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**IMPROVING THE PROJECT FINANCIAL APPRAISAL AT
HOUSING AND URBAN DEVELOPMENT CORPORATION**

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SUMMARY OF DOCTORAL THESIS

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At.....hour.....date.....month.....year

PREFACE

1. The necessity of the thesis

Investment is one of the main activities, deciding the development of an enterprise. Investment activities of enterprises are often conducted in a concentrated manner according to projects. No matter how carefully prepared and analyzed a project, it still shows the subjectivity of the project founder. Therefore, in order to ensure objectivity and maximum prevention of possible risks in investment, project financial appraisal should be considered one of the top priorities of the business. Moreover, project financial appraisal also helps businesses eliminate ineffective investment projects, find good investment opportunities, avoid damage and waste of resources; is the basis for making decisions to select the most suitable project for investment; Project financial appraisal is also a mandatory procedure for projects requiring loans from credit institutions.

Project financial appraisal has been concerned by many businesses. Thanks to the financial appraisal, many projects have been implemented and operated effectively. However, many shortcomings arising in the project financial appraisal process have resulted in project financial appraisal goals not being realized, causing great losses for many businesses. The Housing and Urban Development Corporation (HUD) is no exception. HUD is a state-owned enterprise operating in the field of construction and real estate service, is also the leading enterprise in the property market with a large number of projects. With its importance, the need for financial appraisal of HUD projects is also great. Without improving the project financial appraisal, the effectiveness of the projects will be reduced, and the development of HUD will be unsustainable. Therefore, the author has chosen to study the financial appraisal of projects at HUD in the thesis: “*Improving the*

project financial appraisal at Housing and Urban Development Corporation”.

2. Research objects and scope

- Research objects: Financial appraisal of the enterprise's projects.
- Research scope:

The research space: Financial appraisal of new construction investment projects at Housing and Urban Development Corporation (HUD).

The research period: The secondary data in the 2011 - 2020 period.

3. Research objectives

Research purposes: Propose the solutions to improve financial appraisal of projects at HUD;

Research tasks: (i) Systematize the theoretical issues of financial appraisal of the enterprises' projects; (ii) Analyze and evaluate the current status of financial appraisal of projects at HUD; (iii) Propose solutions to complete the financial appraisal of projects at HUD.

4. Research questions

The thesis: "Improving the project financial appraisal at Housing and Urban Development Corporation" aims to explain the following questions:

(i) What is the project financial appraisal? What are the contents of Project financial appraisal? What criteria are used to evaluate the completion of project financial appraisal? (ii) What are the factors affecting project financial appraisal of enterprises? (iii) What is the current status of project financial appraisal at HUD? (iv) What are the reasons for the limitations in the project financial appraisal at HUD? What are the solutions to improve the project financial appraisal at HUD?

5. Research methods

In the thesis, the author uses the following economic research methods: (i) Document research method: collection, synthesis, analysis; Crystal Ball software for the risk appraisal; (ii) Non-experimental methods

include: in-depth interviews with leaders of some enterprises, indirect interviews via email, investigation through questionnaires.

6. Literature review and research gap

6.1 Literature review

The author has studied 19 domestic and foreign works related to the topic, focusing on the following contents: Discount rate; Appraisal techniques; Project risks; Econometric models; Appraisal contents.

6.2 Research gap

Through the studied researches, the author has a number of conclusions: (i) The researches highly recommend appraisal methods and techniques in terms of theory; however, there are few studies on the financial appraisal of enterprises' projects; (ii) Studies that have little mention of the project's risk analysis, if any, simply use the simple method of sensitivity analysis or case analysis; (iv) There are studies that provide basic theoretical directions, have not yet deployed applications to specific projects of enterprises; (v) Some studies also mention risk analysis techniques including Monte Carlo simulation techniques. However, these studies only guide the practice of project analysis techniques in general, and it is difficult to apply to enterprises in economies with weak information and incomplete statistics like Vietnam.

From the above comments, the PhD student has identified the research gaps of the thesis: (i) Researching the process, method and content of the financial appraisal of a new construction project in the enterprise operating in real estate investment and business field; (ii) Using Crystal Ball software to analyze project risks when there are simultaneous fluctuations of many inputs.

7. New contributions of the thesis

The thesis has the following new contributions: (i) Systematize and clarify the problems of project financial appraisal of enterprises; (ii) Synthesize the lessons learned from project financial appraisal of some

domestic and foreign enterprises; (iii) Analyze the current status of financial appraisal of new construction investment projects; (iv) Use simulation analysis through Crystal Ball software to assess project risk at HUD; (v) Propose solutions to improve the financial appraisal of projects at HUD.

