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**FINANCIAL RISK MANAGEMENT AND PERFORMANCE OF SMALL
AND MEDIUM-SIZED ENTERPRISES IN VIETNAM**

Speciality: Finance - Banking

Code: 9.34.02.01

SUMMARY OF PH.D THESIS OF ECONOMICS

Ho Chi Minh City – 2023

PhD Thesis completed at: University of Finance – Marketing

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Thesis can be searched at the library:

THE AUTHOR'S PUBLICATIONS RELATED TO DISSERTATION

Domestic Journal

1. Mai Thi Tuyet Nhung (2023). Financial risk management and performance of small and medium-sized enterprises in Vietnam. *Industry and trade magazine*, No. 2 (1), 228-233.
2. Mai Thi Tuyet Nhung (2021). The correlation between the financial risk management and the business performance of Vietnamese small and medium-sized enterprises. *Industry and trade magazine*, No. 3 (2), 280-289.
3. Mai Thi Tuyet Nhung (2021). Factors affecting the financial risk management of small and medium-sized enterprises in Vietnam. *Industry and trade magazine*, No. 1 (1), 300-309.

SUMMARY OF THESIS

The thesis studies the correlation between the financial risk management and the business performance of Vietnamese small and medium-sized enterprises. Data is collected from financial statements in the period of 2008 to 2020.

The research of thesis uses the method of logit regressions, Fixed Effect Model (FEM), Generalized Method of Moments (GMM) dynamic panel data to assess the direct impact of financial risk management on business performance of Vietnamese small and medium-sized enterprises.

The results of the study show that financial risk management has a positive effect on the performance of small and medium-sized enterprises in Vietnam. At the same time, this research result of the thesis helps to identify the factors of financial leverage, size, tangible assets, liquidity, tax and age that affect financial risk management in small and medium-sized enterprises in Vietnam. This has important implications for both managers, business owners and investors.

The thesis finds new evidence that financial risk management increases the efficiency of small and medium-sized enterprise operations in Vietnam. The proposed policy implications affirm the importance of helping corporate administrators and policymakers have a solid basis in building financial risk management strategies for small and medium-sized enterprises.

Keywords: Financial risk management, performance, small and medium-sized enterprises, Vietnam.

CHAPTER 1

OVERALL TO THE STUDY

1.1 Context

Financial risk management plays a central role, increasing business productivity as well as corporate value (Allayannis & Weston, 2001; Kipitsinas, 2008; Ahmed et al., 2014; Giraldo-Prieto et al., 2017) by reducing costs. Financial distress costs (Stulz, 1996; Ross, 1997 and Leland, 1998), taxes (Smith & Stulz, 1985) and minimizing investment costs stem from the cost of costly external financing (Bessembinders, 1991; Froot et al., 1993). Bachiller et al (2021) said that previous studies have the same opinion as above, most of the studies show that the research results of FRM (financial risk management) have the most positive effects. It addresses issues such as financial distress, tax savings, and leveraged capital mobilization (Smith & Stulz, 1985; Nance et al., 1993; Haushalter, 2000; Bartram et al., 2009; Ameer, 2010; Sprcic & Sevic, 2012; Kouser et al, 2016; Alam & Afza, 2017; Lee, 2019; Seok et al, 2020; Zamzimir et al, 2021; Butt et al, 2021). Therefore, the research trend mentioned above shows interest in assessing the factors affecting financial risk management, exploiting the influence of these factors in order to improve the performance of enterprises, especially SMEs.

Many firms and financial institutions collapsed during the 2008 global financial crisis due to poor risk management (Siddika and Haron, 2020). Following this, financial derivatives have become extremely popular as a hedging instrument among the nonfinancial firms for risk management (Ayturk & et al, 2016; Sheedy, 2006; Brunzell & et al, 2011) use derivatives to manage risk on changes in interest rates, exchange rates and commodity prices. In relation to this, Nguyen and Faff (2002), Adam and Fernando (2006), Seok & et al (2020) found that firm value increased due to manager's decision to hedge (Zamzimir & et al, 2021).

Besides Financial risk management attracting more and more attention of investors is an important factor to improve the efficiency of business operations, thereby increasing the trust of partners. The results demonstrate that financial risk management has an impact on firm performance (Smithson and Simkins, 2005; Hoyt and Liebenbeg, 2011; Eckles et al., 2014; Abeyrathna and Kalainathan, 2016; Chen et al., 2019; Farrell and Gallagher, 2019; Lee, 2019; Malik et al, 2020; Zamzimir et al, 2021; Butt et al, 2021). These studies only mention the financial risk management aspect according to the method of choosing derivative products because of its efficiency, speed and not mentioned for SMEs that may not be enough for SMEs. conditions to use derivatives should not use other financial instruments, this can be seen in the context of international economic integration as today opens up many investment opportunities and comes with great challenges big. Enterprises face many risks due to the constant changes and fluctuations of market factors such as interest rates, exchange rates and commodity prices, or from management's decisions with potentially difficult fluctuations. impact on the investment process as well as business performance. The measurement with many types of financial risks such as financial leverage, liquidity, trade credit, interest rates, raw material prices has not been determined, comprehensive assessment of identifying factors affecting financial risk management has not been determined. in enterprises in general and SMEs in particular.

Small and medium-sized enterprises (SMEs) play an important role in almost every economy in each country (Ayyagari et al, 2007; Burgstaller and Wagner, 2015). The limited problem of SMEs is the lack of finance. Comparing to large enterprises, SMEs are often seen as having a simpler, more flexible and sensitive internal organization in responding to and adapting to market changes (Lavia Lopez and Hiebl, 2014). Furthermore, most enterprises are averse to financial risks when they occur. Bhunia and Mukhuti (2012) financial risk comes from a variety of sources. Financial risk is the possibility of losses incurred by an enterprise due to internal and external influences depending on changes in the financial market such as prices, interest rates, exchange rates, etc. affecting asset value, debt and operational efficiency. Financial risk is the type of risk that a business must face when raising capital from debts to

finance its business activities will create for the business interest obligations that must be paid to creditors so that it has an impact on the income of SMEs, etc. theoretically as well as experimentally (Gang and Dan, 2012).

In addition, SMEs often face many challenges. SMEs have little advantage in terms of scale of economy as well as opportunity to access to many other resources (Burgstaller and Wagner, 2015; Lavia Lopez and Hiebl, 2014). Therefore, not only large enterprises need risk management, but SMEs also need to pay attention to this activity in order to minimize unwanted effects, promptly identify risks and have a plan to deal with them (Miller, 1992; Brustbauer, 2014). Misjudging or not realizing the risk can have disastrous consequences, ranging from customer loss to property, brand damage and even bankruptcy (Hollman and Mohammad-Zadeh, 1984). However, reality shows that many SMEs do not apply risk management measures (Marcelino-Sádaba et al., 2014; Falkner and Hiebl, 2015). In that context, if financial risk is not well controlled, the company may fall into a situation of reduced profit; On the contrary, if done well, it will help reduce costs and improve efficiency. Facing difficulties and challenges also shows that financial risk management is indispensable; is attracting the attention of policymakers, researchers and business owners as important as a top task.

