimago.

INTRODUCTION

1. Necessity of the study

Share price is one of the indices that gains a lot of interests by participants in the stock market. The behaviour of a share price, or a stock index is affected by a set of factors existing in the socio-economic environment. In association with advanced development in statistical science, related information and data are processed using multiple methods and programming, enabling researchers to interpret the reliability and validity of the relationship between stock price movements and their determinants.

Among the listed stocks, shares of joint-stock commercial banks, briefly referred as listed bank shares, are categorized into a key group because of the nature and sensitivity of banking. In Vietnam, listing of bank stock is both fully complied with current regulations of the State Securities Commission (SSC) and laws; and strictly followed regulations of the State Bank of Vietnam (SBV). Listed banks are also considered large issuers in terms of market capitalization. Among 19 listed bank shares in January 25, 2022, 10 out of 17 listed on HOSE are included into the 30 largest capitalization group (the VN30), while 1 out of 2 listed on HNX is included into the 30 largest capitalization group (the HNX30). In addition, 09 other bank shares are trading on UpCOM. The banking stocks accounted for 25.86% of the total market capitalization, equivalent to VND 5,510.27 billion (SSC, 2022).

The importance of bank stocks is reflected in the Prime Minister's Decision No. 242/QD-TTg dated February 28, 2019 on approval of national project to restructuring the stock market and insurance market by the year 2020 and orienting towards 2025. The scheme emphasizes that one of solutions to restructure the basis for financial products in Vietnam's security markets is "to bring all banks listed or trading in stock exchanges". This fact once again proves that listing or trading of banking shares on the stock market is objective, and it is supported by the Government's desire to promote the banking industry into a higher level.

Key factors affecting the share prices of banks include general factors (i.e., those arising from socio-macroeconomic environment and from the financial markets) and specific factors of banking operations. It is practical that behavior of bank share prices directly affects investors, issuers and determine the stability of the market in the long run, therefore, the study of the factors affecting the price of bank shares on the Vietnam's stock market is of importance. From these foundations, the dissertation entitled ***"The study of determinants of listed bank share prices in Vietnam's security market"*** is selected.

2. Objectives of the study
2.1. General objectives

Research on the factors affecting the share price of banks listed on the Vietnam stock market with aims to propose recommendations to stakeholders (i.e., individual investors, listed banks and relevant regulators) towards maintaining the stable development of Vietnam's stock market.

2.2. Specific objectives

Firs, construct a theoretical framework for factors affecting the price of bank shares listed on the stock market, and focusing on those belonged to macroeconomic environment, internal factors of listed banks, and market risk and return.

Second, assess the current situation about factors affecting the price behavior of bank shares listed on Vietnam's stock market.

Third, propose recommendations to support investors with better understandings of the factors affecting the price of bank shares listed on Vietnam's stock market; further recommend listed banks to harmonize interests of small shareholders and of dominant shareholders; and simultaneously suggest implications for State management agencies to maintain the stable growth of Vietnam's stock market.

3. Research questions

To achieve the above research objectives, the dissertation proposes three following research questions:

First, what factors affect share price behavior of banks listed on Vietnam's stock market?

Second, what are the size and magnitude of effects regarding to these factors on share prices of banks listed on Vietnam's stock market?

Third, what recommendations should be made to investors in order to help them with better understandings about stock price fluctuations, how to recommend to issuers to establish long term relationship by harmonizing the interests between them? and what implications should be made for management of the market in order to maintain the stable development of Vietnam's stock market?

4. Study subjects and scopes

4.1. Study subjects

The subjects of the study include the share prices of listed banks and the determinants of listed bank share prices on Vietnam's stock market.

4.2. Research scopes

Research contents: Research and evaluate the current situation of factors affecting the price fluctuations of bank shares listed on Vietnam's stock market. Because there are several ways to quote prices for stocks listed on stock exchanges, especially based on to the trading time, the author chooses the adjusted closing price of the common shares of the bank listed on HOSE and on HNX.

The reality shows that factors affecting prices of listed bank shares are broad and complicated, in this regard the dissertation would only focus on three groups of factors, including macroeconomic factors, banking operation factors, and risk and return factors of listed bank shares. Information and data related to these factors must be statistically collected from official sources, and be evaluated by qualitative and quantitative methods.

Research objects include individual investors, listed banks as issuers, and state management and regulatory agencies.

Time frame: The longitudinal data serves as inputs for multivariate regression model is collected in the period from Q1.2009 to Q4.2020 for a number of reasons. First, data of bank share before 2009 was very few because there were only 02 listed banking stocks on HOSE and HNX (i.e., ACB and STB). Second, Vietnam's financial markets have changed

dramatically since 2009 with the presence of more 17 banks listed on the stock market, and the banking industry has undergone dramatically restructuring period followed by Project 254. Besides, the roadmap to increase charter capital to strengthening competencies and international integration require banks implement additional offerings. This is also the period witnessing problems associated with post-global financial crisis, the SARS-CoV-2 pandemic and economic-political tension in Europe, China and the North America.

Research space: By the end of 2021, Vietnam has a total of 17 banks listed on HOSE and 02 banks listed on HNX. However, 03 have listed since Q4.2020, 02 listed in Q1.2021, and 01 listed in Q3.2021. These 05 banks' listing time is very short for quarterly panel data, so they are intentionally taken out of research sample. Therefore, 13 listed banks taken into the sample include: ACB; Vietcombank; BIDV; VietinBank; Eximbank; MBBank; Sacombank; VPBank; HDBank; SHB; NCB; Techcombank and TPBank.

5. New contribution of the study

5.1. Theoretical basis

Up to now, a great deal of research on factors affecting stock prices has been found abroad and in Vietnam, however, those at doctoral dissertation level are few. In particular, study of factors affecting the price of bank shares listed on Vietnam's stock market is fewer. The study systematized fundamental theories about stocks, behavior of stock price in general and features of bank share in particular. By reviewing a number of literatures on determinants of bank share prices, share price related modelling and theory for supply and demand, groups of factors applicable to the case for bank share are recognized, and they are actually deployed in the study. Therefore, constructing a theoretical framework for determinants of bank share prices is considered a contribution to existing literature.

With regard to adoption of quantitative approaches explored in Vietnam and abroad, the dissertation employed 07 representatives for macroeconomic environment, which include *GDP*, *CPI*, *Gold price*, industrial production index (*IIP*), *VnIbor*, *USD/VND* exchange rate (*FX*), money supply (*M2*); 02 representatives for market factors of bank share, which include *EPS* and *Beta;* and factors reflecting business performance of listed banks, which include *NPLs*, liabilities (*DebtC*), *Loan*, and *Equity*.

5.2. Practical basis

Research results withdrawn from the study can be a baseline, or a source of reference for investors, issuers and regulators because they provide not only a framework for this type of research, but also evidences on the reality of determinants of the listed bank share prices. Therefore, it can contribute to promoting the management policy for stable development of Vietnam's stock market.

6. Structure for the dissertation

In addition to the introduction, conclusion, list of references and appendices, the structure for the dissertation consists of 04 chapters as follows:

Chapter 1: Literature review and research methodology

Chapter 2: Theoretical and practical foundations for factors affecting share prices of joint stock commercial banks listed on the security market

Chapter 3: Current situation of factors affecting share prices of joint stock commercial banks listed on Vietnam's security market.

Chapter 4: Recommendations withdrawn from the study of determinants of share prices of joint-stock commercial banks listed on Vietnam's security market.

Chapter 1: LITERATURE REVIEW AND RESEARCH METHODOLOGY

1.1. LITERATURE REVIEW

An overview of 47 literatures in Vietnam, and 94 literatures abroad is classified into three categories, which include (i) research on factors affecting share prices, which is designed into 5 sub-groups; (ii) research on factors affecting bank share prices, which is divided into 3 sub-groups; (iii) research in Vietnam relating to bank share prices in general, and determinants of bank share prices in particular. Based on these foundations, research gap and major issues are figured out for continuous study in this dissertation.

