MINISTRY OF FINANCE

UNIVERSITY OF FINANCE – MARKETING

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THE IMPACT OF MARKET DISCIPLINE ON RISK TAKING AND FINANCIAL EFFICIENCY OF VIETNAMESE COMMERCIAL BANKS

Major: Finance – Banking

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SUMMARY OF PH.D THESIS

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The thesis is carried out at: University of Finance – Marketing

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THE LIST OF PUBLICATIONS RELATED TO THE DISERTATION

TT	Name of articles	Year	Type of paper
1	“The factors affecting on risk taking of Vietnamese commercial banks” .	2023	Industry &Trade Article
2	“The impact of market discipline on the financial efficiency of Vietnamese commercial banks”	2023	Finance Article

CHAPTER 1: INTRODUCTION

1.1 RESEACH TOPIC SELECTION REASONS.

While the traditional business activity of commercial banks is currency trading, that is, banks mobilize capital to lend out to the economy therefore capital mobilization operations play an extremely important role in commercial bank's business activities. Once a commercial bank has difficulty in raising capital, that commercial bank not only faces difficulties in business operations but its business efficiency is also affected. At the same time, commercial banks may face risks if depositors withdraw money or withdraw money in bulk. Because depositors have the right to choose reputable banks with good business efficiency and low risks so commercial banks always have to "adjust" to attract capital mobilized in the economy in the direction of reducing risk, increasing business efficiency to "attract" to depositots.

The content of market discipline states that depositors always want high interest rates to compensate for risks that may arise from pursuing risky investment policies of the bank; If they cannot meet the requirements, they will withdraw money and deposit it in another bank with lower risk. Thus, this is built on the assumption that the banks with high interest rates will often have high risks. All of the bank's operating results will be reflected in the bank's financial reporting results and impact potential investors or depositors. Thus, it can be said that market discipline is one of the banking supervision activities carried out mainly by the market.

Market discipline is also understood as the openness and transparency of information from commercial banks to the market. Therefore, Berger (1991) argues that market discipline can be described as a situation in which depositors penalize riskier banks by demanding higher interest rates or by withdrawing deposits.

Because market discipline plays an important role in monitoring the business activities of commercial banks so the research on market discipline can create a foundation to help banks implement solutions that contribute to transparency, business activities of the bank itself in particular and the commercial banking system in general.

Because market discipline has created a certain pressure on banks and forced commercial banks to improve their competitive position to both retain old customers and attract new customers by being transparent in information disclosure and improving their efficiency. Therefore, the research on market discipline, risk taking and financial efficiency of commercial banks in Vietnam has very high practical significance because it can contribute to the planning, management and operation of the development banking system more stable, effective and safer development. For that reason, the author both inherited the empirical evidence of previous research and at the same time developed some new research content on market discipline to study: "The impact of market discipline on risk taking and financial efficiency of Vietnamese commercial banks".

1.2 RESEARCH OBJECTIVES, RESEARCH QUESTIONS.

Research objectives:

Firstly, the thesis researches the impact of market discipline on risk taking of Vietnamese commercial banks.

Second, the thesis researches the impact of market discipline on the financial efficiency of Vietnamese commercial banks.

Third, the thesis studies whether the change in risk taking affect the impact of market discipline on the financial efficiency of Vietnamese commercial banks.

Fourth, the thesis proposes some suggestions for state bank and some management suggestions for Vietnamese commercial banks to improve the market discipline in Vietnam.

Research question:

Question 1: How is the impact of market discipline on the risk taking of Vietnamese commercial banks?

Question 2: How is the impact of market discipline on the financial efficiency of Vietnamese commercial banks

Question 3: whether does the change in risk taking affect the impact of market discipline on the financial efficiency of Vietnamese commercial banks? And how is the impact?

Question 4: What solutions or policies should commercial bank and State Bank administrators implement to increase market discipline of commercial banks to maintain stability, safe operations and efficiency of Vietnamese commercial banks?

1.3 SUBJECTS AND SCOPE OF RESEARCH.

Research subjects: including market discipline; risk taking; financial efficiency; interaction variable between market discipline and financial efficiency; banking factors and macroeconomic factors which can impact risk taking and financial efficiency of Vietnamese commercial banks.

Scope of research: 30 Vietnamese commercial banks, excluding foreign-invested commercial banks, joint venture commercial banks, policy banks, cooperative banks, foreign bank branches outside .

Research time: the period from 2008 (the time after Vietnam joined the World Trade Organization - WTO) to 2022.

1.4 RESEARCH METHODS.

The research data used in the thesis is secondary data taken from audited financial statements of banks. Macroeconomic indicators are taken from Worldbank (https://data.worldbank.org/) and Vietnam General Statistics Office. All data was collected for the period from 2008 to 2022.

The author uses Ordinary Least Square-OLS linear regression method (OLS also known as POOL model in Stata software), fixed effects model (FEM), random effects model (REM), generalized least squares (GLS) and generalized method of moments (GMM) in the case of dealing with endogenous variables to regress random effects with interaction variables and tests to select and tests to select models, based on results from Excel and Stata software to achieve research goals.