Financial risk management at enterprises is now a matter of survival, because when joining WTO, enterprises have to face directly with foreign enterprises without any protection from the Government (Nguyen Thi Ngoc Trang, 2008). Financial risk management is the process of creating business value by using financial techniques and methods to manage credit, exchange rate, interest rate, price and liquidity risks (Crockford, 1986); Verbano and Venturini, 2013).

For SMEs in Vietnam, financial risk management is more urgent than ever. According to the statistics of the Vietnam Bureau of Statistics, by the end of 2020, the number of SMEs accounts for 94% of the enterprise structure of the country. However, these enterprises have not yet built their own effective financial risk management strategies, making their ability to respond to risks to be still weak. In the face of economic uncertainties, SMEs are subject to many impacts and as a result, their ability to recover is poor.

In terms of empirical studies, there are currently many research to work on financial risk management in the world. Most of these studies have demonstrated that financial risk management has certain positive effects on issues such as financial distress, tax savings, and the ability to raise capital with financial leverage of enterprises (Smith and Stulz, 1985; Nance et al., 1993; Haushalter, 2000; Bartram et al., 2009; Rashid Ameer, 2010; Sprcic and Sevic, 2012; Kouser et al., 2016). However, the results of these studies still do not have consistent results on how to manage financial risks. In addition, studies have also demonstrated that financial risk management has a positive impact on corporate performance (Smithson and Simkins, 2005; Hoyt and Liebenbeg, 2011; Eckles et al., 2014; Abeyrathna and Kalainathan, 2016; Farrell and Gallagher, 2019; Malik et al., 2020). Studies support financial risk management by the method of choosing derivative products because of its efficiency and speed. This shows that it is necessary to study the impact of financial risk management on the performance of small and medium-sized enterprises in different countries.

In that condition, there are actually very few studies on SME financial risk management, especially in Vietnam. There are a few studies on each type of derivative products such as futures contracts or options for investors' risk management strategy (Nguyen Thi Ngoc Trang, 2008; Vu Minh, 2013; Trinh Thi Phan Lan, 2016). Currently, there is no research on the impact of financial risk management on the performance of small and medium-sized enterprises in Vietnam.

Stemming from the above urgent research and practical requirements, the topic **“Financial risk management and performance of small and medium-sized enterprises in Vietnam”** is chosen as the doctoral thesis with the aim of solving the problem which is still open. From there, it helps to suggest important policies to help small and medium-sized enterprises grow and contribute more to the development of the economy in Vietnam.

1.2 Research objectives

The main objective of this thesis is to study the impact of financial risk management on the performance of small and medium-sized enterprises in Vietnam. On the basis of the proposed research objectives, the thesis aims to focus on clarifying the research questions in order to solve the following research problems:

1. What factors affect the financial risk management of small and medium-sized enterprises?
2. What is the direction of impact of financial risk management on the performance of small and medium-sized enterprises in Vietnam?
3. What are the proposed policy implications for improving the performance of small and medium-sized enterprises in the financial risk management?

1.3. Object and scope of the study

The object of the study is the impact of financial risk management on the performance of small and medium-sized enterprises in Vietnam.

Scope of study: The small and medium-sized enterprises of Vietnam over a period of 13 years, from 2008 to 2020.

1.4. Study methodology

To fulfill the first objective, the thesis uses logit (logistic regression) and probit regression methods. To choose logit or probit is based on the index Pseudo R^2 . The R^2 measure used to check the fit of the model of the limited dependent variable is Pseudo R^2 , also known as McFadden R^2 , denoted as R^2_{McF} . Like R^2 , R^2_{McF} lies between 0 and 1. After choosing the appropriate regression method, conduct correlation analysis, multicollinearity test, independent samples t-test.

To fulfill the second objective, the impact of financial risk management on the performance of small and medium-sized enterprises in Vietnam. The thesis proceeds by regression linear model according to all three methods OLS, FEM and REM with F test; Hausman test. After selecting the regression method suitable for the model, to continue the Modified Wald test to check the heteroskedasticity, to hypothesize H_0 : no heteroskedasticity; Wooldridge test for autocorrelation with hypothesis H_0 : no autocorrelation; Durbin+Wu-Hausman test for endogeneity with the hypothesis H_0 : the variable has no endogenous phenomenon and test the Variance Inflation Factor (VIF) to detect multicollinearity. In this case, if the model has defects that violate the regression hypothesis, use the GMM method to overcome the weaknesses.

To achieve the third objective, propose policy implications based on the research results. The thesis research uses the method of analysis and evaluation on the basis of data of small and medium-sized enterprises in Vietnam.

1.5. New contributions of the thesis

On the basis of the results of related previous studies and the actual situation, relatively theoretical issues on financial risk management and performance of enterprises are gathered; thereby forming an analytical framework to analyze the impact of financial risk management on the performance of small and medium-sized enterprises in Vietnam. Through the research results, the thesis has new meaningful contributions to science and practice in the field of research:

Contribution of the thesis in terms of science

When studying financial risk management and corporate performance, most previous studies only mentioned issues such as (1) the relationship between financial risk management and corporate performance (Smithson and Simkins, 2005; Hoyt and Liebenberg, 2011; Eckles et al., 2014; Trinh Thi Phan Lan, 2016; Abeyrathna and Kalainathan, 2016; Farrell and Gallagher, 2019; Malik et al., 2020); (2) evaluate what factors affect the financial risk management of enterprises (Smith and Stulz, 1985; Nance et al., 1993; Fox et al., 1997; Haushalter, 2000; Bartram et al., 2009; Rashid Ameer, 2010; Talat Afza, 2011; Sprcic and Sevic, 2012; Nguyen Khac Quoc Bao, 2014; Trinh

Thi Phan Lan, 2016; Kouser et al., 2016). Therefore, the thesis topic approaching the issue of financial risk management and operational efficiency of small and medium-sized enterprises in Vietnam is carried out on the basis of inheriting the results of relevant empirical researches.

The research objective of the thesis is the impact of financial risk management on the performance of small and medium-sized enterprises. Based on this basis, the author examines the impact of financial risk management on the performance of Vietnamese small and medium-sized enterprises in order to fill in the blanks and contribute as a necessary and useful reference for future scientific research, so that it is scientifically meaningful.

Contribution of the thesis in terms of practice

The thesis has clarified the research objective of the impact of financial risk management on the performance of small and medium-sized enterprises in Vietnam from 2008 to 2020. The research results of the thesis also find evidences. The new study shows that implementing financial risk management increases operational efficiency, which is an important empirical evidence to help corporate administrators and policymakers have a solid foundation in formulating strategies of financial risk management for small and medium-sized enterprises.

