**MINISTRY OF EDUCATION AND TRAINING**

**THUONGMAI UNIVERSITY**

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**TRAN THI PHUONG THAO**

**THE IMPACT OF CAPITAL STRUCTURE ON FIRM PERFORMANCE OF**

**JOINT-STOCK COMPANIES LISTED ON VIETNAM STOCK MARKET**

**Major: Trading business**

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**Summary of PHD Thesis**

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# INTRODUCTION

**1. Rational of the study**

Vietnam's international economic integration activities have shifted to a deep and comprehensive deployment stage. However, developments in the world economic situation in recent years show that trade protectionism is increasing, seriously threatening the process of trade liberalization and global economic integration. In addition, trade conflicts between the United States and some partners, especially China, have a significant impact on the business activities of enterprises. In order to ensure the goal of maximizing firm performance, Vietnamese enterprises have constantly improved and researched advanced management methods, enhanced application of technology to support business activities. Firm performance of enterprises is influenced by many objective and subjective factors such as the political environment of law, the economic policy of the State, the business lines, the level of managers or financial conditions. In which capital is considered one of the factors that significantly affect the firm performance. The capital decision is expressed through the selection of the capital structure of each business.

Well-known theories in the world and empirical studies conducted by many authors on different countries prove the close relationship between capital structure and firm performance of enterprises. However, empirical studies indicate that many conflicting results show that this relationship depends quite a lot on the different economic context, the way of recording financial indicators or other research methods. Therefore, the problem is that it is necessary to build a two-step 2SLS research model with instrumental variables, the quantile regression model to solve the model's defects; develop a method of determining the average cost of capital of enterprises when capital structure changes, as well as assess the impact of capital structure on business performance in different economic contexts. Since then, the managers will have a specific and precise basis in the decision on capital structure of enterprises. Recognizing the importance of the decision on capital structure, the author chose the issue of "**The impact of capital structure on firm performance of joint-stock companies listed on Vietnam stock market**" as a topic for the doctoral thesis.

**2. Research objectives**

The objectives of the thesis research is to clarify the status of capital structure and the influence of capital structure decisions on business performance of listed stock companies in Vietnam stock market, thereby making conclusions and recommendations to adjust the capital structure to improve business efficiency for listed joint stock companies and State agencies.

**3. Objects and scope of the research**

*Research objects:*

The research object of the thesis is theoretical and practical issues about the impact of capital structure on firm performance.

*Research scope:*

The thesis studies the capital structure, the effect of capital structure on business performance in joint stock companies listed on the Stock Exchange of Ho Chi Minh City. Ho Chi Minh City (HOSE) and Hanoi Stock Exchange (HNX). Capital structure decisions are focused on key sectors including industry, information technology, consumer services, consumer goods, pharmaceuticals and health, raw materials, and community utilities. The thesis does not study the group of listed joint stock companies in the financial sector due to the differences in business characteristics and the training of graduate students as commercial business.

The thesis assesses the situation of decision on capital structure and business efficiency, studying the effect of capital structure on business performance in the period of 2011-2017. This is the period when the Vietnamese economy has developed more steadily after the period affected by the global financial and economic crisis. The thesis also compares and analyzes the trend of the impact of capital structure on business performance in the recovery period after the economic crisis (2011-2017) and the period of economic crisis (2008 - 2010).

Capital structure is determined according to the ratio of debt to total assets. Business performance is assessed through financial indicators including: return on equity (ROE) and the ratio between market price and book value Tobin’s Q.

**4. Research methodology**

Methods of statistics, analysis, comparison and synthesis.

Qualitative method: The thesis consulted experts in the financial sector, managers in the enterprise.

Quantitative method: Includes regression method for panel data, 2-step regression method 2SLS, quantile regression method.

Case study method

**5. New contributions of the thesis**

The thesis has the following new contributions:

- The thesis has applied various regression methods including regression method for panel data, two-step regression method with instrument variable, quantile regression method to solve the limitations of the research model, such as a phenomenon of variance error, endogenous phenomenon. On that basis, the thesis has proved the following relationships:

The capital structure has an inverted U-shaped non-linear effect on the profitability of the business. Capital structure is optimal when the debt to total assets ratio fluctuates around 32% to 37%.

Company size, liquidity, dividend payout ratio, State ownership and operational risk are proven to affect capital structure. On that basis, to adjust the debt ratio to total assets of joint stock companies, the thesis has made some recommendations related to the focus on business, liquidity, dividend payment policy and corporate restructuring process.