8. Structure of the thesis

In addition to the introduction, conclusion, list of reference and appendices, the thesis is divided into 3 chapters:

Chapter 1: Theoretical basis for the project financial appraisal of the enterprise

Chapter 2: Current status of the project financial appraisal at Housing and Urban Development Corporation

Chapter 3: Solution to improve the project financial appraisal at Housing and Urban Development Corporation.

Chapter 1: THEORETICAL BASIS FOR THE PROJECT FINANCIAL APPRAISAL OF THE ENTERPRISE

1.1. OVERVIEW OF THE PROJECT AND PROJECT APPRAISAL OF THE ENTERPRISE

1.1.1. Project of the business

1.1.1.1. Long-term investment of the enterprise

Long-term investment of an enterprise is the activity of investing capital to purchase and build, forming tangible fixed assets (fixed assets) and intangible fixed assets, forming the amount of regular working assets needed in accordance with a certain business scale or to contribute capital to a long-term joint venture, to buy stocks and bonds of another entity to gain profits.

1.1.1.2. Project of the business

A project is a specific set of activities carried out over a certain period of time and limited by resources (human, material, and financial) to achieve a specific goal.

1.1.2. Project appraisal of the business

1.1.2.1. Concept and necessity for project appraisal

Project appraisal is a consistent process of reviewing, examining, and re-evaluating the project scientifically, objectively and comprehensively based on certain standards in all financial, socio – economic aspects aims to measure the effectiveness as well as the feasibility of the project to help investors make decisions whether to implement investment or not; Enterprises need to appraise the project because: the project appraisal results are the basis for the capital sponsor to make funding decisions, for investors to make investment decisions; for state management agencies to issue investment licenses.

1.1.2.2. Content of the project appraisal

The contents of project appraisal include: Technical appraisal; Environmental impact assessment; Socio-economic appraisal of the project; Financial appraisal of the project.

1.2. THE FINANCIAL APPRAISAL OF PROJECTS IN THE ENTERPRISE

1.2.1. Concept of the project financial appraisal

Financial appraisal of the enterprise's project is the scientific, objective, comprehensive financial review and reassessment of the project to measure the effectiveness of the project, creating a basis for the investment decision of the enterprise.

1.2.2. Process of project financial appraisal

The process of project financial appraisal includes the following steps: Determine the important indicators of the project; Check the reliability of the indicators; If the indicators have not reached the reliability, they will be rebuilt; Examine the scientific and practical basis in project formulation method; If it does not meet requirements, it should be rebuilt scientifically and practically; Evaluate the project results table according to the level of optimism; If it does not meet requirements, the project is rejected, if it

achieves sensitivity level according to the main indicators in the cases; Based on the results table according to the sensitivity level (or recommend to reject the project) the enterprise can make conclusions and decisions.

1.2.3. The methods of project financial appraisal

1.2.3.1. The method of comparing the criteria

This method compares the main financial indicators of the project with the other projects that have been built or are operating.

1.2.3.2. The method of financial appraisal in an orderly manner

Project financial appraisal is conducted from general to detailed stage. The general appraisal is to detect irrational issues that need to be considered. The detailed appraisal is conducted directly or through recalculation of the criteria mentioned in the project.

1.2.3.3. The financial appraisal based on the risk analysis

This method foresees a number of possible situations such as exceeding investment costs, low output, increased input costs, decreased product consumption prices, and choose the most important factors that have an adverse effect on the performance of the project. If the project is effective in the worst scenario, it is highly secure. If it is not effective, it is necessary to review the possibility of arising bad situations, and propose useful measures.

1.2.4. The contents of project financial appraisal

1.2.4.1. Appraising the total investment capital and capital needs according to the progress of project implementation

In this content, the financial appraisal officer must evaluate: the completeness of the items constituting the total investment capital, the appropriateness of the method of determining total investment, the capital needs for progress, the ability to ensure the project's capital sources and repayment.

1.2.4.2. Appraising the annual project revenues and expenses

Appraising the annual revenues from activities of projects including: annual revenue of the project; other revenues such as estimated value upon

disposal of fixed assets and recovery of initial or additional working capital (if any).