The research results of the thesis identify the factors of financial leverage, size, tangible assets, liquidity, tax and age that have an impact on financial risk management in SMEs in Vietnam. This has important implications for both managers, business owners and investors. At the same time, the thesis also gives the Pseudo R^2 index. The R^2 measure is used to test the fit of the model of the limited dependent variable, which is Pseudo R^2 or also known as McFadden R^2 to choose logit or probit and predict the accuracy of the model with the overall correct prediction rate of 86.32%. This is a somewhat different point of SMEs as compared to Vietnamese enterprises.

1.6. Thesis structure

In order to achieve the research objectives set out, the content of the thesis is presented in 5 chapters:

Chapter 1: Overall to the study

Chapter 2: Fundamental of theory and prior studies

Chapter 3: Research Methods

Chapter 4: Research results

Chapter 5: Conclusion and policy implications

CHAPTER 2

FUNDAMENTAL OF THEORY AND PRIOR STUDIES

2.1 Theoretical overview of financial risk management and performance of small and medium-sized enterprises

2.1.1 Financial risk management

2.1.1.1 Concepts

Risk management is the process of protecting the assets of an enterprise against possible losses when carrying out its activities through the use of a variety of prevention tools in the most cost-effective conditions. The application of risk management methods helps enterprises reduce the probability of events that may cause damage to enterprises in the process of production and business. Thereby creating value for the enterprise, maximizing business profits by minimizing costs or losses when risks occur (Urciuosli and Crenca, 1989). Risk management is the identification, measurement and control of the types of risks that may threaten assets and income from the main services or from the main production and business activities of an enterprise or industry of a manufacturing enterprise (Nguyen Thi Ngoc Trang, 2007).

Risk management is the process of approaching risk in a scientific, comprehensive and systematic way in order to identify, control, prevent and minimize damages, losses and adverse effects of risks (Doan Thi Hong Van, 2013) or hedging is a component of a more holistic process known as risk management (Don and Robert 2015). Risk

management is a broader concept than hedging. It's not only just about using derivatives to reduce risk similar to hedging, risk management also recognizes the level of risk the business is taking to adjust risks as desired.

According to Falkner and Hiebl (2015), risk management can help SME managers promptly identify significant risks that may jeopardize the success or survival of an enterprise and have a plan to deal with it effectively (Miller, 1992; Brustbauer, 2014). Misjudging or not realizing the risk can have disastrous consequences, ranging from customer loss to property damage, brand damage and even bankruptcy (Hollman and Mohammad-Zadeh, 1984).

According to Verbano and Venturini (2011, 2013), economic theory and experimental studies of risk management have developed over time in many different fields. Accompanying it are evaluation methods and models with many specific techniques. In general, most of the research on enterprise risk management focuses on the direction as financial risk management is the process of creating enterprise value by using techniques and financial methods to manage risk (credit, exchange rate, interest rate, price and liquidity) (Crockford, 1986). Enterprise risk management (ERM) is a risk management process applied across the enterprises to identify potential events that may affect the organization (strategic risk, market risk, financial risk, humans, technology and operation in the enterprise). From there, there are actions to strengthen risk tolerance, ensuring business goals are achieved (COSO, 2004).

ERM is believed to reduce direct and indirect costs of financial distress, income volatility and negative shocks in financial markets, as well as improve decision-making for selecting the best investment opportunity (Beasley et al., 2008; Hoyt and Liebenberg, 2011; Paape and Speklè, 2012; Yang et al., 2018).

Risk management is to determine the level of risk a company desires, identify the current level of risk that the enterprise is taking, and use derivatives or other financial instruments to adjust levels of risk according to its desired level (Nguyen Thi Ngoc Trang, 2007).

Financial risk management is the process of creating business value by using financial techniques and methods to manage credit, exchange rate, interest rate, price and liquidity risks (Crockford, 1986); Verbano and Venturini, 2013). Chance and Brooks (2015), financial risk management is a combination of two methods that are risk management from the perspective of the future (focusing mainly on the manager's perspective on the future. If a particular market risk can occur, that risk will be reduced) and manage the risk from the point of view of needs (mainly from the manager's view on existing risk sensitivity). Asset-liability management of an enterprise is an example).

Financial risk management approaches risk management methods from the financial perspective of the business. Specifically, determining the level of risk that an enterprise wants, identifying the current level of risk the business is taking and using derivatives or other financial instruments to adjust the actual level of risk according to the desired level of risk. Thus, *financial risk management in SMEs is a way of using financial tools to adjust the desired level of risk on the basis of identifying and measuring the level of financial risk that the business is taking.*

2.1.1.2 Objectives of financial risk management

The objective of financial risk management in enterprises is to increase the value of the enterprise. By implementing effective methods, financial risk management brings many benefits such as helping enterprises reduce taxes and bankruptcy costs, preventing enterprises from making misleading investments; For example, enterprises that are about to go bankrupt will find that they have little incentive to invest in projects no matter how attractive these projects are. The reason is that such projects only benefit the debtors of enterprises because they only increase the opportunities to pay creditors, helping the enterprises not to suffer losses from investments. At the same time, financial risk management helps enterprises reduce borrowing costs (Nguyen Thi Ngoc Trang, 2007). So, for small and medium-sized enterprises when implementing, the objective of financial risk management in operations is to identify risks, control financial risks, proactively prevent risks, and turn risks into advantage and success (Aabo et al., 2005; Lukianchuk, 2015; Yang et al., 2018).

2.1.1.3 Financial risk management process

The financial risk management process of an enterprise is consistent with the risk management process of enterprises in general and small and medium-sized enterprises in particular, which usually has the following steps: identification, measurement and control of financial risks in research by Hollman et al (1984), Steven Li (2003), Li Zhe, Liu Ke, Wang Kaibi, Shen Xiaoliu (2012), Vu Thi Hau (2013), Trinh Thi Phan Lan (2016), Ahmed, Mukhongo and Datche (2019), de Araújo Lima, Crema and Verbano (2020).

Step 1: Identification of financial risks

Researchers, corporate administrators use many different techniques such as using lists or questionnaires on financial risks; financial statement analysis; contract analysis; study of past loss data. Financial risk is presented under the following risks: interest rates, financial leverage, rates, price fluctuations and credit (Hollman et al., 1984; Andrade and Kaplan, 1998; Kam et al., 2008; Napp, 2011; Trinh Thi Phan Lan, 2016; Pham Tuan Anh, 2017; Ma Van Tue, 2020; Bui Huu Phuoc, 2020; Gonzalez et al., 2020). Indicators for identifying financial risks:

- Interest Coverage Ratio: Interest coverage ratio is calculated as earnings before interest and taxes (EBIT) over total interest expense to identify interest rate risk (Andrade and Kaplan, 1998; Kam et al., 2008; Napp, 2011; Trinh Thi Phan Lan, 2016; Ma Van Tue, 2020; Bui Huu Phuoc, 2020). This ratio shows how many dollars of profit on average per VND of interest incurred during the period. If EBIT is many times larger than loan interest, the ability to ensure payment of interest expenses is high. If the interest coverage ratio is low, the financial risk is higher. When enterprises tend to increase the use of loans, the interest payable on loans will increase. If the business is not doing well, it will lead to profit before interest and taxes to be low or suffer loss, affecting the payment of interest and principal, which is the cause of financial risks or when an enterprise with a smaller interest ratio than an enterprise that is having very large problems in profitability and is unable to pay interest on time and is identified as having interest rate risk. The ability to pay interest on loans must be greater than 1. If this coefficient is less than 1, there are 2 possibilities: i) the enterprise has a lot of debt and inefficient use of debt; ii) low profitability of enterprises, not enough to cover loan interest.