The relationship between the capital structure and the market price index Tobin’s Q is different according to the quantiles of Tobin’s Q. The capital structure has a positive effect on the market price of companies when Tobin’s Q at a low level. Therefore, for joint stock companies with high market value, it is recommended to prioritize the mobilization of capital from stock issuance due to the advantages of high stock prices that can mobilize large amounts of capital with lower mobilization costs.

During the recession when enterprises are affected by the financial and economic crisis, the use of debt is proving to be more positive impact on business performance of joint stock companies compared to the recovery period after the economic crisis.

- The thesis has applied the method of determining the average cost of capital of enterprises. The average cost of capital of a business is not simply the average cost of interest or actual dividend paid, but also considering the risks that companies face at that level of capital structure. On that basis, the thesis proposes to build a model for forecasting optimal capital structure for joint stock companies.

- Based on quantitative research results and capital structure analysis, average capital cost, the thesus provides specific recommendations for joint stock companies, focusing on four main recommendations including: improve the firm performance, improve firm value, build the optimal capital forecasting model through determining the average cost of capital and diversifying mobilized capital; Besides, there are four recommendations for the Government.

**6. Thesis structure**

In addition to introduction, conclusion and references, the thesis is divided into five chapters:

# Chapter 1: Overview of research situation and research methods

# Chapter 2: Rationale for the impact of capital structure on firm performance

# Chapter 3: Current status of capital structure and firm performance of joint-stock companies listed on Vietnam Stock Market

# Chapter 4: Models and results of research on the effect of capital structure on firm performance of joint-stock companies listed on Vietnam Stock Market

# Chapter 5: Some recommendations to adjust capital structure to improve firm performance of joint-stock companies listed on Vietnam Stock Market

CHAPTER 1: OVERVIEW OF RESEARCH SITUATION AND RESEARCH METHODS

1.1. Overview of research situation related to the thesis topic

*1.1.1. Theories about the effect of capital structure on business performance*

Typical research theories on the relationship between capital structure and firm performance include M&M theory, agency cost theory, trade-off theory, pecking order theory and theory of market timing.

*1.1.2. Experimental studies on the effect of capital structure on firm performance*

Although there are many studies on the relationship between capital structure and firm performance, the results of this relationship are still not agreed. Results can be summarized as follows:

Table 1.1: Experimental research results on the effect of capital structure on firm performance

|  |  |  |
| --- | --- | --- |
| Viewpoints | Firm performance | Studies |
| No relationship | ROE, ROA, TobinQ, | Modigliani & Miller (1958), Baker & Wurgler (2002), Phillips & Sipahioglu (2004), Jiraporn & Liu (2008), |
| Positive effect | ROE, ROA, Tobin’s Q, cost efficiency | Modigliani and Miller (1963), Chowdhury et al. (2010), Weill (2008), Abor (2005), Shyu (2012), Bui Đan Thanh (2016), Tran Thi Kim Oanh (2016), Vo Minh Long (2017), Le Hoang Vinh (2014) |
| Negative effect | ROE, ROA,  Tobin’s Q | Myers and Majluf (1984), Masulis (1983), Singh and Faircloth (2005), Abor (2005), Seetanah et al. (2014), Zeitun (2015), Varun Dawar (2014), Weill (2008), Le Thi Phuong Vy, (2015), Hayam Wahba (2014) |
| Non-linear relationship | ROE, Profit efficiency | Kraus and Litzenberger (1973), Myers et al. (1984) Berger and Bonaccorsi (2006), Skopljal and Luo (2012), Margaritis and Psillaki (2010), Cheng et al. (2010), Feng-Li Lin et al. (2011), Nguyen Thanh Cuong (2015) |

### Source: Author synthesized

### 1.1.3. Research gaps

Firstly, studies in Vietnam have published mainly focused on studying factors effecting on the capital structure of enterprises, some studies on the impact of capital structure on firm performance or build two separate econometric models to understand the mutual relationship between these two objects. Therefore, the research has only solved some weaknesses of the model such as multicollinearity, autocorrelation or heteroscedasticity, but not mentioning the endogenous problem in the model. The endogenous problem in the regression model will be effectively solved by a two-step regression method with the instrument variable. With this thesis, in addition to the traditional research methods, the author also built 2-step 2SLS regression model with instrument variables and expects variables representing capital structure is the endogenous variable in the model. Not only giving a one-way conclusion about the effect of capital structure on business performance, the thesis also proves different direction of impact when capital structure changes, when changing the position of firm performance and in each stage of economic development.