1.5 NEW POINTS AND CONTRIBUTIONS OF THE THESIS.

1.5.1 NEW POINTS OF THE THESIS

The new points of the thesis compared to domestic researchthe are the impact of market discipline on risk taking and financial efficiency of Vietnamese commercial banks; and whether the change in risk taking affect the impact of market discipline on the financial efficiency of Vietnamese commercial banks are the new points of the thesis. The new point of the thesis compared to international research is whether the change in risk taking affect the impact of market discipline on the financial efficiency of Vietnamese commercial banks. From there, the thesis will supplement experimental evidence of these research contents.

The final research results of the thesis (if it is statistically and practically meaningful) will create a scientific basis for the thesis by providing policy implications to help policymakers in Vietnam and Vietnamese commercial bank administrators in managing and operating the banking system to operate safer and more effectively.

1.5.2 CONTRIBUTION OF THE THESIS

Scientific contributions of the thesis.

By completing the theoretical framework on the impact of market discipline on risk taking and financial efficiency of Vietnamese commercial banks, the thesis has partly contributed academically, theoretically and supplemented research on market discipline in Viet Nam. At the same time, the author has fully reviewed previous research results relating to the topic of the thesis both domestically and internationally.

The contributions of the thesis in terms of practice.

The thesis provides scientifically valuable empirical evidence on the impact of market discipline on risk taking and financial efficiency; the impact of risk taking on financial efficiency; the impact of interactive variables between market discipline and risk taking on financial efficiency of Vietnamese commercial banks. They are:

Regarding the impact of market discipline on risk taking, the thesis shows that market discipline exists in Vietnamese commercial banks, meaning depositors react to the bank's risk. Specifically, market discipline reduces the risk taking of Vietnamese commercial banks. Because the majority of depositors tend to choose to deposit money in banks with low risk exposure levels, this causes market discipline to put pressure on banks to reduce risk exposure levels to be more competitive in capital mobilization on financial markets.

Regarding the impact of market discipline on financial efficiency of commercial banks, in general, market discipline has the same impact as financial efficiency. That is, market discipline will have an impact on increasing the financial efficiency of Vietnamese commercial banks.

The thesis also studies the impact of risk taking on the financial efficiency of Vietnamese commercial banks. The research results are consistent with the previous results: risk taking affects the financial efficiency of Vietnamese commercial banks in the same direction.

At the same time, the thesis also studies the change in risk taking affect the impact of market discipline on the financial efficiency of Vietnamese commercial banks.

1.6 STRUCTURE OF THE THESIS.

The thesis is divided into 5 chapters including: Chapter 1: Introduction; Chapter 2: Theoretical basis and research overview; Chapter 3: Research methods; Chapter 4: Research results and discussion; Chapter 5: Conclusion and policy implications.

CHAPTER 2. THEORETICAL BASIS AND RESEARCH OVERVIEW

2.1 THEORETICAL BASIS OF MARKET DISCIPLINE.

2.1.1 CONCEPT OF MARKET DISCIPLINE

Market discipline is understood as the reaction of the market (the market includes bank depositors) to the bank in case the bank's risk changes. Therefore, in order to protect their interests, customers (existing or potential) and the ...will consider before deciding to choose another bank or to "punish" the existing bank (by asking for a higher interest rate or abandoning the bank).

Facing with such a mere threat of market discipline, banks may be inhibited or influenced in planning their business strategies in a safer direction.

Market discipline is one of three activities of supervising banks that is carried out mainly by the market (specifically, individuals and organizations that deposit money or invest capital in banks, other banks and the public). Other elements that form up a country's banking supervision system including: state supervision, internal control mechanisms, international supervisory cooperation mechanisms, deposit insurance organizations, credit rating organizations.

2.1.2 FORMS OF MARKET DISCIPLINE.

Market discipline takes two forms: direct discipline and indirect discipline (Federal Reserve (2000), Kwast et al. (1999)).

2.1.3 HISTORY OF THE DEVELOPMENT OF MARKET DISCIPLINE

Market discipline goes through 3 main stages of development:

In the period before the great crisis of 1929 - 1933, market discipline was considered the main method of banking supervision. Because during this period, most capitalist countries operated according to the self-regulation mechanism of the market according to the Keynesian ideal. At this time, market discipline is promoting its key position in supervising bank business activities through regulating the behavior of bank management, thereby helping to balance risks and benefits between parties.

The period from 1933 to 1990, the market discipline gradually lost its influence while state supervision regained its key position in supervising the banking system. The Great Depression of 1929-1933 showed that the Market discipline did not perform its supervisory role as well as expected. At this time, the presence of a state supervisory is extremely necessary to monitor and support the banking system.

In the period after 1990 until now, market discipline has been increasingly considered important and is one of the three elements that make up the banking supervision system.