- Identifying risks of financial leverage, risk of material price fluctuations, liquidity risk and trade credit risk according to identification signs of Trinh Thi Phan Lan (2016), specifically as follows:

Financial leverage risk is a sign of debt ratio identification. The high debt-to-total assets ratio indicates that the enterprise relies heavily on debt to finance its assets. Therefore, financial autonomy and borrowing capacity are low.

Exchange rate risk: A sign of profit/loss due to exchange rate difference. If profit > loss due to exchange rate difference, the business is not at risk. If profit < loss due to exchange rate difference, the enterprise faces exchange rate risk.

The risk of price fluctuations through the coefficient of cost of goods sold before net sales indicates the ratio of cost of goods to annual net sales. If this ratio is high in the condition that net sales do not increase, it means that cost of goods is increasing.

Trade credit risk: Accounts receivable on short-term debt. This ratio indicates what percentage of accounts receivable in the enterprise's short-term debt. The coefficient is high or low depending on the credit sales.

Step 2: Measurement of financial risk

Nguyen Thi Ngoc Trang (2007), measuring exogenous and endogenous financial risks.

➤ Measurement of external financial risk

Measures of exogenous risk such as various factor models.

A linear factor model is as follows:

$$R_{it} = \sum_j b_{ij} F_{jt} + e_{it}$$

Where R_i is the rate of return on the i^{th} financial instrument, it may be a bond or a deposit, F_j is the j^{th} factor, b_{ij} is the digital right of the j^{th} multiplier, and e_i is the residual error. In the sense of measuring risk, the coefficient measures the sensitivity of a financial instrument to the j^{th} factor. By regressing the return on the market portfolio (R_m), an estimate of beta (β) is obtained, a measure of an enterprise's market risk.

$$R_{it} = \alpha_i + \beta_i R_{mt} + e_{it}$$

Using a very similar technique—by which analysts obtain a beta coefficient which can measure the market's perception of the sensitivity of an enterprise's value to changes in earnings, interest rates, exchange rates and commodity prices, the model here uses a combination of the models of Flannery and Janes (1984) and Jorion (1990) by including the rate of change of the interest rate ($\Delta r/r$) and exchange rate ($\Delta P_{FX}/P_{FX}$) into the model as an independent variable. Going one more step to estimate the sensitivity to commodity price risk adding to the commodity price change ($\Delta P_c/P_c$) model. Therefore, the equation that we are considering is:

$$R_{it} = \alpha_i + \beta_i R_{mt} + Y_{ri} \left(\frac{\Delta r}{r} \right)^t + Y_{FXi} \left(\frac{\Delta P_{FX}}{P_{FX}} \right)^t + Y_{Ci} \left(\frac{\Delta P_c}{P_c} \right)^t + e_{it}$$

Where β represents the sensitivity of the enterprise to the market and Y_{ri} , Y_{FXi} and Y_{Ci} reflect the sensitivity of enterprise i to interest rate, exchange rate and commodity price risks, respectively.

➤ **Measurement of endogenous financial risk**

The measure of endogenous financial risk is related to cash flow: how sensitive are revenue and expenses to changes in interest rates, exchange rates and/or commodity prices? In practice, enterprises use one of two methods to obtain a measure of endogenous financial risk.

Statistical analysis of revenue and expenses

For many enterprises, almost the first step is to look at the dynamics of the accounting figures – the revenue and expense figures. This is accomplished by using regression to estimate past relationships between financial variables, prices, and key internal metrics such as revenue and costs (as well as less aggregated metrics such as capital expenditure). Using historical data, managers can estimate models of the following form:

$$\text{Revenue}_{it} = a_0 + \sum a_i (\text{financial and price variables})_{it} + e_{it}$$

$$\text{Cost} = b_0 + \sum b_i (\text{financial and price variables})_{it} + e_{it}$$

Simulation – Sensitive of Cash Flow Analysis

Risk management in leading non-financial enterprises has evolved from focusing solely on individual price sensitivities – interest rates, exchange rates or commodity prices to managing sensitivity of enterprises to financial variables, and prices above as a portfolio of interrelated risks.

In fact, financial risk can measure the cost of financial distress. This is an important step to identify the model variable as a proxy for financial distress. The data used to measure financial distress is based on accounting data.

In the enterprise's accounting data-based approach, many studies use financial ratios (Gilbert et al., 1990; Asquith et al., 1994; Denis and Denis, 1995; Andrade and Kaplan, 1998); Pindado et al., 2008; Kam et al., 2008; Tinoco and Wilson, 2013) to consider operating income and debt payment conditions for determining financial distress. Then in the year of observation at time t , an enterprise is considered to be in financial distress when its operating income has been negative for at least 3 consecutive years (Gilbert et al., 1990; Denis and Denis, 1995; Denis and Kruse, 2000) i.e. year t , year $t-1$ and year $t-2$ or profit before tax and interest is less than interest expense for 2 consecutive years (Asquith et al., 1994). i.e. at year t and year $t-1$.

Financial distress costs arise primarily from the use of debt. The more debt an enterprise uses, the greater the cost of financial distress, which increases the risk of financial distress. The Binary Logistic model for measuring the probability of financial distress was first implemented by Ohlson (1980). Hu and Ansell (2005), Fan et al. (2013) Financially distressed firms are those with debt ratios greater than one. This means that the liabilities are greater than

the total assets or the interest coverage ratio is less than one, which means that the cash flow of the business cannot afford to pay the interest. Followed by the studies of Pindado et al (2008), Campbell et al (2011). The dependent variable is a binary variable assigned one of two values: Either 1, if enterprise i is in financial distress in year t , or 0, the remaining cases. Chance and Brooks (2015) have two general approaches to financial risk management, namely the future outlook and the demand perspective.

Risk management from the perspective of the future focuses mainly on the manager's view of the future. If a particular market risk is present, that risk is mitigated. If a particular market risk is unlikely to occur, the risk should not be mitigated. In the stage of deciding not to hedge, the risk can appear and cause large losses. During the hedging decision stage, the risk does not appear and as a result, the cost of hedging is costly. Risk management from the perspective of future outlook is the main method applied to manage financial risks of an organization.

Risk management from a perspective of needs focuses mainly on the manager's view of existing risk sensitivity. A bank's asset-liability management is an example of a demand-based risk management. Bank analysts will determine the interest rate sensitivity of both assets and liabilities. Based on this analysis, the bank may or may not adopt several hedging strategies. Similarly, an airline that hedges fuel prices or a food processor that hedges commodity prices is both a demand-driven risk manager.

Ultimately, financial risk management is a combination of these two approaches to risk management.