Annual production cost appraisal of the project needs to check: Cost of raw materials, fuel, electricity, water, packaging; labor costs; depreciation; other expenses such as costs of periodic machinery maintenance and repair, etc; Check the cost of using bank loans; Examine taxes that apply to the project.

1.2.4.3. Appraising the project's cash flow

The project's cash inflow includes: Annual net cash flow from operating activities; Net cash amount from liquidation of fixed assets; Regularly recover working capital at the end of the project.

The project's cash outflow includes: the cost of construction investment and the cost of working capital.

Annual net cash flow = Total annual cash flow - Total annual cash outflow

Or: Project's annual net cash flow = Net operating cash flow - Increased new investment (if any) + (-) Frequent changes in working capital + Net revenue from liquidation of fixed assets (1.1)

When appraising the cash flow of the project, people use two points of view: Total Investment Point of view (TIP), also known as a bank's viewpoint when approving loans to projects, regardless of capital sources to evaluate the effectiveness of the project based on the value of net cash flow generated by the project.

The project's annual net cash flow from the FCFF point of view is determined as follows:

*FCFF = EBIT * (1-t) + Depreciation of fixed assets - Increased new investment (if any) + (-) Regular changes in fixed assets + Net income from liquidation, sale of fixed assets*

Where: t is the corporate income tax rate.

- EPV (Equity Point of view)

EPV considers the remaining cash flow of the project after debt payment, in order to evaluate the efficiency and risks of equity in case of borrowing. Annual operating cash flow = profit after tax + Annual depreciation of fixed assets - Annual principal repayment

Applying to formula (1.1), we have the annual net cash flow of the project from the FCFE which is determined as follows:

FCFE = Profit after tax + Annual depreciation of fixed assets - Annual principal repayment - Increased new investment (if any) + (-) Change in regular working capital + Net income from liquidation or sale of fixed assets

1.2.4.4. Appraising the project's discount rate

The discount rate is used to discount the project's cash flow to the present, which is the cost of capital that the business must pay when raising capital for the project. Appraisal of the discount rate of the project is performed as follows:

a. When the project is financed entirely by equity

Cash flow from the investment point of view is the cash flow from the owner's point of view. Thus, the discount rate is the opportunity cost of equity.

In this case we will choose:

Discount Rate > = Opportunity Cost of Equity

The cost of equity can be determined by the investor's expected return rate; using the dividend discount model or the CAPM model.

b. When the project is financed by the owner's equity and debt

- From the total investment point of view: the discount rate is calculated based on the weighted average cost of capital WACC.

$$WACC = \frac{D}{(D + E)} r_d (1-t) + \frac{E}{(D + E)} r_e$$

Where: D is loan capital; E is equity; (D + E) is the total investment capital of the project; t is the corporate income tax rate; r_d is the interest rate of the loan; r_e is the cost of equity of the business.

r_e in the above formula is determined specifically as follows: If the capital structure of the project is the same as the capital structure of the enterprise, r_e is determined as described in (a) section (1.2.4.4); If the capital structure of the project is different from the capital structure of the enterprise, we calculate the WACC according to the theory of Modigliani and Miller (MM) with the assumption that the annual loan amount is fixed as follows:

$$r_{e \text{ adjusted}} = r_e + (1 - t) * (r_e - r_d) * (D/E) \quad (1.7)$$

- From the owner's point of view

The discount rate is determined differently in two cases: If the capital structure of the project is similar to the capital structure of the enterprise, the discount rate is calculated as part (a) of item (1.2.4.4); If the capital structure of the project is different from the capital structure of the business, the discount rate is readjusted, calculated by the formula (1.7) part (b) item (1.2.4.4)

1.2.4.5. Appraising the financial effect indicators

a. Net Present Value (NPV)

$$NPV = \sum_{i=0}^n \frac{B_i - C_i}{(1 + r)^i} = \sum_{i=0}^n \frac{CF_i}{(1 + r)^i}$$

Where: B_i is the cash inflow of the project in year i ; C_i is the cash outflow of the project in year i ; n is the life of the project; r is the discount rate; $CF_i = B_i - C_i$ is the net cash flow of project. If $NPV < 0$, the project is not feasible; $NPV \geq 0$, the project is accepted.