2.1.4 CHARACTERISTICS OF MARKET DISCIPLINE

Ordinary, market discipline only comes into play in banking supervision when one of the key conditions is met, that is market participants and the public is provided fully and promptly with necessary information to be able to determine an overview of the bank's operations, investment activities and possible risks of a bank, especially this information must be truly accurate and reflect the actual situation of that bank. Therefore, from a banking perspective, market discipline is influenced by banks' transparent information disclosure. Based on the information received and the evaluation results that can be drawn, customers can make a decision whether to continue depositing or investing in that bank or not, or redirect investment to another bank. .

First, market discipline puts pressure on banks to have solutions to reduce the level of risk taking, especially the moral risks of commercial banks.

Second, market discipline can to some extent push banks to improve their business efficiency by pressuring some relatively inefficient banks to become more efficient or exit banking (Berger, 1991). Thereby, market discipline can strengthen and improve the efficiency of commercial banks.

Third, indirect maket discipline such as signaling the credit ratings of credit institutions, combined with inside information obtained by supervisory processes. This can help the overall monitoring process be highly effective.

2.2 THEORETICAL BASIS OF RISK AND RISK TAKING.

2.2.1 THEORY OF RISK

Currently, many economic researchers use the understanding of risk according to Frank Knight's (1962) definition that "risk is a combination of random events that can be measured by probability". Thus, we can measure risk by calculating the standard deviation between the subject's actual outcome and the initial expected outcome. The higher difference in the result, the greater the risk.

2.2.2 THEORY OF RISK TAKING.

*Risk taking level:

According to Sanders and Hambrick, (2007), the level of risk taking is understood as the way of dealing with risk and is often governed by the trade-off between benefits and risks. The level of risk taking is a core issue in strategic planning of bank operations. This is because the characteristics of banking operations are always associated with potential risks, banks must always rely on the level of their risk taking to make business decisions. Therefore, in their operational activities, banks always carefully consider the risk level of their customers and their banks.

* Risk-taking behavior.

Risk-taking behavior can also be argued from Markowitz's (1959) theory of the risk-return trade-off perspective. According to this theory, Markowitz (1959) said: "When banks accept more risks, it means that the bank itself wants to achieve higher expected profits."

2.3 THEORETICAL BASIS OF BANKING EFFICIENCY.

2.3.1 CONCEPT OF BANKING EFFICIENCY

Berger and Mester (1997) believe that: the operational efficiency of commercial banks is shown in the relationship between output revenue and the cost of using input resources or the ability to turn input resources into the best output in business activities of commercial banks. Specifically, commercial banks create the largest output revenue with the smallest value of input resources.

2.3.2 KINDS OF BANKING EFFICIENCY

2.4 REVIEW OF PREVIOUS RESEARCH

2.4.1 REVIEW OF RESEARCHS ON THE IMPACT OF RISK TAKING ON BANKING EFFICIENCY.

Each bank's risk taking is different. It can be said that the level of risk taking of each bank depends on the investment "appetite" of the Board of Directors. Although each bank's level of risk is different, they all have the same principle. This principle is argued from the perspective of risk and profit trade-off according to the theory of Nobel Prize-winning economist Harry Markowitz (1959) that when banks accept more risk, it means that the banks want to achieve higher expected profits. More specifically, Berger and Mester (1997) demonstrated that risk taking shows a potentially important correlation with bank efficiency.

In this thesis, the author studies risk taking from the perspective of investment capital risk taking (CAPRISK), credit risk taking (CREDRISK) and liquidity risk taking (LIQRISK).

The results of the above studies all show that risk taking (including CAPRISK, CREDRISK and LIQRISK) has a positive or negative impact on bank efficiency.

2.4.2 REVIEW OF STUDIES ON THE IMPACT OF MARKET DISCIPLINE ON RISK TAKING.

First, the studies show that market discipline has existed, the investors react to bank risks, and investors also have the ability to monitor bank operations and risks.

Second, the studies show that market discipline has an impact on bank risk taking. Most of the studies have shown the results: market discipline reduces bank risk taking.

Third, in addition to researching the impact of market discipline on risk taking, the author also researched the other factors that impact bank risk taking.

2.4.3 RESEARCH OF THE IMPACT OF MARKET DISCIPLINE ON BANKING EFFICIENCY.

Overall, the literature on the impact of market discipline on bank efficiency suggests that market discipline can improve the efficiency of banks by pressuring some relatively inefficient banks to become more efficient. more efficient or exit the industry.

Besides research on the impact of market discipline on banking efficiency,

the author also researches the other factors that impact banking efficiency. These are factors of industry characteristics and macroeconomic factors.

2.5 RESEARCH GAPS

In the world: there are many economists who research on market discipline, risk taking and bank efficiency. For example, the work of Blum (2002) and Hoang et al. (2014) demonstrated that market discipline has a meaningful impact on risk taking; Authors Uchida and Satake (2009) approached this issue from the perspective of estimating ineffective costs and thereby concluded that market discipline affects the efficiency of banks. At the same time, there have been many research results showing that risk taking affects banks' business efficiency such as research by Hou et al. (2014); Sarmiento and Galán (2017) provide evidence that bank risk exposure is a factor that affects operational efficiency. Similarly, Adelopo et al.'s (2018) study with research data included 123 typical commercial banks in West Africa; Athanasoglou et al.'s (2006) study with data including banks from Eastern European countries in the period 1998-2002 shows that credit risk taking has an impact on bank financial performance.