Secondly, the current research on average cost of capital in Vietnam mainly determines the average cost of actual interest payable and dividends paid to shareholders. While other risk factors arise at such capital structure level, such as national risks, market risks, industry risks, risks of interest payment ability of enterprises... have not been quantified. With this thesis, by relying on the updated numbers of the country risk premium, the country default spread, the firm default spread assessing the company's ability to pay loan interest of Aswath Damodaran, the author conducted the determination of the average cost of capital of the current capital structure and in terms of changing capital structure.

### 1.2. Research Methodology

### 1.2.1.Research process

### Step 1: Develop a theoretical basis for capital structure and the effect of capital structure on firm performance.

### Step 2: Determine the research methodology and research model

### Step 3: Analysis of the status of capital structure and analysis of firm performance of joint stock companies listed on the Vietnam stock market in the period of 2011 - 2017.

### Step 4: Present the results of the research model and analyze the average cost of capital.

### Step 5: Proposing a number of recommendations to improve the business performance of enterprises through decisions on capital structure.

***1.2.2. Research methodology***

Qualitative research method is used to analyze the status of capital structure of joint stock companies listed on Vietnam stock market through the fluctuation of targets and determine the cost of capital of enterprises.

The study use data from the financial statements of non-financial firms listed on Vietnam stock market in the period of 2008-2017. Based on the data obtained from the data base of StoxPlus Corporation, research collected 3122 observations of 446 non-financial listed firms in the period of 2011 - 2017 and 600 observations of 200 continuously listed companies in the period of 2008-2010. The thesis has sent 100 surveys to joint stock companies, state organizations and business consultants, 48 results of 27 business managers and 9 leaders in State organizations and business consultants were retrieved.

Quantitative research method is used to analyze the effect of capital structure on firm performance of joint stock companies listed on Vietnam stock market, and study the influence of factors on capital structure in the relationship with firm performance.

# CHAPTER 2: RATIONALE FOR THE IMPACT OF CAPITAL STRUCTURE ON FIRM PERFORMANCE

## 2.1. Overview of capital structure of enterprises

### 2.1.1. Concept of capital and capital structure

### In the current market economy, the capital is understood to be the initial value of the application in the subsequent processes of the business (Nguyen Dinh Luan, 2016). This concept shows that capital is not only an input factor of an enterprise, but also participates in the continuous production and business process throughout the life of the business.

### Capital structure is the proportion of liabilities in the total value of assets mobilized by enterprises, used in production and business activities.

### The optimal capital structure is achieved when the enterprise combines the use of capital resources to bring maximum benefits to the enterprise, which is reflected in the indicators of firm performance evaluation of enterprises (Return on equity (ROE) and Tobin's Q indicator).

## *2.1.2. Funding sources of businesses*

## - Funding from owners' equity: including initial capital contribution, funding from retained earnings (internal funding sources of enterprises) and funding from stock issuance.

## - Funding from loans: financing from loans (banks or other credit institutions), funding from bond issuance, asset lease financing, financing from debt math.

## - Funding combined with debt and equity: including convertible bonds, bonds with the right to buy shares

## *2.1.3. Indicators of capital structure measurement*

## For convenience in the research process, the thesis agreed to use the ratio of debt ratio to total assets to represent the capital structure of enterprises.

## *2.1.4. Capital cost of the enterprise*

## \* Average cost of capital and capital costs

## The average cost of capital of an enterprise is the weighted average value of the cost of equity and debt expense as follows:

## WACC = RE (E / (D + E)) + RD (D / (D + E))

## In particular, RE and RD are in turn the cost of debt and equity.

## D: Market value of debt

## E: Market value of equity

## \* Borrowing costs

## The cost of debt is determined based on the following formula:

## RD = (Rf + DSc + DCf) \* (1- CIT rate)

## In which: Rf - The risk-free rate is determined by the interest rate of issuing long-term Government bonds.

## DSc - Country default spread

## DSf - Firm default spread

## \* Cost of equity

## The cost of equity is determined based on the following formula:

## RE = Rf + Beta \* (Rm – Rf)

## Accordingly: Rf - The risk-free rate is determined by the interest rate of issuing long-term Government bonds.

## Beta - Beta coefficient measures market risk

## (Rm – Rf) - Market risk premium

## 2.2. Firm performance of enterprises

## *2.2.1. Concept*

## Firm performance of an enterprise is an economic category expressed through the evaluation criteria system to reflect the level of use of the enterprise's resources to achieve the proposed operational objectives. Therefore, in order to evaluate firm performance of enterprises, it is necessary to determine the achieved results and expenses to achieve the objectives.