b. Internal rate of Returns (IRR)

$$IRR = r_1 + (r_2 - r_1) * x \frac{NPV_1}{NPV_1 + |NPV_2|}$$

Where: r_1, r_2 are interest rates respectively, at which we have corresponding value $NPV_1 > 0$ and progress to 0; $NPV_2 < 0$ and progress to 0. IRR is the discount rate that makes $NPV = 0$. If: (i) $IRR < \text{discount rate}$, the project is rejected; (ii) $IRR = \text{discount rate}$, depending on specific case, the company will decide whether to choose the project or not; (iii) $IRR > \text{discount rate}$, the project is accepted.

c. *Benefit cost ratio (B/C)*

$$\frac{B}{C} = \frac{\sum_{i=0}^n \frac{B_i}{(1+r)^i}}{\sum_{i=0}^n \frac{C_i}{(1+r)^i}}$$

B_i is the cash inflow of the project in year i ; C_i is the cash outflow of the project in year i ; n is the life of the project; r is the discount rate. Principles of project selection: (i) $B / C < 1$, the project is not accepted; (ii) $B / C \geq 1$, the project is accepted.

d. *Profitability index (PI)*

$$PI = \frac{\sum_{i=1}^n \frac{B_i - C_i}{(1+r)^i}}{CF_0}$$

Where: B_i and C_i are cash inflows and cash outflows of the project ($i = 1, 2, \dots, n$); CF_0 is the initial investment; r is the discount rate. Principle of project selection: (i) $PI < 1$, project is not accepted; (ii) $PI \geq 1$, the project is accepted.

e. *Pay-back Period (PP)*

Payback period is the time required for the project to recover its invested capital. Principles of project selection: (i) If the payback period of the project is $<$ the time norm, the project will be selected; (ii) If the payback period of the project is \geq the time norm, the project will be rejected.

1.2.4.6. Appraising the project's risks

The appraisal of risks can use the following three basic techniques: (i) Sensitivity analysis; (ii) Scenarios analysis (Scenarios); (iii) Monte Carlo simulation using Crystal Ball.

1.2.5. Factors affecting project financial appraisal of the enterprise

1.2.5.1. Group of subjective factors

The subjective factors include: (i) Process, content and method of financial appraisal of the project; (ii) Quality of information provided for financial appraisal of the project; (iii) Qualifications and moral qualities of the project's financial appraisal staff; (iv) Organizing financial appraisal of the project; (v) Equipment and technology for financial appraisal of the project.

1.2.5.2. Group of objective factors

The objective factors include: (i) A stable economic environment will reduce the risks of the project and vice versa; (ii) Legal environment such as mechanisms and policies, the consistency of the legal document system.

1.3. EXPERIENCE OF FINANCIAL APPRAISAL OF SOME BUSINESSES AND LESSONS FOR HOUSING AND URBAN DEVELOPMENT CORPORATION

1.3.1. Experience of the project financial appraisal of some businesses.

1.3.1.1. Experience of some foreign businesses

When appraising a project, it is necessary to focus on the investment capital preparation plan; the criteria for appraising the financial efficiency of the project in accordance with the business objectives in each period; need to use modern methods to determine the correct and sufficient discount rate; the simulation method should be applied in risk appraisal.

1.3.1.2. Experience of some Vietnamese businesses

Experience of some Vietnamese corporations: (i) Project appraisal mechanism is centralized control mechanism through Appraisal Council;

(ii) Setting a capital budget limit to help avoid spreading investment; (iii) When appraising the cash inflow of the project, avoiding optimistic forecasts, applying various methods to determine reliable revenue forecast; (iv) Developing a set of cost of equity for each investment area as a basis for the appraisal process of new projects; (v) Financial appraisal staff must have a university degree or higher; prioritizing the use of professional appraisal consulting services; (vi) Focusing on quality of appraisal information sources; (vii) Developing a scientific appraisal process.

1.3.2 Lessons learned for Housing and Urban Development Corporation

Lessons learned for HUD: (i) Cash flow appraisal must adhere to the principle of prudence; (ii) Discount rate appraisal is conducted by determining WACC, determining the cost of equity using advanced techniques; (iii) Risk appraisal must be respected, applying modern techniques such as Monte Carlo simulation analysis; (iv) Project financial appraisal staff must have experience, university degrees or higher, proficiency in technology, always updating new techniques in the field of financial appraisal; (v) Facilities should be modern to meet analytical requirements such as computers and supporting software.