In our country, there are currently no research projects on the impact of market discipline on risk taking and bank efficiency. There are only research by Nguyen Chi Duc and colleagues (2012) and (2017) researched on the impact of risk taking on market discipline. Research results show that market discipline in the Vietnamese banking industry exists but is very weak. Research by Phan Dien Vy and colleagues (2014) synthesizes the theoretical basis of market discipline and reviews empirical studies in the world related to market discipline. Recognizing the important role of market discipline for the Vietnamese banking industry, Tran Viet Dung (2022) shared some recommendations to strengthen market discipline for Vietnam after analyzing the current status of market discipline in the Vietnamese banking industry.

In general, around the world, authors have researched the impact of market discipline on risk-taking behavior or research the impact of market discipline on banks' ineffective costs. In Vietnam, the authors have studied the impact of risk taking on market discipline. Meanwhile, risk taking is also a factor affecting banking efficiency. At the same time, through a review of previous studies, the author finds that in Vietnam and the world, there are currently no research results on the content: whether the change in risk taking affect the impact of market discipline on the financial efficiency of Vietnamese commercial banks? And what is the impact? This is also a gap in researching the contents of market discipline.

In that context of research and practice, this thesis studies the impact of market discipline on risk-taking and banking financial efficiency. At the same time, the thesis also researches the impact of the interaction variable between market volume and risk factor on the financial performance of Vietnamese commercial banks in the period 2008-2022 to answer the question: whether the change in risk taking affect the impact of market discipline on the financial efficiency of Vietnamese commercial banks? And what is the impact? The above research issues of the thesis are expected to contribute to filling the research gap as the author analyzed above.

CHAPTER 3: RESEARCH METHODS

3.1 RESEARCH DATA.

The author uses unbalanced panel data for the period from 2008 to 2022 of 30 Vietnamese commercial banks as the main research data of the thesis. The thesis studies the period 2008-2022 because this period witnessed many changes in the Vietnamese banking system, since world economic integration - WTO (2007); experienced the great recession and global financial crisis (2008); untit the recovery and development (after 2012 to 2022). This period also witnessed the roadmap for implementing Basel II regulations of the Vietnamese banking system, which began piloting at commercial banks in 2016 and required banks to strictly comply with Basel II regulations in 2018. Thus, the research period of 15 years is quite an ideal period for most econometric models.

3.2 MEASUREMENT METHOD OF RESEARCH VARIABLES.

3.2.1 MEASUREMENT OF MARKET DISCIPLINE.

Based on the nature of market discipline, the author choose the variable LISTED to represent the market discipline because banks listed publicly on the stock exchange will have to follow stricter market discipline due to strict supervision from many sources, such as management agencies, investors and credit rating organizations. At the same time, the third pillar in the Basel II

Agreement on market discipline clearly states: "Banks need to appropriately disclose information according to market principle".

Furthermore, the author simultaneously base on the nature of market discipline – a situation where investors "punish" riskier banks by demanding higher interest rates or withdrawing money from the bank (Berger, 1991) - as a basis for building scales of market discipline. Therefore, the author uses a market discipline scale belonging to the group of scales on bank deposit factors.

Thus, in this thesis, the author use variables including: LISTED (listed bank, also known as listed characteristics), CDR (the ratio of outstanding certificates of deposit to total assets) and DEPOSITR (the current deposit ratio to total assets).

3.2.2 MEASUREMENT OF RISK TAKING LEVEL

Within the scope of the thesis, the author inherits a number of research works such as Hou et al. (2014), Cubilas et al. (2012), Hoang et al. (2014) ... to measure the variable "risk taking" from 3 angles:

(1) CAPRISK - Capital investment risk acceptance: is the ratio of shareholder capital to total assets. The higher ratio shows the healthier bank's financial situation.

(2) CREDRISK - Credit risk acceptance: is the ratio of credit loss provisions to total debt. This ratio shows the bank's credit growth policy. If this ratio is high, it means the bank is making high provisions for credit risks. This means that banks are trading off bad debt risk with higher profits.

(3) LIQRISK - Payment risk acceptance: is the ratio of total debt to deposit amount. This ratio is high, indicating that the bank lends high. This can cause banks to face high credit and liquidity risks.

3.2.3 MEASURING BANKING EFFICIENCY

In the thesis, the author found that the following 3 indicators measure business performance (from the perspective of financial efficiency) of commercial banks: ROA, ROE and NIM (net interest margin) reflect quite fully and accurately bank efficiency. Specifically, the calculation is as follows:

• Return on total assets (ROA)

$$\text{ROA} = \frac{\textbf{Return after tax}}{\textbf{Total assets}}\ \boldsymbol{x100\%}$$

The author agrees with Dietrich and Wanzenried's (2011) comments on ROA as follows: ROA has emerged as an important ratio to evaluate bank profits and has become the most popular measure of profitability of banks because it evaluates the profitability of all assets of a bank

• Return on equity (ROE)

$$\text{ROE} = \frac{\textbf{Return after tax}}{\textbf{Equity}}\boldsymbol{x100\%}$$

ROE shows the efficiency of banking operations through the efficiency of using shareholder capital because ROE shows how much profit a dollar of equity creates for shareholders.