Step 3: Financial risk control

Controlling financial risks is the use of appropriate strategies, tools and techniques to avoid risks, accept risks, reduce risk levels, transfer risks, and unexpected effects of risks on enterprises (Li Zhe, Liu Ke, Wang Kaibi, Shen Xiaoliu, 2012; Ernst and Young, 2012), for example to control price risk, many enterprises have adopted preventive measures using tools derivative financial instrument. In a market economy, the prices of goods and raw materials always change depending on the relationship of supply and demand, consumer psychology, economic potential of countries, etc. In general, these causes are difficult to predict accurately. Therefore, the risk of price fluctuations is a common type of risk affecting the financial position of enterprises. Changes in commodity prices. To limit this risk, people often use derivative financial instruments such as: Option (option contract), forward (forward contract), future (future contract), swap (swap contract). The improvement of business understanding and interest in these types of contracts is a remarkable point in financial risk management.

2.1.2. Operational efficiency of enterprises

2.1.2.1. Concept

Operational efficiency of small and medium-sized enterprises is the ability to achieve results and profitability.

2.1.2.2. Performance metrics

To measure operational efficiency, the thesis relies on two indicators ROA and ROE according to accounting value (profit ratios).

2.1.3. Small and medium-sized enterprises

Small and medium-sized enterprises are businesses that have registered their business in accordance with the law and are divided into three levels: micro, small, and medium according to the size of their total capital (total capital is equivalent to the total assets of the enterprise determined in the enterprise's balance sheet) or the average number of employees per year

2.1.4. Background theory on the impact of financial risk management on corporate performance

On the basis of theory summarized from empirical research results of factors affecting financial risk management. To select the appropriate theory for studying the impact of financial risk management on the performance of Vietnamese SMEs.

From the Modigliani and Miller theory, much work is done by omitting the assumptions M and M made. Kraus and Litzenberger (1973) proposed the trade-off theory and developed it by Myers (1984). According to Kraus and Litzenberger (1973), financial leverage reflects a trade-off between the tax benefits resulting from the use of debt. This theory explains why firms often finance a portion of debt in their capital structure. The author argues that the use of debt helps to increase the value of the business due to the benefit from the tax shield of interest. However, the risk may occur when the operating income of the business is not enough to pay the financial obligations from the use of debt, then the business will fall into financial distress.

Theory of risk management can increase enterprise value by reducing the cost of financial distress. Laying the foundation for the theory of risk management to reduce the volatility of enterprises' cash flows, thereby reducing the cost of financial distress are typical economists: Smith and Stulz (1985), Liebenberg and Hoyt (2003). The researchers suggest that if financial distress is costly, enterprises are motivated to reduce the probability and risk management that is one of the methods of choice to be implemented when the business is faced with the possibility of financial distress. If the enterprise has risk management measures, it will reduce costs when financial distress occurs, along with reducing bankruptcy costs. That is to say, by reducing the volatility of cash flows, risk management reduces the cost of financial distress.

The theory of risk management can increase enterprise value through the effect of tax reduction. This theory focuses on risk management as a method for maximizing enterprise value, arguing that reducing the volatility of cash flows can reduce expected taxes. For any given year, the pre-tax income of the business can be high or low, both cases having a probability of 50%. If the tax function is convex, risk management can make cash flows or pre-tax earnings high or low, implying improvisation with the amount of tax payable. For example, if the tax authority stipulates that the pre-tax income of enterprise A is from 50 to 90 million VND, the tax rate is 10% and over 90 million VND, the progressive tax rate is 20%. If the economy is in recession, there is a 50% chance that the enterprise has a pre-tax income of 50 million VND (low) and if the economy booms, there is a 50% chance that the enterprise has a pre-tax income of 150 million VND (high). In the simple probability distribution we often see, low pretax and high pretax earnings will move to an average value of 100 million VND. If not having the risk management, the enterprise will have to pay an average annual tax of 100 million VND multiplied by the 20% tax rate by 20 million VND.

Theory of risk management can increase enterprise value by facilitating elective investment projects. The main theory is that if financing with external sources such as debt or equity is costly, enterprises that have investment projects require funding sources of cash flow risk management to avoid funding shortfalls. When enterprises face a shortfall in cash flow, enterprises will tend to increase their cash holdings by selling assets, cutting dividends, or seeking outside sources of funding investment opportunities by borrowing or issuing equity. However, the use of capital from outside has a higher cost of capital because it includes transaction costs. Due to the disadvantage of higher transaction costs, unlisted firms will tend to hold more cash and cash equivalents than listed firms. There are many empirical studies such as Froot et al. (1993), Opler et al. (1999), Getzy et al. (1997), Haushalter (2000), Allayannis and Ofek (2001), Purnanandam (2008), Bartram et al., (2009), Kouser et al. (2016) have proven and supported this theory.

2.2. Overview of previous studies on financial risk management and corporate performance

Smithson and Simkins (2005), Hoyt and Liebenbeg (2011), Trinh Thi Phan Lan (2016) all stated that the implementation of financial risk management increases corporate efficiency. From an overview of related studies in the world and in Vietnam, the author finds that interest in Enterprise Risk Management has been growing since the 1990s as businesses face several shocks in competitive environments (Arena et al. 2010). In response to unexpected threats, one school of thought believed in the direct impact of Enterprise Risk Management on firm performance

(Callahan and Soileau, 2017; Florio and Leoni 2017; Zou and Hassan 2017) while another group of researchers claimed that the relationship of ERM and firm performance could be affected by some internal factors (Khan and Ali 2017; Wang et al. 2010). Much research has discussed the importance of Enterprise Risk Management practices among businesses (Eckles et al. 2014; Florio and Leoni 2017; Yilmaz and Flouris 2017). In fact, most of the studies have been conducted particularly in developed economies (Florio and Leoni 2017) while SMEs in emerging economies have received comparatively limited attention. Additionally, empirical studies on the relationship between Enterprise Risk Management and SME performance are still lacking (Farrell and Gallagher, 2015; Yang et al. 2018). Through the evaluation of research works in the world in general and in Vietnam in particular, financial risk management is always an issue that has been mentioned a lot in the scientific world in Vietnam, but the awareness of its importance is still sketchy in small and medium-sized enterprises. Recognizing the importance of financial risk management and corporate performance is a topic that is attracting attention from both theoretical and empirical perspectives of policymakers, researchers and business owners. The author found that although there are many factors affecting financial risk management that have been discovered through previous empirical studies. However, each country with its own characteristics will be affected by different influencing factors. The studies on the impact of financial risk management on the performance of the business have not shown consistent results. In addition, in Vietnam, there is currently no published study on the impact of financial risk management on the performance of small and medium-sized enterprises. The study of this thesis aims to examine the impact of financial risk management on the performance of SMEs in Vietnam and contribute to enriching empirical evidence for the treasure trove of references to researches on this topic in Vietnam.