Chapter 2: CURRENT STATUS OF THE PROJECT FINANCIAL APPRAISAL AT HOUSING AND URBAN DEVELOPMENT CORPORATION

2.1. OVERVIEW OF HOUSING AND URBAN DEVELOPMENT CORPORATION

2.1.1. History, development and organizational structure of HUD

Housing and Urban Development Corporation, formerly known as Housing and Urban Development Company, was established on October 10, 1989. For more than 30 years of construction and development, Housing and Urban Development Corporation is a one-member limited liability company with 100% charter capital owned by the State, whose

international transaction name is: HOUSING AND URBAN DEVELOPMENT CORPORATION. The abbreviated name is: HUD. HUD's organizational model is the parent company - subsidiary company model

2.1.2. Business activities of HUD

Table 2.1 Income statement of HUD in the period of 2011 – 2020

Unit: Billion VND

Years	Gross output	Investment value	Revenue	Profit before taxes	Paid to National budget
2011	10.098	6.063	8.600	797	506
2012	8.359	4.071	5.006	281	591
2013	7.112	2.167	4.884	361	392
2014	8.258	2.737	7.758	411	780
2015	8.767	2.386	7.570	407	671
2016	8.885	3.066	7.732	532	624
2017	9.452	2.774	7.920	625	672
2018	9.985	3.482	7.870	652	698
2019	10.300	3.779	8.335	649	814
2020*	11055	4081	8650	685	1550

() Planned figures*

- In the period of 2011-2015: Business value, investment value, revenue and profit tend to decrease due to spreading investment, far exceeding the company's financial and corporate governance capacity.

- In the period of 2016-2020: HUD has organized and rearranged business activities. HUD focuses mainly on real estate investment and business real estate.

2.2. CURRENT STATUS OF PROJECT FINANCIAL APPRAISAL AT URBAN AND HOUSING DEVELOPMENT CORPORATION

2.2.1. An overview of HUD investment projects

- In the period of 2011-2015: The number of projects of the parent company decreased sharply; In 2015, the number of projects decreased to

26 with an investment value of VND 1,128 billion, 3 times lower than 2011. The situation is similar to its subsidiaries. In 2011, the subsidiaries implemented 71 projects with an investment value of VND 2,622 billion. By 2015, the number of projects was only 47 with a value of VND 1,258 billion.

- In the period of 2016 - 2020: The stability in the organizational apparatus helps HUD's investment activities to have positive changes. The investment value of the projects reaches VND 3,000-4,000 billion. HUD also narrows the scope of investment to improve the quality and efficiency of projects. The projects only focus on the real estate sector with the proportion of 98% - 100%.

2.2.1.1. The speed of increasing the number of projects

- In the period of 2011 - 2016: The number of parent company's projects decreased the most in 2015. Compared to 2014, the number of projects decreased from 35 projects to 26 projects corresponding to the reduction rate (-25.7%)... For subsidiary companies, the number of projects with the strongest decrease was only 43 projects in 2013 compared to 66 projects in 2012, corresponding to a reduction rate (- 34.8%).

- In the period of 2016-2020, the number and value of investment projects continue to decrease. However, this reduction is appropriate because this is the period when HUD realizes investment activities, helps businesses focus on projects being implemented with better quality and efficiency.

2.2.1.2. The speed of increasing the projects' size

In 2016, HUD withdrew its investment from joint ventures and associates. HUD also reduced investment in subsidiaries and focused on development of projects in the parent company. Therefore, by 2018, the investment scale of the parent company increased by 26.2% compared to 2017. In 2020, both the parent company and its subsidiaries saw the stable growth with the rate of 7.1% and 5%, respectively.

2.2.2. Current status of the project financial appraisal at Housing and Urban Development Corporation

2.2.2.1. The project financial appraisal process at HUD

HUD does not develop a particular financial appraisal process. This company has issued a general project appraisal process that specifies the financial appraisal assigned to the Finance and Accounting Department. The steps to perform the financial appraisal of the Finance and Accounting Department are quite similar to the financial appraisal process mentioned in Section 1.1.2.

2.2.2.2. Current status of the appraisal methods at HUD

The financial appraisal officers will review the entire project, then conduct a detailed appraisal of each project's spreadsheet, compare its specific targets with the regulations of the Ministry of Construction and the Ministry of Finance. There is no case that the appraisal officers make changes to the important indicators, having a great impact on the project to conduct recalculation.

2.2.2.3. Current status of the contents of project financial appraisal at HUD

a. Appraising the total investment

Appraisal of construction costs, equipment investment costs, other costs. Check the rationality of capital structure; capital allocation and the ability to secure capital.