• Interest income margin ratio or net interest margin-NIM

$$\text{NIM} = \frac{\boldsymbol{Net\ interest\ profit}}{\boldsymbol{Average\ total\ profitable\ assets}}\boldsymbol{x100\%}$$

NIM is often considered to represent a bank's core business performance through two basic banking functions: capital mobilization and lending. If the NIM index is high, it proves that the bank organizes business activities (especially capital mobilization and lending activities) effectively. Because NIM indicates the bank's profitability, it is considered an important indicator for investors and customers in making decisions to invest or deposit money in banks.

3.2.4 MEASUREMENT OF OTHER CONTROLLED VARIABLES

*Control variables for each bank: include variables SIZE (bank size), STATE (state ownership), OE (bank operating costs), DIV (income diversification). As follows:

-SIZE: bank size variable, measured by the logarithm of total assets, is a control variable.

-STATE: state ownership. This is a dummy variable, calculated with the value 1 if the commercial bank is over 50% state-owned and 0 if the bank is under 50% state ownership.

-OE is the bank's operating cost variable. The OE variable is determined by the ratio of operating expenses to total assets.

-DIV is the income diversification variable. The variable DIV is determined by the ratio of non-interest income to total assets.

*Control variables belong to macroeconomic factors: INF inflation rate index is measured by CPI price index, GDP is measured by the gross national product growth rate.

3.3 BUILDING RESEARCH HYPOTHESIS AND RESEARCH MODEL

3.3.1 MODEL (1): THE IMPACT OF MARKET DISCIPLINE ON RISK TAKING OF VIETNAMESE COMMERCIAL BANKS.

3.3.1.1 BUILDING RESEARCH HYPOTHESIS MODEL (1)

Based on the content analysis characteristics of the impact of market discipline and other independent variables on banks' risk taking, the author build hypotheses for model (1): H1- "The impact of market discipline on banks' risk taking of Vietnamese commercial banks” as follows:

Hypothesis H1-1: - Market discipline has a negative impact on banks' risk taking Vietnamese commercial banks. In other words, market discipline puts pressure on banks to reduce the level of risk taking.

3.3.1.2 MODEL (1): THE IMPACT OF MARKET DISCIPLINE ON RISK TAKING OF VIETNAMESE COMMERCIAL BANKS.

Inheriting the research work of the above researchers, especially Hoang et al. (2014), Uchida and Satake (2009), Hou et al. (2014), the thesis uses a multivariate regression model to build model (1): the impact of market discipline on bank risk taking as follows:

$$CNRR_{i,t} = \beta_0 + \beta_1 KLTT_{i,t} + \gamma X_{i,t} + \varepsilon_{i,t} \quad (1)$$

In there:

+ i: bank

+ t: time

+ CNRR: banking risk taking
+ KTTT: Market discipline
+ X: Control variables
+ ε: remainder.

*Dependent variable: CNRR: includes a set of variables representing the level of the bank risk taking. CNRR includes variables: CAPRISK (accepting capital investment risk), CREDRISK (accepting credit risk), LIQRISK (accepting payment risk).

*Explanatory variables:

The author uses the variable KLTT including a set of variables: LISTED (listing characteristics), CDR (the ratio of outstanding certificates of deposit to total assets) and DEPOSITR (the ratio of current deposits to total assets. It is expected that the variables representing the market discipline will have an inverse (negative sign) with the bank's risk taking. Or in other words, the market discipline will have an inverse impact on the bank's risk taking.

*Control variables:

Control variables for bank characteristics

Control variables for each bank: include variables SIZE (bank size), STATE (state ownership), OE (bank operating costs), DIV (income diversification).

*Control variables belong to macro factors: including GDP and INF variables.

3.3.2 MODEL (2): IMPACT OF MARKET DISCIPLINE ON THE FINANCIAL EFFICIENCY OF VIETNAMESE COMMERCIAL BANKS.

3.3.2.1 BUILDING RESEARCH HYPOTHESIS MODEL (2)

Based on the content analysis characteristics of the impact of market discipline and other independent variables on banks' financial efficiency, the author build hypotheses for model (2)-H2: "The impact of market discipline on banks' financial efficiency of Vietnamese commercial banks ” as follows:

Hypothesis H2-1: - Market discipline through the variable LISTED affects the financial efficiency of Vietnamese commercial banks in the same direction. This means: when a bank lists on the HOSE or HNX stock exchange, it will help increase the efficiency of the bank's business operations.

Hypothesis H2-2:- Market discipline, CDR variables (ratio of certificates of deposit to total assets) impact in the same direction with financial efficiency This means: when a bank increases the ratio of certificates of deposit to total assets (CDR), it will increase the bank's financial efficiency.