Theoretical and practical values adopted from existing literature, and research gap

Theoretical and practical values adopted from existing literature

Based on the overview of domestic and foreign studies presented above, the dissertation consolidates indicators relating to measurement of share price fluctuation, 07 representative factors for macroeconomic environment, 2 factors representing risk-return of listed bank shares, and 04 factors representing for business performance of listed banks. Besides, behavior of individual investors associated with timing and decision to buy and sell shares is also taken into consideration. Especially, additional issuance of bank shares following the dividend policies and planning to charter capital expansion of the banks is also considered as the determinant for bank share prices. Research methods deployed by the dissertation include qualitative analysis on behavior of VS-Bank index in relationship with these above-mentioned factors, and quantitative analysis using panel data, linear regression models including Pool OLS, FEM, REM, and standard errors robust model (SE Robust), which is followed by procedures for data processing and hypothesis testing.

Research gap

Although there are many studies conducted in Vietnam and abroad that have important references for the dissertation, they still reveal gaps and have not been comprehensive in the following aspects:

First, the characteristics of bank shares have not been clarified nor deeply explained based on the reality of global banking and in Vietnamese context;

Second, variables used as inputs in the regression models representing for factors affecting the volatility of bank share price are not likely presenting for three groups factors, that are mentioned in previous section. Conclusions and recommendations for the relevant subject are vague. The research method is based on either quantitative or qualitative approach. In other words, there is very little combination between qualitative and quantitative in one research.

Third, some doctoral dissertation studying about Vietnam's security markets or components in financial markets referred at the National Library of Vietnam and online database in Vietnam could not withdraw conclusions and details about the size and magnitude of effects on the listed bank share prices, especially during period between 2009÷2020, covering severity of SARS-CoV-2 and new normal.

Fourth, the bank share is recognized as the "pillar" stock of the security market, which gain lot of interests from investors. If the share price of listed banks has stable growth and is well managed, it is worth investing for long term, thereby the issuers and regulators have to active with effective policy to monitor the bank shares exempted from all types of market manipulation. However, these issues are not clearly addressed in literature.

1.2. RESEARCH METHODOLOGY
1.2.1. Research procedure
The research procedure consists of 05 phases: (i) research approach in deciding necessity of the study; (ii) reviewing theoretical and practical literature and constructing the research framework; (iii) modelling and proposing hypothesis and preposition for the study; (iv) analyzing the current situation of factors affecting the price of shares listed on the Vietnam's stock market; (v) recommendations and implications based on findings from the study of determinants of share prices of banks listed on Vietnam's stock market.

1.2.2. Specific research methods
1.2.2.1. Data collection and data processing
Primary data collected from survey
The survey questionnaires are constructed with support of 11 experts in the field related to banking and finance, then delivered to individual investors after pilot study. General information about individual investors, and data on how they make decision involving the number of bank shares they hold and investment portfolio are actually driven by understandings of behavior of bank shares, market sentiment, types of psychology existing among Vietnamese individual investors.

Secondary data
The dissertation applies decondary data on bank share prices, EPS, Beta; VS-Bank index, macroeconomic and institutional performance indicators abstracted from quarterly financial statements of listed banks during 2009÷2020. The data is statistically consolidated by the General Statistics Office of Vietnam (GSO), SSC, Vietstock and FiinPro. In addition, information about socio-economic updates of Vietnam is collected from official publication and disclosure.

1.2.2.2. Modelling
The multivariate linear regression with panel data for the period Q1.09÷Q42020 is denoted in the general form $SPriceD_{i,t} = \beta_0 + \beta'X_{i,t} + \beta''L_{i,t} + \beta'''Z_{i,t} + u_{i,t}$, of which Model 1 evaluates the impact of 03 groups of independent variables on the price volatility of 13 listed bank share prices, while model 2 quantifies the interactive effect among the 03 groups.

1.2.3. Summation, evaluation on research results
Key findings based on qualitative and quantitative analysis are sum up and become foundations for recommendations and implications in chapter 4 of the dissertation.

CONCLUSION FOR CHAPTER 1

Chapter 2: THEORITICAL AND PRACTICAL FRAMEWORK FOR DETERMINANTS OF SHARE PRICES OF JOINT STOCK COMMERCIAL BANKS LISTED ON SECURITY MARKETS

2.1. SHARE, SHARE PRICES OF JOINT STOCK COMMERCIAL BANKS
2.1.1. Joint stock commercial banks

2.1.1.1. Concepts and approaches

concepts and approaches for joint-stock company (JSC), commercial bank and joint-stock commercial bank are cited from textbooks and legal documents including the textbook of *Commercial bank management* written by Peter S. Rose (2001), *Commercial bank management* written by Nguyen Thi Mui (2007), the Law on Credit Institutions No. 47/2010/QH12 dated June 16, 2010; Enterprise Law No. 68/2014/QH13; Circular No. 40/2011/TT-NHNN, Circular No. 17/2017/TT-NHNN, Circular No. 14/VBHN-NHNN issued on August 21, 2018.

2.1.1.2. Main functions of joint stock commercial banks

First, commercial banks perform the function of financial intermediaries through mobilizing deposits and borrowings, lending, investing, making payments and other services for the economy.

Second, commercial banks are intermediaries for transmission of monetary policy.

Third, the operation of commercial banks is associated with credit risk, market risks, liquidity risk, operational risk and others.

Fourth, the operation of commercial banks is strictly monitored by central banks and banking regulators based on compliance and on risk-based standards.

2.1.2. Common shares of joint stock commercial banks

2.1.2.1. Concepts

The concepts of common share are cited from a number of textbooks and legal documents, including the textbook entitled *Financial markets* (2015) written by Hoang Van Quynh and Nguyen Thi Hoai Le. In addition, it is abstracted from the general regulation on common share quoted at Article 121 of the Enterprise Law No. 59/2020/QH14; Article 4, Clause 2 of the Law on Securities No. 54/2019/QH14, and relevant legal documents.

2.1.2.2. Characteristics

Within the scope of the dissertation, only common stocks are mentioned. Common stock has 06 basic characteristics: (i) it is classified into equity security; (ii) it has no maturity, it exists as long as the existence of the JSC; (iii) it is issued upon the establishment of a JSC in the form of an internal issuance or an initial public offering to raise charter capital; or additional issuance to raise charter capital; (iv) is a profitable instrument for shareholders who owned the share; (v) it is also a risky financial instrument; and (vi) it is liquidated on stock exchange if the holder wants to transfer the share to another investors.

Characteristics regarding the bank shares: Currently, there is no theoretical basis to address main characteristics of bank shares based on the nature of banking and functions of banks. However, the author has been reviewing relevant documentation and having clarification with personal opinion about bank shares as follows: (i) the listing of bank shares on stock exchanges requires the issuer as the banks both fulfil all criteria on the listing standards set by regulators governing financial markets and complete all requirements on listing of shares regulated by central banks (for instance the regulators in Vietnam include SSC and SBV); (ii) in some countries, the laws prohibit borrowers of banks to use shares issued by these banks as collateral for loans or other types of credit; (iii) bank share is strongly sensitive to the cyclical context of the economy; (iv) bank share is belonged to a large-cap stock on the stock markets.

2.1.2.3. Forms of additional issuance of bank shares

The issuance of shares by banks is implemented in two ways: private offering and public offering. Procedure for the public offering is much more complicated than the private offering, and it includes primary IPO and secondary IPO. For example, a public joint stock commercial bank offers to sell additional shares to the public or offering the right to buy shares to existing shareholders to raise charter capital under approval of regulators on security and banking. Whereas, primary offering is a form of offering additional shares limited to strategic partners, or popularly offering to institutional investors only.

2.1.3. Share prices of joint stock commercial banks

2.1.3.1. Concepts

Concepts of share prices are abstracted from several citation and based on traditional and contemporary economics approach, and ec0nomics of banking and finance approach. Within the scope of the dissertation, share price of a bank is understood based on theory for supply and demand, and it is based on the concept of market price of shares. The bank share price is understood as the market price of a bank share, or a combination of bank stock price index, that listed on the stock exchange. The quotation of bank share price is depended on the current regulations on the stock exchange of each country.

2.1.3.2. Share price mechanism

Mechanism of bank share price is identical to any common share, in which the market price is determined as the equilibrium point at which the quantity supply of shares is equal to the quantity demand for the share at one point in time. In reality, the market acts as an auction house for buying shares of publicly traded stocks. Only when buyers and sellers agree on a price level and complied with rules on stock exchanges, the order is executed. In the dissertation, the closing price quoted on stock exchange is applied and it is used to measure the price volatility.