Determination: Debt repayment source = Gross profit + depreciation.

b. Appraising the revenues and expenses

- The revenues include: (i) The revenue of the projects is determined by HUD based on the capacity and selling price of the project's products according to the market situation at the time of project formulation; (ii) Liquidation of fixed assets only includes net recovery value of fully

depreciated fixed assets, excluding the residual value of fixed assets which are not fully depreciated.

- Appraising the expenses: The operating expense of the project is checked and compared with the guiding documents; Tax payable and depreciation are implemented and compared with current regulations; Interest costs are appraised on the loan repayment table in terms of loan term, total annual payment.

c. Appraising the cash flow

- The appraised cash flow in typical projects of HUD from the point of view of total investment is calculated as follows: Annual net cash flow = - Initial investment + Annual profit after tax + Depreciation of fixed assets + Interest on investment capital

New investment costs (investment to replace fixed assets) are included in the total annual tax deductible expenses while still being depreciated.

The cash flow of some other projects from the owner's point of view is determined by the direct method as follows:

Cash inflow = Revenue + Deductible input VAT + Loan

Cash outflow = Initial investment cost + operating cost + CIT + Output VAT + Loan principal and interest

Net cash flow = Cash inflow - Cash outflow

d. Appraising the discount rate

All projects of HUD are using the bank loan interest rate as the discount rate.

e. Appraising the financial effect indicators: 3 indicators including NPV, IRR, PP are used at a very regular level of 100%; 100% of appraisers confirmed that the PI and B / C indicators are used occasionally.

f. Appraising the project risks: Author's survey data shows that at HUD, 30% of staff do not perform risk analysis. Of the 70% of staff who

did the risk analysis, the ratio of using sensitivity analysis and case analysis was equal, accounting for 50%, without simulation analysis.

2.2.2.4. Impact of the appraisal results on the effectiveness of the implemented projects

a. The rate of ineffective projects after appraisal

According to the data compiled by the author: (i) in the period of 2010 - 2012, the proportion of projects stalled and unable to hand over land and housing fund accounts for 17%; in the period of 2013 - 2015, the rate of projects not building and handing over technical infrastructure to the locality is 38.24%; In the of 2015-2018 period, the rate of ineffective projects is 27.9%. The Board of Members had a resolution to suspend 20 projects, of which 13 projects were handed over to the locality. HUD also delayed the progress, diverged investment, and delayed the implementation of 12 projects.

b. The rate of inventory of real estate projects implemented in comparison to total assets

Ineffective projects lead to a high inventory rate of 54, 79% - 56.14% in the period 2011 - 2016; The highest inventory rate was 68.34% in 2017, the lowest decrease was 50.69% in 2019 and returned to a high of 58.7% in the first 6 months of 2020.

2.2.3. Case study of project financial appraisal at Housing and Urban Development Corporation through HUD TOWER project

Financial results after project appraisal: NPV = 513,383,818,798VND; IR = 19.15%, payback period = 8.73 years.

2.3. ASSESSING THE CURRENT STATUS OF PROJECT FINANCIAL APPRAISAL AT HOUSING AND URBAN DEVELOPMENT CORPORATION

2.3.1. These achievements

The Corporation has built up a set of appraisal processes with clear assignment and assignment; Regarding financial appraisal techniques, the company pays attention to the inflation factor, calculates the investment

rate with comparison to other similar projects; The projects are adjusted in accordance with the reality and the adjusted content is consulted by many relevant departments; The project financial appraisal process always complies with the law.

2.3.2. Limitations and causes of the limitations

2.3.2.1. Limitations

Project financial appraisal at HUD has not met the requirements yet due to the following limitations: (i) Project financial appraisal reports lack accuracy; (ii) Project financial appraisal results have not been considered a reliable basis for making investment decisions.

2.3.2.2. Causes of the limitations

The subjective reasons include: The financial appraisal process has not been specified in a document in the HUD; The financial appraisal method is simple; The content of financial appraisal is still sketchy; The quality of financial appraisal officers is not high and uneven; Modern facilities to support the financial appraisal of the project have not been properly invested; The monitoring, analysis and management of information on the operation of the projects in progress have not been focused; HUD leaders have not paid attention to completing the financial appraisal of the project.

Objective reasons include: Inappropriate legal policies on compensation and site clearance cause projects to delay progress, leading to reduced financial efficiency; The economy has periods of freezing real estate, housing, and rental markets that cannot be fully anticipated by appraisers, especially for long-term projects; The State lacks research institutions to build a reliable market forecast information system to support enterprises.