2.3. Research gap

Through the review of studies on the relationship between financial risk management and corporate performance, the author found that there are gaps in the following research:

Firstly, Vietnam currently has no research on financial risk management and performance of small and medium-sized enterprises, although there are many studies on financial risk management of enterprises, in which the basic theoretical system of financial risk concepts, financial risk management, the relationship between financial risk management and enterprise value (Smithson and Simkins, 2005; Hoyt and Liebenberg, 2011; Trinh Thi Phan Lan, 2016). However, these studies have not studied SMEs. Therefore, the research of this thesis, which aims to examine the impact of financial risk management on the performance of SMEs in Vietnam, is a gap that needs to be studied.

Secondly, the studies of Smith and Stulz (1985), Nance et al. (1993), Fok et al. (1993), Haushater (2000), Bartram et al. (2009), Rashid Ameer (2010), Sprcic and Sevic, (2012), Nguyen Khac Quoc Bao (2014), Kouser et al (2016) argue that (1) financial risk management has an impact on size, fixed assets, financial leverage, taxes, financial shortfalls (liquidity) and age of the business. However, the results of these studies are still not consistent. This instead of determining the factors affecting the financial risk management of small and medium-sized enterprises in Vietnam is necessary and has important implications for both managers and investors; (2) research method: there are studies using probit (Trinh Thi Phan Lan, 2016), while that of Fok et al. (1993), Nguyen Khac Quoc Bao (2014), Sprcic and Sevic (2012), Kouser et al (2016) use logit. However, these studies have not been able to compare with Pseudo R^2 (Gujarati, 2011) to choose logit or probit. The R^2 measure is used to test the fit of the model of the limited dependent variable, which is Pseudo R^2 or also known as McFadden R^2 . This is a gap that previous studies have not fully exploited, especially in small and medium-sized enterprises in Vietnam.

CHAPTER 3 RESEARCH METHODS

3.1. Research hypothesis

The Research hypothesis on factors influencing financial risk management.

H₁: Financial leverage is positively correlated with financial risk management of small and medium-sized enterprises.

H₂: Size is negatively correlated with financial risk management of small and medium-sized enterprises.

H₃: Tangible assets have a positive correlation with financial risk management of small and medium-sized enterprises.

H₄: Liquidity is positively correlated with financial risk management of small and medium-sized enterprises.

H₅: Tax is positively related to financial risk management of small and medium-sized enterprises.

H₆: Age has a positive correlation with financial risk management of small and medium-sized enterprises.

The research hypothesis on the impact of financial risk management on corporate performance.

H_n: Financial risk management has a positive impact on the performance of small and medium-sized enterprises.

3.2. Research models

Model1:

$$FRM_{it} = \beta_0 + \beta_1 FL_{it} + \beta_2 SIZE_{it} + \beta_3 TANGIBLE_{it} + \beta_4 FS_{it} + \beta_5 TAX_{it} + \beta_6 AGE_{it} + \varepsilon_{it}$$

Model2:

$$ROA_{it} = \beta_0 + \beta_1 FRM_{it} + \beta_2 FL_{it} + \beta_3 SIZE_{it} + \beta_4 TANGIBLE_{it} + \beta_5 FS_{it} + \beta_6 TAX_{it} + \beta_7 AGE_{it} + \varepsilon_{it}$$

$$ROE_{it} = \beta_0 + \beta_1 FRM_{it} + \beta_2 FL_{it} + \beta_3 SIZE_{it} + \beta_4 TANGIBLE_{it} + \beta_5 FS_{it} + \beta_6 TAX_{it} + \beta_7 AGE_{it} + \varepsilon_{it}$$

In which,

The dependent variable of corporate performance is expressed through return on assets (ROA) and return on equity (ROE). With the characteristics of small and medium-sized enterprises in Vietnam, the thesis selects ROA and ROE criteria to evaluate performance in the manner of Hult et al (2008); i and t are the country and time indices; ε_{it} : error level.

The independent variable of financial risk management (FRM). Measurement of FRM by year 2008 to 2020 and by enterprise. FRM = 1 when the enterprise has implemented financial risk management: determined by implementing the financial risk management process. Conversely, FRM = 0 when the business does not perform. FL-financial leverage (Total debt/asset) in the way of Nance et al (1993), Talat Afza (2011), Hoyt and Liebenberg (2011), Sprcic and Sevic (2012), Nguyen Khac Quoc Bao (2014), SIZE (Total Assets), TANGIBLE- Ratio of tangible fixed assets and total assets (Bartram et al., 2009), FS-Cash and cash equivalents/Total assets (Kouser et al., 2016), TAX-tax is equal to 1 if the enterprise has the value of the previous period's tax loss carry forward to the end of the fiscal year, and zero if there is no loss carry forward (Allayannis and Ofek, 2001; Bartram et al., 2009; Rashid Ameer, 2010), AGE-age calculation: year of study - year of establishment +1 (Kouser et al., 2016).

3.3. Processing of collected data

Financial statement data after downloading is stored as an excel file for each year. Then convert to a general excel file. On that basis, calculating variables when all variables are calculated on excel software, then convert to Stata software format and apply some analysis techniques.

Data collected during the survey, the author calculates descriptive statistics to assess the current situation of financial risks and financial risk management for small and medium-sized enterprises in Vietnam.

For model 1, factors affecting financial risk management. The thesis implements in turn the methods such as correlation analysis to consider the relationship between variables. Correlation analysis results can initially evaluate the model's predictions. In addition, in the case of highly correlated independent variables, this is a sign of multicollinearity. Therefore, this is a basis for the author to perform VIF, t-test. In the dependent variable model is a binary variable, the thesis uses logit regression as studied by Cox (1958), Hosmer and Lemeshow (2000), Gujarati

(2011) regression analysis is used to measure the degree of influence of the independent variables on the dependent variable, thereby showing the direction of the impact of each independent variable on the dependent variable. Logistic regression for a research model in which the dependent variable is a binary variable encoded as 1 and 0. Specifically:

$$P_i = \frac{1}{1+e^{-Z_i}}$$

$$Z_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_i X_i + \varepsilon_i$$

Where P_i is the probability that the variable Y takes on the value 1; X : independent variable; β : coefficient of regression.

ε : model error

Read the model results by p - value, if p - value is less than the significance level, it means that the independent variable has statistical significance and has an impact on the dependent variable. The regression model has the form:

$$\text{Log} (P_0/(1-P_0)) = \text{Log} \{P(Y=1)/P(Y=0)\} = \beta_0 + \beta_i X_{it} + \mu_i + U_{it}$$

$$P_0 = \frac{e^{\beta_0 + \beta_i \cdot X_{it} + \mu_i + U_{it}}}{1 + e^{\beta_0 + \beta_i \cdot X_{it} + \mu_i + U_{it}}}$$

In which: β_i is the vector (1*n) including the parameters that are the corresponding coefficients of regression of the independent variables of the model. X_{it} is the vector (1*n) of the model's independent variables.

For model 2, the data processing method of information is statistically and calculated in excel software. To test the influence of financial risk management and business performance, the thesis uses panel data with estimation methods (Pooled OLS; FEM; REM; GMM) regression model, Stata software to conduct the analysis: descriptive statistics, correlation, multicollinearity between variables and F, Hausman, heteroskedasticity, autocorrelation and endogeneity tests.