2.1.3.3. Volatility of bank share price measurement

There are several formulars to determine volatility of bank share prices. In the dissertation, absolute difference and relative difference of share prices at point *t* and point *t-1* are referred as follows:

- Absolute difference: $\Delta SPrice_{i,t} = SPrice_{i,t} - SPrice_{i,t-1}$ (1)
- Relative/percentage difference $\Delta SPrice_{i,t}(\%) = \frac{(SPrice_{i,t} - SPrice_{i,t-1})}{SPrice_{i,t-1}} x100\%$ (2) *or* $\Delta SPrice_{i,t}(\%) = \frac{SPrice_{i,t}}{SPrice_{i,t-1}} x100\%$ (3)

Formular number 2 is applied to measure bank share price volatility in the dissertation.

2.2. MODELS RELATED TO SHARE PRICING

2.2.1. Gordon Growth Model

- Share price can be estimated based on the general formular: $SPrice_0 = \frac{D_1}{(1+i)} + \frac{D_2}{(1+i)^2} + \cdots + \frac{D_n}{(1+i)^n} + \frac{P_n}{(1+i)^n}$ hoặc $P_0 = \sum_{t=1}^{n} \frac{D_t}{(1+i)^t} + \frac{P_n}{(1+i)^n}$ (4)

- The model with constant growing rate (g) $SPrice_0 = \sum_{t=1}^{T} \frac{D_t}{(1+i)^t} + \frac{\sum_{t=1}^{n} \frac{D_{T+1}}{(1+i)^t}}{(1+i)^T}$. Of which,

$D_t = D_0(1+G_S)^t$ và $D_{T+1} = D_T(1+g)$; $D_T = D_0((1+G_S)^T$ Do vậy, $SPrice_0 = \sum_{t=1}^{T} \frac{D_0(1+G_S)^T}{(1+i)^t} + \frac{1}{(1+i)^T} x \frac{D_0(1+G_S)^T x(1+g)}{(i-g)}$

2.2.2. Free cash flow to the firm (FCFF)

2.2.3. Free cash flow to the equity (FCFE)

2.2.4. Share pricing based on P/E method

The formular for P/E is: $P/E = \frac{Market\ value\ of\ a\ share}{EPS}$. The P/E can provide valuable insight into the quality of an investment, reflecting the comparative relationship between the market share and EPS, indirectly reflecting net income and the number of shares in circulation. Although there is still up for debate. In the long run, a share associated with a higher P/E can be attractive to investors, and demand for the share tends to increase.

2.2.5. Share pricing based on P/B method

The formular for P/B is: $P/B = \frac{Market\ value\ of\ a\ share}{Book\ value\ of\ the\ share}$. P/B reflects the relationship between the market value of a share and a book value of the share. Although there is still up for debate, tt reflects whether the current price is reasonable to investors and the issuer.

2.3. DETERMINANTS OF SHARE PRICES OF JOINT STOCK COMMERCIAL BANK LISTED ON SECURITY MARKETS

2.3.1. Macroeconomic factors

Representatives for macroeconomic factors include Gross domestic products (GDP), Consumer price index (CPI), Vietnam's interbank interest rate (VnIbor), Money supply (M2), Exchange rate between USD and VND (FX), Gold price (Gold), Sectoral index (for example: the index of industrial production-IIP). These factors are taken into consideration with analysis on macroeconomic factors affecting the publicly traded share prices.

2.3.2. Internal factors of joint stock commercial banks

Internal factors representing business performance of a joint stock commercial banks include the outstanding loans, deposits, borrowings, ROA, ROE, non-performing loans, EPS and Beta. Besides, the dividend policy, the additional issuance of banks, or buying back shares in circulation. These factors are taken into consideration with analysis on internal factors of issuers affecting the share price issued by them.

2.3.3. Technical factors and investor behaviour

Regulators can use their power and technology to organize the security market intentionally and eligibly with their strategic planning. Therefore, they can use appropriate tools to intervene into the market. For example, the regulators intentionally change or revise criteria to listing and trading. This can happen to those stock markets undergone crash or bear market during economic or financial crisis.

Factors belonging to individual investor behaviour such as lack of knowledge about fundamental analysis and technical analysis, or insufficient experience on trading; herd behaviour, overconfidence, over-optimism, fear of loss are also taken into consideration.

2.4. MONITORING FACTORS AFFECTING STOCK MARKET PRICES

Stakeholders and regulators, who are responsible for monitoring factors affecting stock market prices include issuers, investors, investment organizations, and services companies on the stock market. The sustainable development of the stock market is accompanied by stable growth in the long run. Monitoring stock price fluctuations to ensure the sustainable development of the stock market is a complicated issue. Generally, it can be considered that in any developed financial markets associated with a high level of market organization, monitoring standards are constructed to handle excessive and wide fluctuations of stock prices Criteria to strengthen competencies of experts and traders, good training the issuers and advanced technologies are of importance. Lesson learnt from management of stock market during upheavals show that the market can be more vulnerable as individuals affected by negative returns or big loss often interact with irrational behavior.

CONCLUSION FOR CHAPTER 2

Chapter 3: CURRENT SITUATION OF DETERMINANTS OF SHARE PRICES OF JOINT STOCK COMMERCIAL BANKS LISTED ON VIETNAM'S SECURITY MARKETS

3.1. THE LISTING PROCESS OF JOINT STOCK COMMERCIAL BANKS ON VIETNAM'S SECURITY MARKETS

3.1.1. Listing and supply of share of joint stock commercial banks

3.1.1.1. The share listing of joint stock commercial banks

As of January 25, 2022, Vietnam's stock market has 28 banks listed and registered for trading on the stock exchanges, including 02 banks listed on HNX; 17 banks listed on HOSE. The fact shows that joint stock commercial banks officially went public later in comparison with other listed organizations in other fields of business. That process has been done for at least 15 years since 2006. By the end of 2021, the number of listed banks was 19 out of 33 joint stock commercial banks in the overall banking network, accounting for 57.58%. In order to complete the listing target by 2025 according to Decision 242/2019/QD-Ttg, banks that have not yet registered for trading, or those without concrete plan for listing have to commit to the roadmap based on the Government's guidelines.

3.1.1.2. The supply of listed bank shares in circulation

In general, joint-stock commercial banks increase their charter capital by additional issuance. During the restructuring period from the year 2012 to 2015, listed banks faced many difficulties due to their incompetency to attract investors. In the period between 2016 and 2020, non-performing loans in bank network have been controlling at level below 3% and prudential management. The process of increasing charter capital in line with business expansion and strengthening risk management under Basel 2 Accord require additional issuance of banks.

3.1.2. Offering additional share of listed banks

3.1.2.1. Forms of offering in use

In the period Q1.2009÷Q4.2020, the listed banks had applied 05 forms of stock offering, including the right issues to existing shareholders, private offering to strategic partners or institutional investors, employee stock ownership plan (ESOP), dividend paying stocks, bonus shares.

3.1.2.2. Evaluation on additional issuance of shares

The selection of the form of issuance to listed banks fully complies with listing standards of the SSC and regulation on listing of shares of the SBV. Of which, ESOP is limited while the rights issues to existing and dividend paying stocks are prioritized in use. During the SARS-CoV-2 pandemic, SBV issued Directive 02 in 2020 and Directive 01 in 2022 urging joint-stock commercial banks not to pay dividends by cash and maintaining CAR minimum 8% according to Circular 41.

In sum, additional issuance of shares improves charter capital and financial strengths for listed banks. Besides, it increases the supply of shares in circulation, creating liquidation effects and putting more pressures to adjust share prices after offering to the public.

3.2. BEHAVIOR OF SHARE PRICES OF JOINT STOCK COMMERCIAL BANKS LISTED ON VIETNAM'S SECURITY MARKETS

3.2.1. Behavior of bank share prices in Group 1

Shares belonging to group 1 include VCB, CTG and BID. Their historical price data that the price has an upward trend with new peaks established during the research period. It also witnessed a slow growth period from Q1.2009÷Q4.2016 associated with the recession of Vietnam's stock market. Since Q1.2017, all 3 stocks have recovered strongly, especially the case of VCB. In which, VCB rise dramatically and become the one having the highest price level in the network of listed banks. Meanwhile, prices of CTG and BID have also increased strongly since Q1.2017 though they could not reach as high as VCB.