Hypothesis H2-3:-Market discipline, considering the variable DEPOSITR (ratio of current outstanding deposits to total assets) has a negative impact on financial efficiency. This means: when a bank increases the ratio of current outstanding deposits to total assets, it will reduce the bank's financial efficiency.

3.3.2.2 MODEL (2): IMPACT OF MARKET DISCIPLINE ON THE FINANCIAL EFFICIENCY OF VIETNAMESE COMMERCIAL BANKS.

The author inherits the research works of Bliss and Flannery (2002) (arguing that listed banks have an advantage in accessing the capital market at lower costs than non-listed banks, This is the basis to help increase financial efficiency for commercial banks); by Ghosh and Das (2003), Uchida and Satake (2009). Therefore, the thesis plans to use the following model to test the impact of market discipline on banking efficiency:

$$HQTC_{i,t} = \alpha_0 + \alpha_1 KLTT_{i,t} + \pi W_{i,t} + U_{i,t} \quad (2)$$

In there:

+ i: bank
+ t: time
+ KTTT: Market discipline
+ HQTC: Bank financial efficiency
+ W: Control variables
+ U: remainder.

*Dependent variables:

The dependent variable financial efficiency in equation (2) includes variables measuring separate banks' financial efficiency, specifically including 3 variables: ROA, ROE and NIM.

*Explanatory variables:

Variables KLTT: is a set of variables including the variables LISTED (listing characteristics), CDR (ratio of outstanding certificates of deposit to total assets) and DEPOSITR (ratio of current deposits to total assets).

* Control variables:

Other control variables for each bank: include variables SIZE (bank size), STATE (state ownership), OE (bank operating costs), DIV (income diversification).

Control variables belong to macro factors: including variables GDP (gross domestic product) and INF (annual inflation rate).

3.3.3 MODEL (3): THE CHANGE IN RISK TAKING AFFECT THE IMPACT OF MARKET DISCIPLINE ON THE FINANCIAL EFFICIENCY OF VIETNAMESE COMMERCIAL BANKS.

3.3.3.1 BUILDING RESEARCH HYPOTHESIS MODEL (3)

The empirical evidence shows that market discipline is a factor affecting bank financial efficiency while risk taking also has an impact on market discipline and financial efficiency. Therefore, the changes in risk taking may affect the impact of market discipline on the financial efficiency of Vietnamese commercial banks. To test this relationship, the author used additional interaction variables between market discipline and risk taking (beside the variables representing market discipline, risk taking, and other control variables) as a basis for building the model (3) and develop research hypotheses as follows:

Hypothesis H3-1: Risk taking affects financial efficiency of Vietnamese commercial banks. Because of the formula for calculating the variable -CAPRISK (CAPRISK is equal to the ratio of shareholder capital to total assets) and the formula for calculating the variable return on equity (ROE is equal to the ratio of profit to shareholder's capital). Therefore, the author does not consider the impact relationship between CAPRISK and interactive variables with CAPRISK on ROE.

Hypothesis H3-2: the changes in risk taking may affect the impact of market discipline on the financial efficiency of Vietnamese commercial banks.

3.3.3.2 MODEL (3): THE CHANGE IN RISK TAKING AFFECT THE IMPACT OF MARKET DISCIPLINE ON THE FINANCIAL EFFICIENCY OF VIETNAMESE COMMERCIAL BANKS.

The thesis plans to build model (3) to test how market discipline and risk taking affect banking efficiency as follows:

$HQTC_{i,t} = \alpha 0 + \alpha 1 KLTT_{i,t} + \alpha 2 CNRR_{i,t} + \alpha 3\ KLTT_{i,t} * CNRR_{i,t} + \pi W_{i,t} + U_{i,t}$ (3)

In there:

+ i: bank
+ t: time
+ KTTT: Market discipline
+ CNRR: risk taking
+ KTTTT *CNRR: interaction variable between KTTTT and CNRR
+HQTC: financial efficiency
+ W: Control variables
+ u: remainder.

* Dependent variable: Financial efficiency in equation (3) re presents separate indicators, specifically including 03 variables: ROA, ROE and NIM.

*Explanatory variables:

Variables KLTT: is a set of variables including the variables LISTED (listing characteristics), CDR (ratio of outstanding certificates of deposit to total assets) and DEPOSITR (ratio of current deposits to total assets).

*Independent variables on risk taking: are investment capital risk (CAPRISK), credit risk factor (CREDRISK) and liquidity risk factor (LIQRISK).

3.4 ESTIMATION RESEARCH PROCESS

The author perform data analysis and processing mainly on Excel and STATA software. Specifically, the research and data processing process follows 6 steps as follows:

Step 1: Descriptive statistics, correlation analysis and implementation of Ordinary linear regression model (OLS model, also known as POOL model in Stata).

Step 2: Check multicollinearity, heteroscedasticity, and autocorrelation of the OLS - POOL model according to the results of step 1

Step 3: Linear regression according to FEM (random effects) and REM (fixed effects) models

Step 4: Use the Hausman test to choose the FEM or REM model

Step 5: Check the heteroscedasticity and autocorrelation of the FEM/REM model according to the results of step 4

Step 6: Use the GLS model

Step 7: Check, detect and handle endogenous variables.