The F-test selects OLS and FEM methods, based on the assumption that there is no difference between the origin coordinates in space units. This test is supported by Stata using the "xt" command group. H_0 assumes that all V_i coefficients are zero (it means, no OLS model run. Rejecting hypothesis H_0 at 5% significance level will show that the estimation of fixed effects model (FEM) is appropriate. $P_value < 0.05$, then reject hypothesis H_0 . On the contrary, it fits the OLS model.

Hausman test (Hausman, 1978) is a test to choose whether fixed effects model (FEM) or random effects model (REM) are suitable for panel data regression, based on the hypothesis H_0 that there is no correlation between the explanatory variable and the random errors ε_i because correlation is the cause of the difference between FEM and REM. Hypothesis H_0 : REM is a suitable model; H_1 : FEM is suitable.

Heteroskedasticity test to test the model's hypothesis violation; using Wald test with the hypothesis H_0 : no heteroskedasticity, H_1 : there is a phenomenon of heteroskedasticity. If the p -value of the tests is less than the threshold value of 0.05, perform the rejection of H_0 and mean that there is a phenomenon of heteroskedasticity and vice versa.

Autocorrelation test to check that autocorrelation occurs in the model, using Wooldridge test, in which the hypothesis H_0 is mentioned is that there is no phenomenon of autocorrelation, H_1 is that there is a phenomenon of autocorrelation. If the test results give p value less than 0.05, hypothesis H_0 is rejected and hypothesis H_1 accepted.

Durbin+Wu-Hausman test (James and Mark, 2019) to check whether the model's variable is endogenous variable or not through the following steps: To run model regression, to get residual (r) of the model just finished (predict r) then test (r) with the hypothesis H_0 : The variable has no endogenous phenomenon; H_1 : The variable has endogenous phenomenon. If the p -value of the test (r) is less than the statistical significance level (5%). The conclusion rejects H_0 , that is the endogenous variable.

3.4. Analytical methods

3.4.1. Descriptive statistics

Descriptive statistics are used to provide general information about the variables in the research model, the descriptive statistics include: mean, minimum, maximum, standard deviation and number of observations.

3.4.2. Correlation analysis

Correlation analysis is used to determine the degree of positive or negative correlation between the variables in the research model. Also, check that the independent variables are linearly correlated with each other. According to Belsley, Kul and Welsch (1980), VIF must be less than 10. That is, each independent variable, $VIF < 10$, does not have multicollinearity. Damodar (2004), if the correlation coefficient of the independent variable has absolute value higher than 0.8, the model may encounter multicollinearity error.

3.4.3. Regression analysis

Regression analysis is used to measure the influence of independent variables on dependent variables. This method will allow the author to provide authentic evidence to answer the research questions of the thesis. The prob/p-value coefficient of the regression analysis results indicates the degree of impact of the independent variables on each dependent variable. The commonly used statistical significance levels are 1%, 5%, and 10%. ($P > |t|$ p-value, if this value is less than 5% (0.05), the relationship between this independent variable and the dependent variable is statistically significant). In order to be more comprehensive about the impact of variables, the thesis uses regression models that will increase the reliability as well as have a basis for choosing an appropriate research model. The most commonly used estimation methods are: Logistic, GLS, Pooled Ordinary Least Squares: Pooled OLS, Fixed effects model (FEM), and Random effects model (REM) to estimate regression for the research model (Damodar N, 2004). A popular analytical method of multivariate models is Logit regression. The main objective of the logit model when building is to estimate the probability of an event occurring given the values of the independent variables. The built-in function is a probability function. One of the methods of estimating the probability function is the logit regression analysis method, also known as logistic regression, which considers the relationship between the dependent variable which is a qualitative variable and the independent variable which can be a quantitative variable or a dependent variable. The prototype model is set up as follows:

To set up $P_i = P_r(Y_i=1|X_{2i}, X_{3i}, \dots, X_{ki}) = f(X_{2i}, X_{3i}, \dots, X_{ki})$

To suppose $P_i (Y_i=1)$ be the probability that Y is equal to 1 for the i-th observation. Then, the value of P_i is in the range $0 \leq P_i (Y_i=1) \leq 1$. There are 2 conditions to keep in mind when building the probability function:

Firstly: If X_i value of the independent variables (variables on the right side of the equation) changes, the estimated probability is always between 0 and 1.

Secondly: The relationship between P_i and X_i is a nonlinear relationship, that is, when X_i is small, the probability approaches 0 at a slower rate, and when X_i is very large, the probability approaches 1 with a gradually slowing rate (Aldrich and Nelson, 1984).

If f is the density function of the logistic distribution, we get a logit model. Logistic model was established and developed by Cox (1958).

Estimation method for data processing: To perform model testing, first descriptive statistics, consider correlation coefficient and multicollinearity to describe common characteristics. Then, the independent samples t-test can show a statistically significant difference between the samples. T-test relies on t-student test to conclude and select hypothesis with hypothesis H_0 : There is no difference in mean value of variable between two groups with and without; Hypothesis H_1 : There is a difference in the mean (Bryman and Cramer, 1997). In addition, the dependent variable in model 1 is a pseudo-binary variable, representing two choices, coded with two values of 1 and 0 to determine the probability of an event occurring when the value received is equal to 1 and equal to 0. Therefore, the thesis presents the research direction of the regression model with the dependent variable being a binary variable. When the dependent variable is in binary form, the use of the linear probability model (LPM) has many limitations:

The LPM model is estimated by the Least Squares Method (OLS), so the LPM model is still due to heteroskedasticity, the significance test cannot be trusted. Random error is not normally distributed. The right hand side of the dependent variable of the regression equation can yield probabilities less than 0 or greater than 1, because the OLS estimation method does not take into account the constraint that the estimated probabilities must be in the range from 0 to 1. With such disadvantages, the linear probability model is not the choice for estimation. Therefore, to solve the disadvantages and avoid the probability value outside (0,1), the thesis uses logit, probit model to replace the estimate with the dependent variable data is binary.