## *2.2.2. Indicators for evaluating business performance of enterprises*

## The study uses two indicators, ROE and Tobin’s Q, to evaluate the performance of listed companies.

## Return on equity is determined:

|  |  |
| --- | --- |
| ROE = | Profit after tax |
| Equity” |

Tobin’s Q index is determined by the formula:

|  |  |
| --- | --- |
| Tobin’s Q = | Market capitalization of ordinary shares + market value of debt + market value of preferred shares |
| Book value of total assets |

# 2.3. Factors affecting capital structure and the influence of capital structure on business performance of enterprises

# *2.3.1. Factors affecting capital structure*

# Internal factors: Enterprise size; Profitability ratio of enterprises; Liquidity ability; Dividend payment rate; Proportion of state ownership; Operational risks of enterprises; Factors belong to the characteristics of the administrator; Business characteristics

# External factors: Businesses operating in different economic contexts will be affected by that environment. Factors outside the enterprise include: Economic policy of the State; The development of the capital market; Interest rates.

# *2.3.2. Effect of capital structure on firm performance of enterprises*

# Through different capital structure policies, administrators can influence the interest expense payable to creditors, the dividend paid to shareholders, to the financial balance, to the tax expense and affecting agency management costs, thereby affecting firm performance of businesses.

# CHAPTER 3: CURRENT STATUS OF CAPITAL STRUCTURE AND FIRM PERFORMANCE OF JOINT-STOCK COMPANIES LISTED ON VIETNAM STOCK MARKET

### 3.1. Overview of listed stock companies on Vietnam Stock Market

### 3.1.1. Listed situation of joint stock companies

### As of the end of 2017, the whole market has 728 listed enterprises in different industries. Market capitalization on HOSE was VND 2,614,150 billion, HNX reached VND 222,894 billion, UPCOM was VND 677,629 billion and bond market reached VND 1,013,833 billion. The total market capitalization reached VND 4,528,506 billion, equivalent to 100.57% of GDP, an increase of 57.23% compared to 2016 (State Securities Commission, 2018).

### 3.1.2. Classification of joint stock companies

### The classification of enterprises in the sample by industry groups shows that the majority of listed non-financial enterprises belong to industry (45.5%), followed by consumer goods groups (15.7%) and materials (13.9%). At Hanoi Stock Exchange, the number of listed enterprises in the industrial sector accounts for 54.5% of the total number of enterprises. The oil and gas and telecommunications sectors are at the bottom of the list with very few or no listed companies on the stock market.

### 3.2. Analysis of capital structure and firm performance of joint stock companies listed on Vietnam Stock Market

### 3.2.1. Current situation of funding sources of listed joint stock companies

### In general, listed companies maintain a balanced capital structure between liabilities and owners' equity, the debt to total assets ratio is approximately around 50%. Since listed companies are often large enterprises, strong financial potential, the ability to access traditional capital sources such as borrowing or issuing shares is favorable.

### In the structure of capital from liabilities, listed companies maintain debt structure in favor of short-term debt, including debt in payment without interest and short-term debt. Listed companies have increased their use of short-term debt in payment due to no interest payment, accounting for 44% to 65% of the total value of liabilities.

### The average ratio of long-term debt only accounts for a small amount of the total asset value, the average ratio of industries is only between 9% and 33% of the total value of liabilities. The oil and gas industry and the community utility industry are the only two sectors with a long-term debt ratio higher than the short-term debt ratio, respectively 29% and 33% of total liabilities. In long-term capital mobilization channels of listed companies, the proportion of capital from bond issuance is very low and negligible.

### The proportion of undistributed profits in the total equity of enterprises is quite low, ranging from 4% to 22%. This data shows that the ability of self-financing of listed companies is not high, enterprises still rely mainly on external capital sources such as borrowing and issuing shares.

### Survey results from financial experts and corporate executives show that retained earnings are an important source of funding most prioritized by businesses. Financing sources used by businesses next priority are short-term loans and liabilities in payment. When asked about the reasons for not prioritizing bond issuance, the survey results show that most managers are not interested, do not have much knowledge about the process of issuing bonds and types of bonds and assessing the risks that may be encountered when issuing bonds. Moreover, to be able to issue bonds successfully, issuers often have to have large-scale, strong financial capacity and have to prove the cash flow to repay debts. Therefore, there are not many bond issuers in Vietnam.

### Financing from finance leasing stands at the bottom of the priority order of use because businesses do not have much knowledge about the benefits of financial leasing. The survey results shows that some enterprises do not know about financial leasing services, even some enterprises also understand financial leasing as buying installment assets, so the effectiveness and benefits of this activity are not yet seen. There are not many financial leasing companies in Vietnam and they are not really active in accessing and advising clients to use services.

### With the question of factors affecting the decision on capital structure in enterprises, survey results show that firm size, business leaders' opinion and dividend payout ratio are the internal factors that have the greatest impact.