3.2.2. Behavior of bank share prices in Group 2

Group 2 include 6 share codes (i.e., MBB, ACB, STB, VPB. TCB, and SHB). In the period before 2017, 4 codes include MBB, SHB, ACB and STB having prices in the ranges below the band 20,000 VND/share. There were also times they are at the level less than the issued price of 10,000 VND/share. After 2017, TCB and VPB joint the group. Along with strong recovery of the economy and accelerating trend of Vietnam's stock market, all 06 stocks have increased and moved up to the range of 20,000÷30,000 VND/share. During the first wave of SARS-CoV-2 in Q1.2020, they were dropped sharply, then recovered quickly during the rest between the first wave and the second wave to the end of 2020.

3.2.3. Behavior of bank share prices in Group 3

Group 3 include 04 codes (i.e., EIB, NVB, TPB and HDB). Based on seasonal analysis and decomposition, the trend analysis generally shows that NVB and EIB had fluctuated below 20,000 VND/share even in the period 2017÷2019, while HDB had fluctuated in price range of 20,000÷30,000 VND/share. TPB stock has achieved positive trend.

3.3. CURRENT SITUATION OF DETERMINANTS OF BANK SHARE LISTED ON VIETNAM'S SECURITY MARKET DURING 2009÷2020

3.3.1. Current situation of macroeconomic factors

3.3.1.1. *Gross domestic products (GDP) and VS-Bank*

Statistical data in Figure 3.1 shows that VS-Bank grew stably during the stable growth periods of GDP. It is observable that VS-Bank fluctuates more strongly when GDP fluctuates sharply.

3.3.1.2. *Interbank market interest rate (VnIBOR) and VS-Bank*

Statistical data in Figure 3.2 describes the opposite movement of VnIBor and VS-Bank. VS-Bank grew slowly even in the declined periods associated with high market interest rates (in range of 8.6% ÷ 14%), and had an upward trend during the period the SBV inacted with monetary policies and interventions to cut back market rates in a lower range between 2% and 5%.

3.3.1.3. *Money supply (M2), consumer price index (CPI) and VS-Bank*

Statistical data in Figure 3.2 related to CPI and VS-Bank shows that movement of CPI (which often coincides with interest rates) was in opposite direction with that of VS-Bank. Data in Figure 3.3 represents the trend that growing of M2 can promote the improvement of VS-Bank in the long run.

3.3.1.4. *The index for industrial production (IIP) and VS-Bank*

Data in Figure 3.4 shows that it is not clear if the movement of VS-Bank and IIP is aligned with each other in the research period. It was likely to have co-movement during Q3.2009÷Q1.2011; Q4.2015÷Q4,2016 and Q4.2019÷Q4.2020, adverse movement in the periods Q2.2011÷Q1.2012; Q4.2012÷Q1.2014 and Q1.2017÷Q3.2019.

3.3.1.5. *USD/VND exchange rate (FX) and VS-Bank*

While the FX is strongly influenced by the exchange rate policy with extensive intervention of the SBV and the balance of payments situation, it is likely that VS-Bank moves depended on cyclical and seasonal factors along with the ups and downs of GDP, CPI, VnIbor and M2. The statistics shown in Figure 3.5 implies an unclear correlation between the USD/USD rate and VS-Sector, so it requires quantatative analysis to better regconize relationship between them.

3.3.1.6. *SJC Gold price and VS-Bank*

The volatility cycle of gold price depends much on the intervention policy of the SBV regarding gold imports, while fluctuation of VS-Bank reflects the cyclical growth of Vietnam's stock market and supply of and demand for bank shares. However, statistical data in Figure 3.6 shows that price of gold moved in the opposite direction with that of VS-Bank except for the year 2009.

3.3.2. Factors belonging to business performance of listed banks

3.3.2.1. *Equity and liabilities of listed banks*

In the period 2009÷2020, those banks belonging to group 1 had equity size of more than VND 15 trillion, namely Vietcombank, VietinBank and BIDV at the time of listing. By 2015, the total equity of three banks continued to increase sharply. By the end of 2019, Vietcombank became the leading bank with equity capital of VND 79,133 billion. In the context of SARS-CoV-2, an amazing performance continued as the equity of all three increase sharply. In group 2, banks with high increase in equity size in the last few years include Techcombank, VPBank and MBBank. In group 3, the average equity size of TP Bank in the period 2009÷2020 only reached VND 5,940 billion. Meanwhile, the average equity size of HDBank in the period 2009-2020 reached 9,478 billion VND despite having a low level of 1,796 billion VND at the beginning period. Besides, EIB had the slowest capital growth rate, while the equity size of NCB was only VND 4,286 billion on average by the end of 2020.

It can be seen that 03 big banks have very high leverage ratio (total debt/total equity) at about 12.7÷19.0, and banks with the multiple less than 10 include Techcombank (7.8) and MBBank (9.5). Meanwhile, SHB and Sacombank have quite higher multiples at 15.6 and 15.0 respectively. The data in Figure 3.7 shows the evolution of liabilities and equity in linewith VS-Bank index, presenting the co-movement in the periods of Q1.2009÷Q1.2010 and Q1.2012÷Q4.2019. There were two periods witnessing the opposite direction in Q2.2010÷Q4.2011 and Q1. 2020÷Q4.2020.

3.3.2.2. *Total assets and lending*

Banks belonging to group 1 are the largest ones in terms of total assets. Their total assets' size fluctuates in the range of VND 1,211,566.3 ÷ 1,489,117 billion by the end of 2020, and reaching an average growth rate of 16% ÷ 17.7 % for the period 2009÷2020. They also provide largest outstanding loans to the economy. Besides, TPBank, HDBank, and VPBank have achieved the highest expansion of assets, which is always in the range of 28.1%÷35.8% annually. Techcombank and MBBank has been achieved at growth rate of 15.9%÷19.1% per year. Lending growth rate of VPBank and HDB reached 30.7%÷32% a year, while MBBank, ACB and Sacombank reached 18.3%÷22.9% a year. The expansion of total assets and lending to the economy and their movement in light of VS-Bank is shown in Figure 3.8. The total assets have positive correlation with equity and liabilities during Q1.2009÷Q1.2010 and Q1.2012÷Q4.2019; and the opposite trend can be observed during Q2.2010÷Q4.2011 and Q1-2020÷Q4.2020. Meanwhile, lending to the economy continued to increase steadily throughout Q1.2009÷Q4.2020, which was similar trend with VS-Bank except for the period of Q3.2010÷Q1.2011.

3.3.2.3. *Profitability ratios (ROA and ROE)*

The four banks achieved the highest ROE include Vietcombank, VPBank, ACB and Techcombank with 17.6%÷20.9%/year on average. Next, BIDV and VietinBank have stable ROE in the range between 16.4% ÷ 17.6%/year. Following is HDBank, MBBank and Sacombank achieving a growing rate of ROE between 11.7%÷13.2%/year. Besides, ROA of Techcombank and MBBank reached the top at 1.9%/year, followed by VPBank and Vietcombank with an average of 1.5%÷1.7%/year. Meanwhile, ACB, BIDV, VietinBank, Eximbank and HDB, Sacombank and SHB performed ROA in the range of 0.8% ÷ 1.2%.

The data in Figure 3.9 shown ROE fluctuations in comparison with VS-Bank clearly addresses a positive trend in the period Q4.2009÷Q3.2010; Q3.2013÷Q1.2016; Q1.2018÷Q1.2019; Q1.2020÷Q4.2020, whereas the opposite trend observed in the period Q1.2009÷Q3.2009; Q2.2012÷Q3.2013; Q1.2016÷Q3.2019. It is hard to predict the trend between ROE and VS-Bank in the period of Q4.2010÷Q1.2012. As for ROA, the volatility is wider in comparison with VS-Bank, so it needs to be quantified using regression model.

3.3.2.4. *Earnings per share (EPS)*

Two shares belonging to Group 1 had EPS in the range between 2,167 dong and 2,747 dong. In Group 2, VPB and TCB had the highest earnings at 3,363 dong÷ 3,552 dong/share, while ACB and MBB were at 2,376 dong÷2,526 dong/share. The EPS of SHB and of STB only reached 1,228 dong ÷ 1,436 dong/share despite the longest listing history compared to other banks. In group 3, EIB and NCB have the lowest level of 450 VND ÷

887 VND/share. Particularly, EIB's performed at negative (minus 18%) in 2016 due to bad performance and huge NPL.

3.3.2.5. Non performing loans (NPLs)

On average, BIDV has the largest average size of NPL in the period 2014÷2020 at VND 7,931 billion/year. Vietcombank controled NPL at an average of VND 3,834 billion/year. Although Sacombank has a NPL scale of up to 3,734 billion VND/year. In 2020, NPL in the whole network increased rapidly in some banks followed by severity of SARS-CoV-2 pandemic. NPLs of MBBank and NCB had increased in the range of 103% ÷ 175%, while that of Eximbank and TPBank had creased by 72% ÷ 94%. In 2021, banks strengthen credit risk and allowances for loan loss. These controlled steps enabled the decrease of NPLs in VietinBank, SHB, Vietcombank, VPBank and Techcombank by 29%, 2%, 9%, 36%, and 53% respectively.