Chapter 3: SOLUTIONS TO IMPROVE THE PROJECT FINANCIAL APPRAISAL AT HOUSING AND URBAN DEVELOPMENT CORPORATION

3.1 INVESTMENT ORIENTATION OF HOUSING AND URBAN DEVELOPMENT CORPORATION

3.1.1 Development orientation of Housing and Urban Development Corporation

Growth targets of the corporation: (i) Annual production and business value increases from 5% to 7%; (ii) Average annual revenue increases from 5% to 6%; (iii) Profit before tax increases by 6% on average annually; (iv) Pay to the State budget at the rate of 7% - 8% of annual revenue; (v) Total annual investment value reaches 30% - 35% of revenue.

3.1.2 Investment orientation of Housing and Urban Development Corporation

Housing and Urban Development Corporation has launched investment plans from 2021 to 2025 as follows: VND 4,306 billion; VND 4,564 billion; VND 4,861 billion; VND 5,133 billion and VND 5,415 billion, respectively.

3.2 SOLUTIONS TO IMPROVE THE PROJECT FINANCIAL APPRAISAL AT HOUSING AND URBAN DEVELOPMENT CORPORATION

3.2.1 Principles of improving the project financial appraisal

Solutions to complete project financial appraisal must ensure the principles: (i) comply with the law and be consistent with the development direction of HUD; (ii) respect for independence, objectivity, science and logic for the most accurate results; (iii) be consistent with business practices but must meet the requirements of information technology development and application; (iv) comprehensively implement the process, method, content, and so on.

3.2.2 Solutions to improve project financial appraisal at HUD

3.2.2.1. Improving the collection and management of appraisal information

Set up a specialized department to collect information on request, manage information according to content, store information of projects that have been implemented to best serve the financial appraisal of the project.

3.2.2.2. Improving the contents of financial appraisal

a. Improving the appraisal of the total investment and capital structure

HUD needs to determine a reasonable debt ratio in total investment; Find a method of active capital mobilization such as borrowing by bonds; Estimate the accurate funding source and fully prepare the project; Check the financial safety of investment capital, especially the project's ability to repay debt.

Correct calculation: Repayment source = Profit after tax + Depreciation + Interest

Determining the debt repayment plan ensures the principles: Total repayment in year “t” ≤ net cash flows the project generates in year “t”

b. Improving the appraisal of revenues and expenses

- Improving the appraisal of revenues:

Improving the revenue appraisal: (i) Determining the price of the project by taking the average price based on statistics of similar products on the market for prediction; (ii) The exploitation capacity of the project can be based on average data provided by reputable real estate market research firms; (iii) Calculating the average inflation index over a period of time or use forecast data of experts as a basis for calculating the inflation coefficient; (iv) Appraising and calculating the project's revenue with expected area and unit price per m² correctly, sufficiently and reasonably; (v) Noting the payment policy of the project for each sale. The actual cash flow of the project includes the payment if the client pays on time. The un-depreciated residual value of fixed assets must not be included in the revenue for tax deduction, leading to incorrect determination of profit after tax.

When appraising net income from liquidation of fixed assets, it is assumed that the value of fixed assets when they are no longer used is 0, so it does not care about the net value of the liquidation of fixed assets; For fixed assets that have not been fully depreciated, liquidation value is assumed to be equal to the residual value.

- Improving the appraisal of expenses:

HUD must arrange staff with extensive experience in calculating site clearance costs; fully calculating construction costs, selling expenses and other related costs; noting the cost of land use right tax and reasonable cost increase rate.

c. Improving the appraisal of cash flow

HUD should consider appraising cash flow from the two viewpoints of total investment and the owner will help corporate managers make more accurate decisions. When appraising cash flow from a total investment, the financial appraisal officer, in addition to using the free cash flow to the firm (FCFF) method as described in Chapter 1, the author proposes to apply the following method which is in line with practice and easy to understand when presenting to banks to apply for loans: Net cash flow = Profit after tax + Depreciation of fixed assets + Interest - New investment increase (if any) + (-) Change in regular working capital + Net income from liquidation, sale of fixed assets (*)

d. Improving the appraisal of discount rate:

If the total investment cash flow is determined according to the FCFF determination method, the weighted average cost of capital WACC with the tax shield must be calculated; if determined by the formula (*) as suggested in part (c) above, use the WACC without the tax shield; When appraising cash flow from the owner's point of view: if the capital structure of the project is the same as the capital structure of the business, the discount rate is the cost of equity of the business; If the capital structure of

the project is different from the capital structure of the business, the discount rate is the adjusted cost of equity.

e. Improving the appraisal of financial effect indicators

It is recommended that all projects use four commonly used calculation indicators in the world: NPV, IRR, PP and PI.

f. Improving the appraisal of risk

Proposing to use the simulation analysis method via Crystal ball software to assess risks and make reports to the company's managers.