### When considering external factors affecting the decision on capital structure in enterprises, the survey results show that lending rates and the development of capital markets are important factors and having the highest scores.

## *3.2.2. Capital structure and firm performance of listed joint stock companies*

## \* Overview of capital structure and average firm performance of listed joint stock companies

## In the research phase, the debt ratio in the total funding of listed companies tended to decrease slightly from 51.3% in 2011 to around 50% in the years from 2015-2017. Meanwhile, the value of Tobin's Q tends to increase rapidly, reaching 1.11 in 2017, an increase of over 50% compared to 2011. Profitability ratios of enterprises after fluctuations in the period of 2011-2012, due to the world financial crisis, show positive signs of growth from 9% in 2012 to 10% -11% in recent years.

## In summary, although the firm performance of enterprises is influenced by many objective and subjective reasons, the results show that, except for the big changes from the macro economy, the market value index of joint stock companies tends to increase, while the structure of funding from liabilities decreases.

## \* Capital structure and average firm performance of listed joint stock companies

## Firstly, industrial sector

## The industry average debt ratio fluctuates around 55% of the total asset value. Industry enterprises maintain stable funding structure over the years. Firm performance of industrial sector is quite stable and tends to increase in the research period.

## Second, consumer service sector

## The ratio of debt to total average assets of enterprises in the industry is only 35%, the lowest compared to other enterprises in other industries. Firm performance of consumer services sector remained relatively stable in the period of 2011-2016.

## Third, pharmaceutical and medical sector

## The pharmaceutical and health sectors represent the most robust and stable growth compared to other industries in the Vietnam stock market in the period of 2011-2017. Profitability ratios on equity both maintained at a high level, mainly over 10%. Tobin’s Q market value index increased rapidly from 0.73 in 2011 to the highest level of 1.75 in 2017.

## Fourth, consumer goods sector

## The average debt ratio of enterprises in this sector is 48%, of which short-term debt accounts for a high proportion, reaching 42% and payment debt accounts for 47% of the total value of liabilities. Consumer goods sector has similar characteristics with consumer services sector when the debt to total assets ratio is quite large among listed companies.

## Fifth, materials sector

## The ratio of debt to total average assets of enterprises in this sector tends to decrease over the years. In 2011, the average debt ratio at 52% of total assets fell around 49% -50% in recent years. Tobin’s Q market price index tends to increase but is still low compared to some industries such as consumer goods, pharmaceuticals and health or community utilities. Meanwhile, the profitability index ROE lacks stability over the years.

## Sixth, community utilities sector

## Along with the development trend of the stock market, the value of Tobin's Q of the community of utilities increased rapidly from 0.7 in 2011 to 1.19 in 2017. Profitability ratio also reached the highest level of stability compared to other sectors in Vietnam stock market, always reaching 14% to 15% over the years. Businesses tend to reduce their liabilities and gradually increase their equity. The ratio of liabilities to total assets in 2011 at 50% fell to 46% in 2017.

## Conclude:

## Based on the analysis of the current status of capital structure and firm performance of listed companies based on the ratios of Tobin’s Q and ROE on average by sector, the thesis make some conclusions as follows:

## - The ratio of debt to total assets of most businesses tends to decrease in the period of 2011-2017, typically as listed companies in consumer services, pharmaceuticals and health, raw materials and community utilities.

## - Tobin’s Q indicator has maintained a rapid increase trend over the years, such as pharmaceutical and medical industries, materials, and community utilities.

## - ROE indicators after fluctuations due to the impact of macroeconomic policies in 2011-2012 were more stable and tended to increase in the remaining years.

### 3.3. Analysis of capital structure and capital costs in some typical enterprises

### The thesis analyzes capital structure and capital cost in two typical enterprises: Hai Phong Cement Packing Joint Stock Company (BXH) and Kido Group Corporation (KDC).

### When determining the average cost of capital at the enterprise, the thesis does not consider the cost of capital from non-interest bearing loans, including accounts payable to suppliers, taxes and other payable amounts to the State and other payable amounts... because there is no basis to determine costs for these items. The thesis uses Damodaran data to be updated in January 2018.

***3.3.1. Capital structure and capital cost analysis for Hai Phong Cement Packing Joint Stock Company***

Hai Phong Cement Packing Joint Stock Company maintains a stable capital structure over the years with the debt to total assets ratio always reaching 50-60% from 2011 to 2017. This is also a common debt ratio of enterprises listed on the stock market in general.