Figure 3.10 shows the relationship between VS-Bank and NPLs. It witnesses similar trends in periods between Q1.2009÷Q2.2010; Q1.2011÷Q2.2014; Q2.2016÷Q2.2019; and opposite trends in periods between Q2.2010÷Q1.2011; Q3.2014÷Q1.2016; Q4.2019÷Q4.2020. In general, the increase in NPLs along with the expansion of credit provison in the economy has strong co-movement with VS-Bank in some periods.

3.4. SURVEY DATA ANALYSIS ON THE INDIVIDUAL INVERSTOR BEHAVIOR ON VIETNAM'S SECURITY MARKETS

3.4.1. General information and demographic factors of individual investors

Among 185 valid survery questionaires, the gender was 58.92% for male and 41.08% for female; the rate having bachelor degree accounted for 70.27%, post-graduate degree made up 22.7%, college degree was 3.78% and high school graduates reached 3.24%. Investors working in administrative and non-business units accounted for 73.51%, areas relating to securities and investments accounted for 11.35%, finance-banking field was 8.11% and science and technology was 3.78%. Those along with more than 5 years experience in stock investing was 24.83%, less than 1 year wa 20.04% , and from 1 to 5 years was 55.13%. Only 2.18% of investors have been holding more than 10 bank shares, 10.26% hoding from 7÷9 stocks, 36.21% have been maintained a portfolio with 4÷6 bank sharestocks accounted for 36.21% and 51.35% held less than 03 bank shares.

3.4.2.   Factors affecting the selection of bank shares by individual investors

3.4.2.1. Psychological factors of individual investors

There were 69.72% of investors think that the bank's liquidity is very good, 64.32% thought it is worth investing bank stock, 70.27% were quite optimistic that holding the bank stock will be profitable in the long run. Up to 80% believed that information disclosure by listed banks is reliable, while more than 50% believed that they can understand the characteristics of banks and banking industry. There were 52.43% relying on analytical reports released by institutional investors.

However, only 37.3% confirmed to follow strong buy and strong sell behaviour of institutional investors. Only 42.7% were satisfied with the dividend policies of listed banks, while 81.62% were concerned about the risks arising in investment process, especially price adjustments and liquidate effect following announcement prior to additional offering for shares. The negative opinion of impulsive transactions was only 36.22%, and 43.78% of

investors thought that investment in bank share would receive higher returns than investing in other stocks.

3.4.2.2. *Factors relating to knowledge of individual investors*

The number of people who considered themselves to have good fundamental analysis skills reached 53.51%. Only 32.43% tolerated that they have a preliminary understanding of technical analysis. There were 29.43% thought that they do not have methods of selecting an investment portfolio, while 57.37% thought that they do not rush to sell bank shares at a loss and 54.59% thought that they are not in a hurry to sell shares when prices are increasing. Most of them thought that they do not have a sound investment philosophy, or fully aware of investment strategies. Only 41.42% have been developed a value at rate for each bank stock, and 21.08% agreed that they have an investment philosophy.

3.4.2.3. *Awareness about macroeconomics and bank management*

Up to 60% of investors had concerns about the inflation, while 58.38% concerned about the ups and downs of gold price, 63.78% had interests in market interest rates but only 28.64% have interests in the index of industrial production. Up to 76.76% did not think that unemployment affects the decision to invest in bank shares. Only 33.89% thought the USD/VND exchange rate is important in investment decision making. Along with 76.26% told that the bank reputation is of importance to them, about 62.16% thought that the leadership and board of management of listed banks are crucial to bank shares.

In addition, 62.70% to 69.73% agreed upon the effect of bank sizes (i.e., total assets, loans, and equity) on the volatility of bank shares. Meanwhile, up to 50% argued that profitability ratios such as ROA, ROE, EPS, profit after tax and relevant business performance indicators can have strong effect on the decision to buy or sell bank shares

3.5. REGRESSION ANALYSIS ON DETERMINANTS OF LISTED BANK SHARE PRICES IN VIETNAM'S SECURITY MARKETS

3.5.1. Effects of independent variables on volality of listed bank share prices

3.5.1.1. *Descriptive statistics of variables in the proposed regression model*

Equity size of listed banks has an average growth rate of 4%/quarter, while deposits and borrowings increased by an average of 4%/quarter with standard deviation of 8%/quarter. ROA and ROE reached 2% and 11%, respectively, with standard deviations of 2% and 8%/quarter. Variations of these indicators were recorded in the range (-1% ÷ 11%) for ROA and (-16% ÷ 31%) for ROE. Average EPS is 1,877 VND/share, and differed in a range of (-2,047VND÷8,287VND)/quarter. Average NPL was about 2,378.47 billion VND quarterly while its standard deviation was 2,640.72 billion VND. The Beta fluctuated in the range between -0.94 and 4.05 each quarter.

3.5.1.2. *Correlation among independent variables*

The correlation coefficence of GDP and of VnIbor with the remaining variable in the model were in the absolute value range of (0.027; 0.656) and (0.012; 0.537) respectively. That of M2 and of Gold with the remaining were in the range of (0.030; 0.656), (0.007; 0.616) respectively; and of CPI and of FXC and the rest were in the range of (0.024; 0.484) and (0.004; 0.348). The above-mentioned results show the correlation coefficient in the range (0.019; 0.695), and it shows no highly correlated found among variables.

3.5.1.3. *Selecting the appropriate model*

The results of the F-test between PoolOLS and FEM showed that FEM is accepted. Modified Wald test showed that heteroskedasticity problem exists in FEM. Woolridge's autocorrelation test showed that there is no autocorrelation as the coefficient F(1,12)=0,393 with Prob>F=0,5424 at a value of $>5\%$. Therefore, in order to resolve the heteroskedasticity problem, the robust standard errors model (SE Robust) was applied to replace FEM, and results from regression analysis using SE Robust have the following results:

$$SPriceD = -0,018 + 0,0000843xGDP^{***} - 1,27163\ xVnIbor^{***} - 0,000031xM2$$
$$- 0,00158xGold + 1,2511xCPI^{***} + 0,3341\ xIIP - 3,2148xFXC^{***}$$
$$+ 0,253xEquityC - 0,2173xDebtC^{**} + 0,9631\ xROA^{**} + 0,4306xROE^{**}$$
$$+ 0,000033xEPS^{**} - 1,18e.05xNPL + 0,0607xBeta^{***}$$

3.5.1.4. *Intepretations on determinants of listed bank share prices*

Macroeconomic factors

The results showed that *GDP*, *VnIbor*, *CPI*, *FXC* have significant impact on *SPriceD* listed on Vietnam stock market in the period of $2009 \div 2020$.

Business performance factors

Regression results showed that therre is statistically significant impact of *EquityC* on *SPriceD*. In other words, with 1% increase in *EquityC* can expect *SPriceD* to increase by 0.253% on average. When *NPL* in the whole banking network increases by VND 1,000 billion, it is expected the *SPriceD* to decrease by 1.18%. Along with higher than 95% statistical significance, *ROE* increases by 1% would make *SPriceD* increase by 0.43%. As long as *ROA* increases by 1%, *SPriceD* increases by 0.96%.

Risk and return of bank shares

The impact of *EPS* on *SPriceD* showed a positive relationship, i.e., if *EPS* increases by VND 1,000 would lead to increase of *SPriceD* by 3.3%. Research results also proved that if *Beta* increases by 1 unit, then share price will increase by 6.07%.