CHAPTER 4: RESEARCH RESULTS AND DISCUSSION

4.1 CURRENT STATUS OF MARKET DISCIPLINE, RISK TAKING AND FINANCIAL EFFICIENCY OF VIETNAMESE COMMERCIAL BANKS IN THE PERIOD 2008 - 2022.

The thesis extensively analyzes the fluctuating situation of market discipline, risk taking and financial efficiency of Vietnamese commercial banks in the period 2008 - 2022.

4.2 STATISTICS DESCRIBE RESEARCH DATA.

A set of characteristic values such as number of observations, standard deviation, average value, maximum and minimum value of the variables used in the research. Data from 30 banks over 15 years form a panel data set with 435 observations.

4.3 CORRELATION MATRIX AND MULTICOLLINEARITY TEST.

There was no evidence of multicollinearity in all 3 research models

4.4 VALIDATION OF THE RESEARCH MODEL.

The author tested all 3 research models according to the 6-step sequence as presented in chapter 3. The results showed that all 3 models must follow the GLS method. The results after implementing the GLS method are all statistically significant.

4.5 REGRESSION RESULTS AND DISCUSSION.

4.5.1 REGRESSION RESULTS OF MODEL 1 - THE IMPACT OF MARKET DISCIPLINE ON RISK TAKING.

GLS regression results show that the DEPOSITR variable has a negative impact on the bank's risk taking level and is statistically significant at the 5% level (for the CAPRISK and CREDRISK variables) and at the 1% level (for the LIQRISK variable). Thus, initially, it can be seen that market discipline exists in Vietnamese commercial banks, specifically market discipline reduces the level of risk taking of commercial banks in Vietnam.

This research result also coincides with hypothesis H1-1: - Market discipline has a negative impact on the level of risk taking of banks. In other words, market discipline creates pressure on banks to reduce the level of risk taking.

4.5.2 MODEL 2 REGRESSION RESULTS: IMPACT OF MARKET DISCIPLINE ON FINANCIAL EFFICIENCY

The factor of listed bank characteristics (LISTED) impacts in the same direction as ROA and ROE and at the 1% statistical significance level. This means that centralized listing will help banks increase financial efficiency. The results coincide with research hypothesis H2-1: Market discipline (considering the LISTED variable) affects bank financial efficiency in the same direction.

The CDR variable has a positive impact on ROE and NIM at the 10% statistical significance level. Thus, increasing the CDR ratio will help the bank increase ROE and NIM. This research result coincides with the author's research hypothesis H2-2: Market discipline with CDR variables impact in the same direction as bank financial efficiency.

The variable DEPOSITR has a negative impact on ROA, ROE and NIM and is statistically significant at the 1% level. In case a bank mobilizes capital to lend, the interest rate of the mobilization is the cost, high costs can reduce profits. This result coincides with the author's hypothesis H2-3: Market discipline with DEPOSITR variable have a negative impact on financial efficiency. This research result reinforces the view that commercial banks should diversify their business activities to improve banking efficiency.

4.5.3 REGRESSION RESULTS OF MODEL 3: THE CHANGE IN RISK TAKING AFFECT THE IMPACT OF MARKET DISCIPLINE ON THE FINANCIAL EFFICIENCY OF VIETNAMESE COMMERCIAL BANKS.

The results show that:

In general, the research results show that risk taking has an impact on financial efficiency; Market discipline has an impact on risk taking and financial efficiency, and at the same time, the change in risk taking affect the impact of market discipline on the financial efficiency of vietnamese commercial banks. The results are all statistically significant and match expectations in terms of sign and initial assumptions.

CHAPTER 5: CONCLUSION AND POLICY IMPLICATIONS

5.1 CONCLUDE.

The author uses OLS, FEM, REM, GLS and GMM (the case of dealing with endogenous variables) regression methods running on Stata 17 software for 3 separate models. The regression results are all statistically significant and in accordance with the initial hypothesis. Detail:

Firstly, the DEPOSITR variable (belonging to the group of variables representing the market discipline) has a negative impact on the risk taking variables, showing the result: market discipline exists in Vietnamese commercial banks, meaning depositors react to the bank's risk taking.

Second, the combination of 3 variables representing the market discipline including: LISTED, CDR and DEPOSITR all have a significant impact on financial efficiency:

The variable LISTED has the same impact as financial efficiency. This shows that listing activities on the stock exchange have an impact on increasing the operational efficiency of banks.

The CDR variable also has the same impact with ROE and NIM. Or in other words: when a bank increases certificates of deposit, it will help increase the efficiency of the bank's business operations.

In particular, the DEPOSITR variable has a negative impact on banks' financial efficiency In cases banks are required to mobilize to lend, the interest rate of mobilization is the cost, high costs can affect the bank's profits.

Third, risk taking (both CAPRISK, CREDRISK and LIQRISK) have a positive impact on financial efficiency (regression models 3.1, 3.2, and 3.3).