Average cost of capital of enterprises in 2017:

WACC = RE (E / (D + E)) + RD (D / (D + E)) = 12.02% / year

In order to assess the decision on capital structure of BXH, the thesis determines the average cost of capital of enterprises when the debt ratio changes. The average cost of capital in case of reducing debt ratio shows that the value is less than the current average capital cost of the enterprise. In contrast, when the debt ratio is higher, the average cost of capital is higher than the current average cost of capital. This result shows that for enterprises maintaining high debt ratio such as BXH, the adjustment of capital structure in the direction of reducing the debt ratio will contribute to reducing the cost of capital and improving firm performance of enterprises

***3.3.2. Capital structure and capital cost analysis for Kido Group Corporation***

The company maintains a stable capital structure during the research period with the debt to total assets ratio at 20% -30%. Compared to enterprises listed on the Vietnam stock market, the debt to total assets ratio of KDC is lower than the average.

The thesis determines the cost of debt and equity of Kido Group Corporation for 2017 as follows:

Average capital cost of enterprises in 2017:

WACC = RE (E / (D + E)) + RD (D / (D + E)) = 8.61%

In the case of assumptions when increasing the debt ratio of KDC to 50% and 100% of equity, the average cost of capital increased from 8.68%/year to 8.90%/year and 10.04%/year respectively. When the debt ratio decreases, the average cost of capital decreases but is not significant. Thereby, it can be seen that the decision on capital structure of enterprises is quite reasonable.

# CHAPTER 4: MODELS AND RESULTS OF RESEARCH ON THE EFFECT OF CAPITAL STRUCTURE ON FIRM PERFORMANCE OF JOINT-STOCK COMPANIES LISTED ON VIETNAM STOCK MARKET

### 4.1. Develop research models and research hypotheses

### 4.1.1. Research models

### After examining the theoretical basis and relevant empirical studies, the author builds the research model and measures related variables as follows:

### Regression model (1) testing linear relationship between capital structure and firm performance:

### PERit = β0 + β1LEVit + β2Xit + εit (1)

### Regression model (2) testing non-linear relationship between capital structure and firm performance:

### PERit = β0 + β1LEVit + β2LEV2it + β3Xit + εit (2)

### Inside:

### PERit is the dependent variable measured by two measures of return on equity ROE and Tobin’s Q.

### LEVit is a independent variable measured the capital structure, which is determined by the ratio of total liabilities to total assets.

### Xit is control variables

### it = Observation variable of company i at time t

### i = 1, 2, 3, 4, ... 446 and t = 1, 2, 3 ... 7 (2011 to 2017)

### Based on the research models, the thesis uses Stata software to run regression models according to different methods including:

### - Select regression model for panel data.

### - Applying a two-stage regression model.

### - Applying the quantile regression model.

## *4.1.2. Research hypothesis*

## H1: Capital structure has a negative effect on firm performance of listed joint stock companies in Vietnam in the period of 2011-2017.

## H2: Capital structure has an inverted U-shaped nonlinear relationship to the firm performance of listed joint stock companies in Vietnam in the period 2011-2017..

## H3: Capital structure has a positive effect on business performance at the lower quantile of firm performance and negatively affects firm performance at the higher quantile of firm performance.

## H4: The effect of capital structure on firm performance of enterprises during the financial and economic crisis and during the recovery period after the financial and economic crisis is different.

**4.2. Research results of the effect of capital structure on firm performance of joint stock companies listed on Vietnam stock market**

The relationship between capital structure and return on equity

When studying the linear relationship, the regression results according to the fixed effect model and the percentile regression model show the negative relationship between the debt-to-total assets ratio and firm performance. In particular, the quantile regression model showed that the negative impact of debt on business performance tended to increase gradually from quantile 0.1 to 0.9, reflected by the regression coefficient decreasing from -0,072 to -0,159. This result shows that firms with better profitability, the decision to finance by debt will bring greater negative effects than remaining firms.

In models that study the non-linear relationship between capital structure and return on equity, the results support this relationship. Specifically, the return on equity will be improved when firms use suboptimal debt, but if the debt to total assets ratio exceeds the optimal level, it will negatively affect. The optimal point of the structure can be determined in the range of 32% to 37%.

Considering the context of enterprises affected by the financial and economic crisis in the period of 2008-2010, the study found no evidence to prove the statistically significant effect of capital structure on firm performance.

The relationship between the capital structure and the market value of Tobin’s Q

The fixed effect regression model and the two-step regression model all have a statistically significant conclusion on the negative effect of capital structure on the Tobin's Q index. However, when considering the percentile regression model, the results show the effect of capital structure on the Tobin’s Q market difference between the quantiles.