3.5.2. **Regression analysis results in terms bank groups**

3.5.2.1. *Macroeconomic factors*

When GDP increases by VND 1,000 trillion, the listed bank price with respect of group 1, group 2 and group 3 can increase by 15.04%, 11.83% and 6.51% respectively. It proved that effect of *GDP* on *SPriceD* in group 1 is stronger compared to other 2 groups. The results also showed that *SPriceD* is strongly affected by *VnIbor*, especially shares in group 1 and group 2. Money supply (M2) has the opposite and statistically significant in group 2, while Gold has negative impact and statistically significant with stocks in group 3. The negative impact of *FXC* on *SPriceD* can again be confirmed on all 3 groups.

3.5.2.2. **Business performance on listed bank shares**

When *Equity* increased by 1%/quarter, *SPriceD* in group 1 is expected to increase by 0.78%. In group 3, if NPL increases by 1,000 billion dong/quarter, then *SPriceD* was supposed to decrease by 1.58%. The positive effect of ROA was clear in group 1 and group 2, while that of ROE also had a positive effect on the whole sample, and was pronounced for those in group 2.

3.5.2.3. **Effect of risk-return of listed bank shares**

The positive impact of *EPS* was clear in group 1 and group 3. When *EPS* increased by 1,000 VND/share, then bank share price of group 1 increased by 10.73% and in group 3

increased by 3.3%. Similarly, *Beta* had a remarkably positive effect on *SPriceD* by expected rate of 8.73% in group 1, of 6.2% in group 2, and of 5.7% in group 3.

3.5.3. Regression results withdrawn from effects of macroeconomics in interaction with business performance and risk-return of listed bank shares

3.5.3.1. Interactive effect of GDP on SPriceD

When *GDP* increased by 1,000 billion VND combined with *DebtC* increase by 1%, listed bank share price increased by 2.57% for the whole sample, and 2.77% for group 2. For each unit of *GDP* and *ROA* increased would lead to increase of *SPriceD* by 9.87% for the whole sample and by 39.97%% for group 2. The impact of *GDP.ROE* was statistically significant for those in group 2, pushing prices up by 11.83%. In the whole sample, the impact of *GDP.Beta* can increase the listed share prices by 2.85%, while *GDP.Beta* caused those in group 1 to increase 4.35% and in group 3 to increase by 3.99%.

3.5.3.2.   Interactive effect of VnIbor on SPriceD

The impact of *VnIbor.EquityC* in the long run is positive and if it increased by 1 unit would pushed listed bank share price of group 1 increased by 5.86% and group 3 increased by 0.78%. *VnIbor.DebtC* made the price increase by 0.68% in the whole sample, by 0.44% in group 1, by 5.73% in group 2 and by 1.85% in group 3. *VnIbor.ROA* might cause bank share price to increase by 11.02% for the whole sample, and by 13.95% for group 2. *VnIbor.ROE* made the price of group 2 to increase by 4.38% and *VnIbor.EPS* made the price of group 1 to increase by 5.46%, of group 2 to increase by 4.73%. *VnIbor.Beta* made the average price to increase by 0.425% for the whole sample, and by 1.023% for group 3.

3.5.3.3.   Interactive effect of money supply M2 on SPriceD

M2.EquityC made the share price of group 1 decreased by 8.53% while *M2.DebtC* made the price increased by 0.13% for the whole sample, by 0.831% for group 1, by 4.1% for group 2. *M2.ROA* caused the price to increase by 0.879% in the whole sample, while and M2.ROE caused the price to increase by 0.332%. The impact of *M2.Beta* on *SPriceD* is positive, silmultaneously made the share price to increase by 0.0516% in group 1.

3.5.3.4.   Interactive effect of Gold price on SPriceD

Across the whole sample, *Gold.DebtC* and *Gold.ROA* caused the price to increase by 0.275 percent and 1.2% respectively, but *Gold.Beta* caused the price to decrease by 0.13%. When the gold price increased, the bank share price might decrease by 1.3% for group 1. Meanwhile, the rise of gold price and the expansion of debt size would increase the price slightly by 0.017% for group 1 and by 0 ,77% for group 2. *Gold.ROA* and *Gold.ROE* made the price of group 2 to decrease by 2.95% and by 1.07% respectively. *Gold.EPS* made the price of group 1 decreased by 0.2%. In group 2, *Gold.NPL* made the price drop slightly by 0.0188%.

3.5.3.5.   Interactive effect of consumer price index (CPI) on SPriceD

CPI.DebtC, CPI.ROA made SPriceD to increase by 0.71% and by 7.48% respectively in the whole sample. As for group 1, *CPI.DebtC* made *SPriceD* to increase by 0.35% while *CPI.NPL* caused the price to decrease by 0.24%. As for group 2, the interactive effect of *CPI.ROA* on *SPriceD* was not clear. As for group 3, *CPI.EquityC* made the price to increase by 4.06% and *CPI.NPL* caused the price to decrease by 5.7%.

3.5.3.6.   Interactive effect of index for industrial production (IIP) on SPriceD

The interactive factor *IIP.DebtC* made the price decreased by 0.3%, *IIP.ROE* pushed the price up by 1.73%, and *IIP.Beta* caused the price to increase by 0.34% in the whole sample. As for group 1, the interactive effect was stronger with the pairs of interactive variables *IIP.EquityC* and *IIP.DebtC*, making the price tended to increase by 2.33% and 0.21% respectively. If *IIP.ROA*, *IIP.ROE*, and *IIP.Beta* increased by 1 unit then caused *SPriceD* to rise by 1.51%, 5.78% and 0.66% respectively. In group 2, *IIP.ROE* made the price to increase by 2.12%. In group 3, *IIP. EquityC*, *IIP.DebtC* and *IIP.Beta* made the price to increase by 2.95%, 0.97% and 0.48% respectively.

3.5.3.7. *Interactive effect of exchange rate USD/VND on SPriceD*

The impact of *FX.EquityC* made the price drop by 2.36% in group 1, while *FX. DebtC* made the price of the whole sample increased by 0.0778%, and in group 1 decreased slightly by 0.047%, in group 2 increased by 1.84%. *FX.ROA* and *FX.ROA* made listed share prices reduced by 1.48% and 1.54% respectively across the whole sample. *FX.Beta* reduced prices by 0.197% for the whole sample, and by 0.246% for group 3 respectively.

3.6. EVALUATION ON THE CURRENT SITUATION OF DETERMINANTS OF LISTED BANK SHARE PRICES ON VIETNAM'S SECURITY MARKETS

3.6.1. Findings withdrawn from the survey study

As far as news regarding macroeconomics, individual investors strongly believed that inflation, market interest rates, and gold price are sensitive to the bank share price. Regarding the business performance of listed banks, the survey results showed that individual investors have high confidence in the publicly financial disclosure of listed banks and data abstracted from financial statements of banks. A number of investors argued about the effect of brand name, reputation of BOD, business performance of banks and equity size as determinants for their investing decisions. Many answered the survey also tolerated that they need to enrich themsevels with learning fundamental analysis and technical analysis and improve investment skills, and having proper methods to select an effective portfolio. They also need to improve their experience on market sentiment, strengthening competency in identifing heurding, overconfidence, fear of loss, so that to balance themselves and to handle with ups and downs situation of the markets. Besides, most individual investors seriously concerned about dividen policy and additional issuance of bank shares.

3.6.2. Findings withdrawn from additional issuance of listed banks

From the research results presented in Appendix 11 of the dissertation, ROE decreased by -3.3% before 1 day and the cumulative return decreased by -4.12% after 1 day from the announcement date. However, the positive trend appeared from 7 to 10 days after the announcement. Within ±360 days from the date of announcement, investors would make profit if they only have transaction on UpCOM because the results showed a positively cumulative rate of return increase by 26.79%. It implies that if the additional issuance of listed banks on both HOSE and HNX in the period 2009÷2020 had just caused the share prices going down by -39.35% and -19.39% respectively. The research on additional issues of listed banks, obviously provided evidences of prolonged downtrend in the share price, even causing losses for the shareholders if they don't sell shares. However, it is likely to bring opportunities for investors who's entering the market later and can take advantages when the share was going down for long.