3.2.2.3. Improving the financial appraisal process

HUD needs to clearly define the responsibilities of the financial appraisal department for better appraisal results; Financial appraisal process must be handled by specialists. Financial appraisers must be independently evaluated and able to make new assumptions.

3.2.2.4. Improving the financial appraisal method

HUD needs to use more modern verification methods such as risk assessment to assess the impact of volatile parameters with comparative indicators NPV and IRR, for reliable decision-making.

3.2.2.5. Improving the appraisal organizational activities

For projects that hire consultants, it is necessary to appoint experienced and qualified staff to assist them for the accurate assessment; The projects that are financially self-appraised by HUD need to be performed by experienced and qualified staff.

3.2.3. Applying solutions to improve project financial appraisal at HUD to reappraise HUD TOWER project

The Phd candidate recalculated the project's indicators such as the rental price, the commercial area, the discount interest rate, the rental rate, the operating costs, etc and reappraised the Hud Tower project for the results: (i) Total investment viewpoint NPV = 100,509,915,249 VND, IRR = 17.7%, probability of success = 57.2%; (ii) The viewpoint of the owner NPV = 100,533,754,264 VND, IRR = 18.6%, probability of success = 60.89%.

3.3. RECOMMENDATIONS TO IMPLEMENT THE SOLUTIONS

3.3.1. Recommendations for the National Assembly

3.3.1.1. It is necessary to review, amend and synchronize legal documents

- Ensuring the uniformity between the Law on investment and the Law on Land: the authority to permit land use change; procedures for land allocation, land lease; time of determination of land use demand, dossier-receiving agency.

- Ensuring the uniformity between the Law on Investment and the Law on Environmental Protection on environmental impact assessment when implementing the project.

3.3.1.2. It is necessary to relax regulations on house ownership in Vietnam by foreigners

Need to ease and have specific instructions on: ownership, transfer of land ownership, and money transfer after the end of the transaction.

3.3.2. Recommendations for the Government

3.3.2.1. The Government should study and propose more appropriate policies to promote and help businesses improve their capital capacity for development

Policies need to be studied: adjusting the project's land use tax payment term; providing medium and long term capital to the real estate market; establishing a real estate investment trust fund; adjusting the ratio between large and small apartments.

3.3.2.2. The government should quickly restructure the real estate market

Focusing on the segment of small apartments, houses for low-income people.

3.3.2.3. The government should soon allow securitization of real estate

Listing by project and issuing real estate certificates permitting free transfer.

CONCLUSION

On the basis of systematizing theoretical and practical research, the thesis has solved the following problems:

Firstly, the thesis has synthesized and analyzed the basic contents of project financial appraisal. These arguments are the basis for the appraisal of specific projects.

Secondly, the thesis has analyzed the current situation of project financial appraisal at HUD in order to draw out the limitations and the causes that lead to the limitations in project financial appraisal of the business.

Thirdly, the thesis has proposed solutions as well as recommendations to improve project financial appraisal in the enterprise, limit risks that may arise during project implementation, and improve high investment efficiency.

Fourthly, the thesis has used Crystal Ball software to assess risks in the condition that many important indicators of the project change. This is a validation step that is far superior to sensitivity analysis or situational analysis.

However, the author's thesis still has the following limitations:

Firstly, the data access is very difficult and limited. The surveyed subjects have not expressed their opinions clearly in their answers. Therefore, the generalization of the thesis may be affected.

Secondly, statistics for risk analysis are gathered from a variety of sources, which may affect the results of choosing the probability distribution of the data.

**LIST OF WORKS PUBLISHED BY THE AUTHOR
RELATING TO THE THESIS**

1. Le Thi Bich Nga (2019), “Risk analysis in investment appraisal based on the simulation method”, *Economy and Forecast Review*, No 6, 2/2019, page 56 - 58.
2. Le Thi Bich Nga (2019), “Calculate the discount rate in investment projects”, *Asia-Pacific Economic Review*, 1/2019, page 69 -71.