When the Tobin’s Q market value indicator is low, the capital structure shows a positive impact on the market value of the business. Thus, for firms with a lower market value on book value than other businesses, the use of debt brings a positive signal to investors. This correlation coefficient decreases from the lowest percentile to the higher percentile of Tobin's Q value. In contrast, when the Tobin’s Q market value is high, the use of debt debt tends to reduce the market value of these businesses. When studying about the non-linear relationship between capital structure and Tobin’s Q, the thesis does not prove this relationship with both regression methods: fixed effect model regression and two-step regression 2SLS.

Research results during the economic crisis show that the capital structure has a positive effect on the target of Tobin’s Q in the period when Vietnam's economy is affected by the financial and economic crisis. In the quantile regression model, capital structure also shows a positive impact on the target of Tobin’s Q in more quantiles than in the 2011-2017 period.

Factors affecting capital structure

In addition, when implementing the two-step regression model, the research results have shown that the factors affecting capital structure in enterprises include: firm size, dividend payout ratio, State ownership ratio, liquidity, operational risks.

# CHAPTER 5: SOME RECOMMENDATIONS TO ADJUST CAPITAL STRUCTURE TO IMPROVE FIRM PERFORMANCE OF JOINT-STOCK COMPANIES LISTED ON VIETNAM STOCK MARKET

## 5.1. Basis for recommendations

## *5.1.1. The conclusions drawn through the study of the situation*

## \* Conclusion on the status of capital structure of joint stock companies listed on Vietnam stock market

## The majority of shareholding companies listed on Vietnam stock market maintain a high ratio of debt to total assets, fluctuating around 50%.

## Businesses only use common funding sources such as bank loans and stock issues.

## The factors affecting the capital structure in the company include: business size, dividend payout ratio, state ownership ratio; while factors include short-term solvency, risk of adverse effects. Industry tends to use higher debt than other industries.

## \* Conclusion on the effect of capital structure on the return on equity of joint stock companies listed on Vietnam stock market.

## According to empirical research results, the profitability ratios of listed companies can be maximized when enterprises maintain their debt-to-asset ratio around the optimal level of 32% -37%. Compared to the average market debt ratio of 50.7% and the median ratio of 53.6%, most businesses are maintaining debt ratios beyond the optimal threshold.

## 5.1.1.3. Conclusion on the effect of capital structure on the market value of listed joint stock companies

## The higher Tobin’s Q market price coefficient the enterprises have, the lower the benefit from debt mobilization.

## *5.1.2. Context of financial market in Vietnam and development orientation in the coming years*

## 5.1.2.1. Background of the financial market in Vietnam

## The monetary market in Vietnam is developing and going into stability, the supply of capital from credit institutions has spread to all economic sectors, effectively supporting economic growth.

## 5.1.2.2. Orientation of financial market development in the coming time

## Firstly, developing the modern money market, improving the financial capacity of commercial banks.

## Secondly, developing the capital market becomes an effective medium and long-term capital supply channel.

## *5.1.3. Background of commercial business activities in Vietnam in the coming years*

## The operation of the trade sector will face more intense competition pressure, more competition, more broad and broad scope.

## The process of international integration also promotes the expansion of the financial services market.

**5.2. Recommendations for listed joint stock companies**

***5.2.1. General recommendations for listed stock companies***

- Capital structure planning must be based on a full analysis of the factors affecting inside and outside the enterprise.

- Planning the capital structure to balance the interests between shareholders and the executive board and creditors.

- Planning the capital structure to balance the profit and risk.

- Capital structure planning should be based on data analysis.

***5.2.2. Recommendations to improve profitability of listed joint stock companies***

5.2.2.1. Proposals on focusing on business activities of enterprises

In order of priority, enterprises need to prioritize capital for main production and business activities, then switch to other investment activities. For investment activities outside the main business activities, enterprises need to strengthen control measures to minimize risks and maximize the benefits.

5.2.2.2. Proposals on enhancing the solvency of businesses

First, businesses can shorten the time to collect sales by improving product quality, consistent with consumer tastes.

Secondly, enterprises can shorten the time of inventory rotation by innovating technology, shortening product production time, accelerating the process of product consumption after completion.

Third, to improve solvency, businesses should not extend the time to pay for purchases.

Fourth, use financial derivatives. For stock companies listed on the stock market, the implementation of preventing risks of exchange rate is necessary.

5.2.2.3. Proposal for the formulation of dividend policy

Since most businesses need to maintain their debt ratio higher than the optimal threshold, enterprises can adjust their debt ratio by reducing the dividend payment rate. In addition to traditional dividend payment in cash, businesses can pay dividends in shares or dividends by assets.