3.6.3. Findings from regression analysis
3.6.3.1. *Effects of macroecomics, business performance and risk-return of bank shares*

Research results showed that the share price have positively affected by volatility of GDP, bank equity size, profitability, earnings per shares and risk structure of bank shares; while having negatively affected by market interest rates, money supply, gold price and liabilities of banks. The effect of GDP is proved across the whole sample and in all three groups of banks. Interest rates had its effect in the whole sample, and the effect was even more clearly in group1 and group2. The impact of money supply on the share price could be observed in the whole sample, and in group1 and group2. The impact of changes in gold price was clearly visible in all three groups. The impact of the exchange rate is clearly visible in all three groups. A rise in equity size of banks was clearly visible in group2, and changes in liabilities of liabilities are clearly observed in the whole sample, in groups 1 and 2. The effects of profitability, earnings per share were clearly seen across the sample, while actually ROA was most visible in groups 1 and 2; and ROE were only seen clearly in group 2. Besides, the impact of bad debt is more visible in group 3. Beta is clearly seen in the whole sample and for each group of banks.

3.6.3.2. *Effects of macroeconomics in interaction with business performance and risk-return of bank shares*

In the long run, economic growth is the decisive factor driving up the price of shares. The interactive effect of GDP along with the growth of capital mobilization by banks in the economy, including an increase in additional size of issuance. Sound business performance is reflected in profitability ratios, and earnings per share, and they have a positive impact on the stock price in the long run. However, credit expansion is risky because the size of non performing loans increases, which does not support stable growth of share prices. The facts also show that the market risk of the bank share fluctuates with the bank share price. In growth period of economic circle, interest rates and inflation is often observed to increase gradually, and they are associated with higher credit demand of all economic sectors and the gradually growth of listed bank share prices. If the money supply increases stably and the gold price does not rocketly rise, it will reduce the negative impact on the share price. The foreign exchange management policy accompanied by maintaining the target range can help banks not be subject to strong fluctuations. However, problem arising with exchange rate fluctuations, even an economic growth period is seen unfavorable condition for the stable growth of listed bank shares belonging to the large and medium sizes.

CONCLUSION FOR CHAPTER 3

Chapter 4: RECOMMENDATIONS WITHDRAWN FROM THE STUDY OF DETERMINANTS OF SHARE PRICES OF JOINT STOCK COMMERCIAL BANKS LISTED ON VIETNAM'S SECURITY MARKETS

4.1. GLOBAL BANKING CONTEXT AND DEVELOPMENT TRENDS OF DOMESTIC JOINT STOCK COMMERCIAL BANKS LISTED ON VIETNAM'S SECURITY MARKETS

4.1.1. Global economic and banking context
4.1.1.1. Global economic context

The US-China political-economic tension, the re-organizing in the post-Brexit period, the oil war between Russia and the Middle East countries, the SARS-CoV-2

epidemic crisis with governments' efforts to bring back the economy to "New normal" have put a lot of stress on the world economy. Recently, the Russian military campaign on Ukraina also bring a lot of negative impact. The world GDP shrank by -3.5% (in 2020), by 5.9% (in 2021) and estimated to shrink by 4.3% (in 2022) and by 3.1% (in 2023). Oil and gasoline prices increased by 25-35% in the first quarter of 2022 (McKinsey, 2022).

4.1.1.2. Remarkable trends of global banking in upcoming years

According to KPMG (2022) and World Bank (2022), global banking is promoted into higher levels: (i) restructuring branch networks towards reduction of physical branch numbers but expanding types of services; (ii) digital transformation focusing on upgrading banking technology infrastructure and enhancing service capacity; (iii) expanding and restructuring the Call center networks; (iv) developing a portfolio of financial services integrated and synchronized with the e-commerce portfolio, thereby connecting with online businesses; (v) promoting cashless payments.

4.1.2. Economic context and prospects of joint stock commercial banks listed on Vietnam's security markets

4.1.2.1. Socio-economic context of Vietnam

Since 2020, Vietnam has experienced 4 waves of SARS-CoV-2 epidemic with significant losses of life and property, despite being one of the leading countries successfully with vaccination program. Vietnam was also one of the countries achieving a positive economic growth rate of 2.8% in the first year of pandemic. According to the GSO (2022), GDP growth rate in the second quarter of 2022 is 6.1%, which is lower than the same period in 2021 (6.61%); meanwhile GDP growth in the first quarter of 2022 reached 5.03%, which is higher than the same period in 2021 (4.72%). In in upcoming years, Vietnam's economy will recover faster, however, still facing negative effects resulting from political and economic crisis between Western countries and Russia.

4.1.2.2. Development prospectus of joint stock commercial banks listed on Vietnam's security markets

Business prospectus

Retail banking development: Strong growth in the period 2021÷2025 with the urban population growth rate of 2-4%/year and expansion of economic sectors. The capital mobilization of banks from institutions and households is expected to increase by 35÷40%. Since 2020, the SBV has issued Circular No. 01/2020/TT-NHNN dated March 13, 2020 guiding the implementation for supporting SMEs during SARS-CoV-2 pandemic with sound policies to recover in the new normal.

Establishing long term relationship with financial holdings and large business groups: Focusing on lending to financial institutions and big business clients in the period 2021-2025. Also, accelerating and encouraging transactions among financial institutions in the interbank markets are the trends in upcoming years.

Financial investments: In the period of 2021-2025, financial investment of joint stock commercial banks mainly focuses on the portfolio of Government bonds and corporate bonds ratings by qualified credit rating agencies. Meanwhile, transactions with large organzations abroad will be expanding, especially in the international monetary markets.

Digital banking: Digital banking development has been urging for listed bank in general and the banking networks in particular under the context of 4.0 era. Listed banks under restructuring and synchonizing to promote the "digital banking" and non-cash payments with stakeholders outside the banks. Developments on digital currency are also seen an evitable trend to keep pace with the current development of global banking.

Financial consulting: Developing financial consulting services will be expanded by joint stock commercial banks in the future, especially services for individual and priority customers. In this regard, SBV continues to study and withdraw experiences from international central banks and governments, so that modern banking will be boost in Vietnam in all aspects.

4.1.2.2. Prospectus for charter capital development

Based on current policies and regulations, joint stock commercial banks are going to meet the requirements for increasing charter capital according to the roadmap and following specific targets written in Decision No. 986/QD-Ttg of the Prime Minister. In addition, large size banks continue to comply with Decree No. 121/2020/ND-CP and the provisions of Decree 01/2014/ND-CP to ensure the rate of share ownership of foreign investors.

4.2. GUIDLINES AND PRINCIPLES ORIENTING RECOMMENDATIONS IN SCOPES OF THIS DISSERTATION

4.2.1. Orientation for reccomendations

(i) The recommendation should rely on the competency to assess and quantify the size effect, seasonality and variation of the bank share prices; (ii) they should be evaluated comprehensively by listed banks; (iii) listed banks should focus on effects of factors that were examined and verified; (iv) they should be eligible for individual investors, listed commercial banks, and implying feasible policies as prescribed by the Government, the National Assembly, the SSC and SBV.

4.2.2. Principles and guidance for reccomendations within scopes of this dissertation

4.2.2.1. Matching principles

(1) In line with the psychology and trading culture of investors; (2) In accordance with listed banks' lines of business; (3) In accordance with current regulations on information disclosure on the Vietnam's stock market; (iv) Based on the current situations of physical and technical insfrastructures of Vietnam; (v) In adaptation with new normal, and with the increasingly complicated political and socio-economic situations in the world.

4.2.2.2. Feasibility and Logics

They should be feasible for individual investors; the listed banks; state management agencies governing and monitoring banking, financial investments in financial markets.

4.2.2.3. Principle of flexibility

Proposing recommendations to promote positive impact, minimize negative impact in respect of factors affecting the share price of listed banks in the direction of flexibility and openness, so that to adapt with current situations as well as business requirements in reality. Areas for recommendations need to comply with current laws and regulations, and harmonize with business customs in Vietnam and abroad.

4.2.2.4. Synchronization principle

Recommendations made must consider all aspects and government policies, regulations for financial market management, principles and memorandum of listed banks. Furthermore, recommendation must be originated from in the real issues that the listed banks are facing in the future.

4.3. RECCOMENDATIONS TO PROMOTING THE SUSTAINABLE DEVELOPMENT OF VIETNAM'S STOCK MARKET

4.3.1. Recommendation to individual investors

4.3.1.1. Improving financial literacy of individual investors with regard to understandings of characteristics and behavior of listed bank share prices

Recommendations include: (i) Building self-confidence, objective mindsets as to watching and receiving comments, daily news in the public about share price fluctuations, as well as information related to additional issuance; (ii) Being proactive with decision making based on self-improving on competency to read, understand, and analyze banking activities and associated risks arising in banking operations; (iii) Identify the characteristics and behavior of each listed bank share by updating information of the bank and the share, enhancing capabilities to capture naratives of each bank share.