Fourth, the change in risk taking affect the impact of market discipline on the financial efficiency of vietnamese commercial banks (acording to the regression result of models 3.1, 3.2, and 3.3). This impact can be positive or negative.

Fifth,variables belonging to bank characteristics such as OE, DIV, SIZE, STATE and macroeconomic variables such as INF and GDP also have a statistically significant impact on risk taking and financial efficiency of Vietnamese commercial banks. .

5.2 POLICY IMPLICATIONS.

The above research results are the basis for the author to suggest the following policy implications:

5.2.1 FOR COMMERCIAL BANKS.

Firstly, market discipline exists in Vietnamese commercial banks. Bank administrators need to pay attention to the role of market discipline to consider and choose the appropriate level of risk taking for their units and the market.

Second, strengthening the market discipline at the bank is a solution that not only helps commercial banks increase the bank's resilience but also increases transparency, enhances the bank's reputation and position in the financial market in the domestic market local and international market. Furthermore, information transparency has put pressure on banks to manage better, be more cautious with risks, and operate more stably.

Third, the regression results of model (2) have provided empirical evidence that: increasing the ratio of deposit certificates to total assets (CDR) has the effect of increasing the ratio of returns on equity (ROE) and NIM of the bank. This result helps administrators consider prioritizing capital mobilization in the form of certificates of deposit at their banks.

Fourth, the regression results of model (2) also show that the deposit to total assets ratio (DEPOSITR) has a negative impact on banks' financial efficiency. Therefore, administrators should orient the development of service activities other than traditional banking services to improve financial efficiency.

Fifth, the changes in risk taking may affect the impact of market discipline on financial efficiency. Therefore, bank administrators should consider planning strategies on risk taking and market discipline to improve the financial efficiency of the banks.

Sixth, beside strategies related to risk taking, market discipline, managers should consider strategies related to factors belonging to bank characteristics to plan more effective business strategies (because according to the results of the author's research, these factors also impact on risk taking and financial efficiency of Vietnamese commercial banks).

Seventh, commercial bank administrators need to invest and regularly cultivate knowledge and foster professional ethics for all employees of their units. In addition, the construction of training centers along with the development of training programs focusing on building corporate culture should be implemented synchronously at commercial banks to contribute to creating a talented and ethics human resources.

5.2.2 FOR STATE BANKING ADMINISTRATORS

Firstly, because market discipline affects the risk taking, the State Bank needs to soon have policies on information disclosure and encourage measures to strengthen market discipline to strengthen market supervision from there They can reduce the level of risk taking of commercial banks in Vietnam.

For commercial banks: The State Bank needs to soon issue legal regulations on information disclosure. The disclosure of information by banks must have strict sanctions related to information disclosure units and independent audit units performing audit services for commercial banks. The promulgation of regulations on information disclosure should be designed in more detail, clearly specifying frequency and regularity.

For investors, state management agencies should also encourage the establishment of independent private investment consulting and information analysis units to provide more understandable information for investors. Because not all investors are able to understand the financial statements of commercial banks.

Second, in addition to continuing to promote commercial banks to complete listing on HOSE or HNX, the government, state banks and other departments, information quality management is equally important. From there, it not only helps improve transparency and health in the banking system but also ensures equal competition and better internal strength in Vietnamese commercial banks.

Third, the government and state banks need to strengthen supervision, enhance market discipline and implement flexible macro policies and monetary policies to create conditions for the commercial banking system to operate effectively and healthily. and more secure.

In terms of strengthening market discipline, the State Bank needs to actively promote commercial banks to meet Basel standards according to the roadmap and move forward with the requirement to convert information disclosure reports according to international standards.

Fourth, the key solution for the entire industry is still the issue of quality and ethics of human resources in the banking industry. Along with recruiting staff, regularly fostering knowledge, propagating and reminding about ethical issues, the State Bank needs to have solutions to limit violations of professional ethics. At the same time, the State Bank also needs to propose to the Government more stringent sanctions (especially for senior officials) for individuals and officials who violate industry regulations.

5.3 LIMITATIONS, FURTHER RESEARCH DIRECTIONS.

First, the data used in the analysis is taken from Bankscopes data source combined with data from Financial Reports compared and contrasted with data of securities companies. However, because the data of some Vietnamese commercial banks (in the period 2008-2022) is not publicly announced and is not consistent, the collected panel data is missing some observations. This is a limitation of the thesis. Therefore, the author proposes that the next research direction is to expand the research sample to include foreign bank branches, credit funds...

Second, regarding the market discipline scale, the author has only researched the group of scales belonging to bank deposits and bank listing characteristics. Therefore, the next research direction proposed by the author is to expand the scale of market discipline to bank deposit interest rates.

Third, because the factor of state-owned banks creates public confidence in the bank's reputation. Shadow government guarantees can weaken market discipline by reducing investor incentives to monitor and “supervise” banks. This is also the author's proposed next research direction on market discipline with the content: the impact of state capital ownership on market discipline in the Vietnamese commercial banks.