5.2.2.4. Proposal on restructuring state-owned enterprises

The implementation of State divestment for enterprises should be carried out according to a roadmap, step by step conducted to avoid affecting the operation of enterprises. The state still holds a dominant ownership rate in many state-owned enterprises which are not sensitive sectors such as consumer goods, industry... Therefore, it is possible to reduce state ownership to below 50%, then reduce further and proceed to withdraw completely from these industries.

*5.2.3. Recommendations to improve the market value of listed stock companies*

The thesis proposes some recommendations for listed companies as shown in Table 5.1:

Table 5.1: Summary of recommendations for listed companies

|  |  |  |
| --- | --- | --- |
| Ratio | Debt to total assets ratio is below the optimal capital structure threshold | Debt to total assets is higher than the optimal capital structure threshold |
| Higher Tobin’s Q | - Use debt to finance working capital and small investments.  - Issuance of shares to finance large investments. Can use preferred stocks. | - Implement policy to reduce debt.  - Priority to issue shares. |
| Lower Tobin’s Q | - Priority to issue debt. | - Implement policy to reduce debt.  - Can issue convertible bonds |

*Source: Author synthesized*

**5.2.4. Build the optimal capital forecasting model through determining the average cost of capital**

In addition to building an empirical research model to determine the optimal capital structure, enterprises can determine the current average cost of capital and presumptive capital costs for different capital structures to choose a more suitable option.

**5.2.5. Recommendation to diversify mobilized capital**

Besides the form of bank borrowing, joint stock companies can mobilize capital by issuing bonds.

In addition to ordinary bonds, enterprises can choose to issue convertible bonds, which are convertible bonds to common shares according to a published rate and at a predetermined time.

**5.3. Recommendations for the State**

Firstly, improving the legal framework for the financial market.

Secondly, continue to improve and develop the structure of the stock market.

Thirdly, continue to apply international practices on information disclosure, international accounting standards for making and presenting financial statements.

Fourthly, attracting foreign investment in Vietnam's financial market.

# CONCLUSION

# Building effective policies on capital structure to improve firm performance of enterprises is one of the important decisions of managers. Recognizing that problem, the thesis has carried out the thesis "The impact of capital structure on firm performance of joint stock companies listed on Vietnam Stock Market" and gave some following results here:

# 1. Clarify the rationale for capital structure and firm performance in enterprises such as concepts, roles and factors affecting capital structure and firm performance indicators.

# 2. Applying the average capital cost determination model in enterprises to analyze and verify research results and propose models to forecast the optimal capital structure.

# 3. The results of regression analysis on the effect of capital structure on firm performance of joint stock companies listed on Vietnam stock market in the period of 2011-2017 show that the capital structure has an inverted U-shaped non-linear effect with the profitability of the business. When using Tobin's Q indicator to represent business performance, the study shows that the influence of capital structure on Tobin's Q market price index is different according to the quantile of Tobin's Q. The thesis also proves influence the difference of capital structure on business performance in the period of economic crisis and recovery period after the economic crisis.

# 4. Based on the analysis of the status of capital structure in enterprises and the results of regression analysis, the thesis proposes some specific recommendations for listed enterprises and for the State.

The thesis still has some limitations such as the small number of survey samples for enterprise managers, and there are no specific recommendations for each different business lines. In addition, due to limited information and data, the measurement of business performance only stops at the indicators of ROE and Tobin's Q. The above mentioned limitations are also suggestions for further research directions.

# LIST OF AUTHOR’S PUBLICATIONS RELATED TO THE THESIS

1. Tran Thi Phuong Thao, 2019, *Measure and forecast the average cost of capital in an enterprise,* Economy and forecast Review, No 24, pp. 89-94.

2. Tran Thi Phuong Thao, 2019, *The impact of capital structure on firm value of Vietnamese listed companies – a quantile regression approach*, Journal of International Economics and Management, No 124.

3. Nguyen Thuy Anh, Tran Thi Phuong Thao, 2019, *The impact of capital structure on firm performance of Vietnamese non-financial listed companies basing on agency cost theory*, VNU Journal of Science: Economics and Business, No. 35 (2), pp. 24-33; International conferences: “Vietnam International Conference in Finance (VICIF-2018)” and “International Conference of the Business and Applied Sciences Academy of North America (BAASANA - 2018)”.

4. Đinh Van Son, Tran Thi Phuong Thao, 2018, *The impact of capital structure on firm performance of joint-stock companies listed on Vietnam Stock Market*, [Journal of Trade Science](http://tckhtm.tmu.edu.vn/vi/news/Journal-of-Trade-Science/), No. 114, pp. 2-14.

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