4.3.1.2. Improving fundamental analysis skills with regards to determinants of share prices in general and listed bank share prices in particular

(i) Besides utilizing periodical reports on business sector using fundamental analysis published by institutional investors and security companies, individual investors should improve fundamental analysis skills, and focus on the impact of the macro-economic factors in interaction with instiutional performance of banks, so that they can evaluate the size and magnitude of these effects; (ii) individual investors need to utilize analysis results to qualify shares for their investment portfolio; (iii) investors need to strengthen capacity to read information in financial statements, managerial information related to listed banks, so that developing better understandings about instrinsic value of bank shares.

4.3.1.3. Identifying determinants of share prices applied for each specific group of banks

Among 03 groups of banks, individual investors should identify key factors that applied to inteprete the behavior of share prices belonging to that group. Besides, they should clarify differencies and similarities regarding behavior of bank shares in each groups.

4.3.1.4. Other recommendations to individual investors

First, improving skills and application of modern technology such as artificial intelligence, machine learning models to forecast behavior of listed bank share prices.

Second, allocating personal investment funds rationally based on determinants of bank share prices.

4.3.2. Recommedations to listed banks in order to protect individual investors

4.3.2.1. Proper timing to harmonize the interests of the issuers and of investors

(i) Choosing proper time for additional issuance with throughout consideration on liquidating effect and negative impact on small shareholders; (ii) Scheduling a roadmap for rising charter capital on the basis of considering the business circle and harmonization of stock offerings; (iii) Improving competency in focasting ecnomic growth, early warnings on economic crisis.

4.2.3.2. Diversifying forms of additional offerings

Applying 05 forms of additional offerings as suggested in the dissertation, which include rights to buy shares to current shareholders of the banks, ESOP, divident payment stocks, private offerings to strategic partners, public offerings and bonus shares. For example, ESOP could motivate employees and build up long term relationship between key employees and task forces for the banks. If the banks just focus on public offerings without taking into consideration the liquidation of shares might cause risks for shareholders.

4.2.3.3. Reccomendations to strengthening security for banking operation, ensuring stable development and motivating individual investors by protecting their benefits

Recommendations include: (i) improving and completing competency regarding business planning associated with forecasting interest rates, gold prices, inflation, exchange rates in order to entirely adapt to practical situation and market conditions, maintaining credibility with individual investors; (ii) maintaining effective management and improving business performance, ensuring an stable growth of retained earnings as a driving force to increase charter capital and equity; (iii) ensuring to improve effectiveness of financial disclosure, reducing asymetric information, providing investors with transparent financial statements and managerial reports, building up a concrete business plans, preparing and concentrating to improve workforces; (iv) providing investors with reliable information about prospectus of bank shares.

4.3.2. Implications for regulators towards ensuring benefits for individual investors

4.3.3.1. Implications for the State Bank of Vietnam

Implications for SBV include: (i) the capital raising process of joint stock commercial banks should be in line with the current situation and practical context of each join stock commercial banks and economic circle; (ii) improving databases and statistics as well as capacity in forecasting fluctuations in the stock markets and updating new developments in international financial markets.

4.3.3.2. Implications for Ministry of Finance and State Security Commision of Vietnam

The implications include: (i) completing the restructuring and unifying HOSE and HNX in all aspects, mainly including management, clarifying functions of each managerial level; (ii) completing regulations on the listing standards for business industry, especially the banking industry; (iii) strictly imposing policies with clearer guidance on auditting the financial statements of those banks who plans for additional issuance and dividend policies. (iv) consulting and providing favorable conditions for all joint stock commercial banks to participate in listing or trading on Vietnam's stock market.

CONCLUSION FOR CHAPTER 4

FINAL CONCLUSION OF THE DISSERTATION

Research on factors affecting stock prices of joint-stock commercial banks listed on the stock market is of importance as the research results can be a useful source of reference for investors, issuers and state level management agencies on bank share in security market and in Vietnam. Investors need better understanding of equity, and cyclical and seasonal effects on stock price movements, strengthening competencies with fundamental and technical analysis methods learning on valuation of share price. Especially, they should identify reliable sources of information and avoid situations arising irrational psychology.

In stock market, information disclosure of listed banks are more transparent than other business industries, creating more favorable conditions for investors to valuating the bank share prices. On the issuer's side, maintaining the attractiveness of bank shares while achieving charter capital rising target is arising conflicted interests between dominant shareholders and small shareholders. In this regard, they should realize the right time to carry out additional issuance on bank stocks. As for the regulatory agencies, in order to be able to support investors and issuers to stabilize the market, it is necessary to make appropriate policies and harmonize the interests of the parties.

In this regard, this dissertation entitled ***"The study of determinants of listed bank share prices on Vietnam's security market"*** *has achieved the following results:*

New contributions can be found in the dissertation towards the systemization and clarification of fundamental issues about shares and share prices in general, and key factors affecting share prices of listed commercial banks in Vietnamese securities market in particular. In this regard, it can serve as a useful reference for investors, management of listed banks, banking regulators, agencies under state security commision; and researchers, whomsoever study determinants of bank share prices or identify effective decision making that pertains to sustainable development of Vietnam's stock market. In respect of methodology, a combination of qualitative approach and quantitative approach with deployment of panel data and multivariate linear regression models would help quantify effect size and magnitude of determinants of bank share price in the period between Q1.2009 and Q4.2020. New contribution relates to the construction of interactive variables among macroeconomic indicators, operational performance, and market risk and returns of 13 listed bank stocks.

First, exported results from quantitative analysis of the determinants of share price volatility using Robust S.E regression models suggested that factors associated with the positive impact on the bank share prices of 13 listed banks, and each among three groups of banks based on the equity size during Q1.2009÷Q4.2020 include: (i) *GDP*, (ii) consumer price index *CPI*, (iii) asset use efficiency *ROA*, and (iv) *beta*; but the contrary factors having negative impact include *VnIbor*, *FX* rate, and *NPL*. Other factors with respect to different impact size and magnitude on the bank share prices identified also include *M2*, *Gold*, *IIP*, *EquityC*, *DebtC*, *ROE*, and *EPS*. In the economic growth period associated with stable growth of *VnIbo*r and *CPI*, with the expansion of *IIP* and accompanied improvements of *EquityC*, *DebtC*, *ROA* and *ROE*, positive effect on bank share prices could be found. However, *NPL* and bank share prices were likely to be in opposite directions. This facts help recognize major factors driving the volatility of bank share prices in the Vietnam's stock market during 2009÷2020.

Second, results produced by analyzing the seasonal variation of 13 listed bank share prices enlightened conclusions on the different ranges of average price volality in each quarter followed by cyclical pattern of the market.

Third, primary data collected from survey of individual investors help clarify investors' sentiment factors, ie., lack of professional skills and knowledge, biases attitudes and irrational behavior etc., that are expected to be corrected, helping strengthen conclusions about relationship between market sentiment and stock price volatility of 13 listed banks.

Fourth, analysis of seasonal issuance of bank shares and its effect on price volatility was presented in Appendix parts of the end of the dissertation, also contributes to identify the

impact of supplementary issue on abnormal returns of bank shares, drawing on conclusions about the negative effect of additional issuance on bank share prices.

Fifth, the dissertation finally reviewed trends in global banking and developments of Vietnamese banks throughout severity of SARS-CoV-2 and recovery in the new normal, thereby making suggestions for recommendations to the relevant participants. These foundations help propose 04 groups of recommendations to individual investors, 03 recommendations to management of listed commercial banks, and agencies under the State Bank of Vietnam, the Ministry of Finance and the State Securities Commission for sustainable development of Vietnam's security market.

In summary, the factors affecting the share price of listed joint-stock commercial banks are closely related to the contemporary issues in Vietnam's stock market, especially in the context that the market is transitioning from a frontier market to an emerging market. Analyzing the affected size and magnitude of internal and external factors has some achievements, thereby supporting investors and other stakeholders with better understandings of determinants of listed bank share prices, promoting the stable growth of Vietnam's stock market in the long run. Findings, recommendations and implications withdrawn from the dissertation results can contribute to the existing literature, narrowing down research gap about bank share price and its determinants. Despite much effort of the author has been devoted during the work, it could not avoid limitations and shortcomings, the author is willing to cooperate with researchers abroad and in Vietnam to have deeper research on this topic in the future.