CHAPTER 4 RESEARCH RESULTS

4.1. Results of factors affecting financial risk management

For regression analysis of the influence of the factors affecting the financial risk management of SMEs in Vietnam, the thesis uses a probability regression model. The results are shown in Table 4.24

Table 4.24: Factors affecting financial risk management

	FRM (Logit)	FRM (Probit)
FL	7.744*** [17.94]	4.210*** [18.46]
SIZE	-0.494*** [-3.30]	0.332*** [4.17]
TANGIBLE	5.116*** [13.17]	2.767*** [13.30]
FS	-4.612*** [-6.43]	-2.344*** [-6.47]
TAX	0.778*** [3.52]	0.452*** [3.68]
AGE	0.0324** [2.07]	0.0192** [2.25]
Number of obs	5200	5200
Pseudo R ²	0.2152909	0.21300325
Odds Ratio		
FL	2306.553	2071.344
SIZE	.6100796	.547306
TANGIBLE	166.7251	151.218831
FS	.0099347	.0142546
TAX	2.178098	2.269437
AGE	1.032924	1.035920
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$		

(Source: The author has summarized from Stata)

The logit and probit models are qualitatively similar. The logit model uses a logistic probability distribution to estimate the model's parameters. Although seemingly nonlinear, the log of the odds ratio, called logit, makes the logit model linear in model parameters which is a logistic distribution with tails slightly thinner than the variance of a random variable according to the logistic distribution is about $\pi^2/3$, with $\pi \approx 22/7$, which is about 3.14, while that of a random variable according to the normal distribution is 1. That said, the conditional probability P_i moving towards 0 and 1 at a slower rate in the probit model than in the logarithmic model. Therefore, if we multiply the

probit's coefficient by about 1.81 ($\pi \approx \sqrt{3}$) we will have an approximation to the coefficient of logit (Gujarati, 2011). To compare Logistic and Probit regression based on McFadden's R^2 value (which is the Pseudo R^2 index). The Logit model has a value of Pseudo R^2 = 0.2152909. The Probit model has a value of Pseudo R^2 = 0.21300325. In this thesis, the Logit model is chosen because the Pseudo R^2 Logit value indicates the strength of the Probit's Pseudo R^2 value. According to Gujarati (2011), many studies prefer to choose Logit model because it is relatively simpler mathematically.

The results of the regression model show that Log likelihood = -1505.6031, p-value: 0.0000 < 0.05, shows that the model is significant. Thus, the proposed binary regression model is consistent with the research data.

Table 4.25. Model accuracy prediction results

Number of observations		Prediction		Number of correct predictions	Correct prediction rate
		Enterprise status			
		Without financial risk management	With financial risk management		
Enterprise status	Without financial risk management	4,157	119	4,157	97.21 %
	With financial risk management	592	332	332	35.93 %
Overall		5.200		4489	86.32%

(Source: Author's research)

In summary, based on table 4.24 factors FL, SIZE, TANGIBLE, FS, TAX, AGE included in the research model have p-value < 0.05, showing that these independent variables have statistical significance, ie. has an impact on the dependent variable (FRM), the sign of the regression coefficients is also consistent with the expected sign (that debt ratio – the explanatory variable for the problem of debt use, the ratio of fixed assets to total assets, taxes, age has a positive effect on FRM, except that size, cash and cash equivalents to total assets have the opposite effect). Table 4.25, the forecast model has a correct prediction rate of 86.32%, of which the rate of correct prediction in case of no financial risk management is 97.21%, the rate of forecasting with financial risk management is 35.93%.

From the table of regression results, the thesis identifies a regression model that reflects the influence of factors on financial risk management of Vietnamese SMEs.

$$\text{Log}(Y=1/Y=0) = 7.744*FL - 0.494*SIZE + 5.116*TANGIBLE - 4.612*FS + 0.778*TAX + 0.0324*AGE + \mu_i + u_{it}$$

Determine P_0 according to the equation:

$$P_0 = \frac{e^{7.744*FL - 0.494*SIZE + 5.116*TANGIBLE - 4.612*FS + 0.778*TAX + 0.0324*AGE + \mu_i + u_{it}}}{1 + e^{7.744*FL - 0.494*SIZE + 5.116*TANGIBLE - 4.612*FS + 0.778*TAX + 0.0324*AGE + \mu_i + u_{it}}}$$

Thus, the research results can be seen:

When the debt ratio increases by 1%, the log odd of financial risk management also increases by 7,744 units. Therefore, the more debt SMEs use, the higher the risk of default increases, increasing financial risks. Thus, hypothesis 1 is accepted.

When the size of the enterprise increases by 1 unit, the log odd of financial risk management will decrease by 0.494 units. This means that the larger the enterprise, the more stable its competitive position is, and at the same time, it has enough financial strength to overcome difficulties. Thus, hypothesis 2 is accepted.

Regression coefficient of TAGIBLE variable = 5.116 with p-value < 5% has a positive effect that means that when the ratio of fixed assets increases by 1%, the Log Odd of financial risk management increases by 5,116 units. This shows that over-investment in assets causes an imbalance in corporate financing policy. Thus, hypothesis 3 is accepted.

The regression coefficient of variable FS = - 4.612 with p-value < 5% has the opposite effect, which means that when the cash and cash equivalents ratio increases by 1 unit, the Log Odd of the financial risk management will decrease by 4,612 units. Hypothesis 4 is accepted.

Next, the tax increases by 1%, the log odd of financial risk management also increases by 0.778 units. Hypothesis 5 is accepted. Finally, with a 1% increase in age, the log odd of financial risk management also increases by 0.0324 units. This means that the long-term operation has built an image with customers, partners and suppliers, the more opportunities to access capital at low cost, quickly seize the opportunity to get ahead of the competition. Thus, hypothesis 6 is accepted.

4.2. Research results on the impact of financial risk management on the performance of small and medium-sized enterprises in Vietnam

Table 4.31. Summary table of regression results

		ROA	ROE
GMM	FRM	0.0177*** [6.35]	0.0540** [2.27]
	FL	-0.173*** [-9.86]	0.380*** [4.29]
	SIZE	0.0769*** [8.48]	0.153*** [3.94]
	TANGIBLE	-0.0630*** [-3.52]	-0.0962* [-1.68]
	FS	0.103*** [5.32]	0.202*** [4.74]
	TAX	-0.0176** [-2.31]	0.302* [1.82]
	AGE	0.00291*** [5.94]	0.00538*** [3.20]
	Number of obs	4400	4400
	AR(1)	0.000	0.109
	AR(2)	0.688	0.682
	Sargan test	0.181	0.093
	Hansen test	0.539	0.252
***p<0.01, **p<0.05, *p<0.1			

(Source: The author has summarized from Stata)

In Table 4.31, it is the result of Hansen's test on the validity of the model and the Abond test (AR(2)-test for 2-level series correlation). The Hansen test shows that if p value is greater than 0.1, it means that the original hypothesis is rejected. Therefore, the model is valid. In addition, the AR(2) test gives a p value greater than 0.1, which means that the original hypothesis of the absence of a 2-level series correlation is rejected. Therefore, the GMM results are all significant. After fixing the defective model, the thesis considers the estimated results for the variables to test the research hypotheses mentioned in chapter 3:

Financial risk management has a positive impact on the performance of small and medium-sized enterprises. According to the results, financial risk management has a positive impact on performance and is statistically significant at 1%. Hence, through the results, it is clear that financial risk management really has an impact on increasing the efficiency of Vietnamese small and medium-sized enterprises with a significance level of 1%. This result is consistent with the hypothesis that the implementation of financial risk management improves revenue and cost efficiency by reducing risks, creating incentives to maximize corporate profits and increase enterprise value. Enterprises are able to realize the benefits of hedging through the implementation of financial risk management, in which enterprises will prioritize hedging activities for the most part of the total risks and select risk management

tools that are leveled by combining the risks faced by businesses. Therefore, enterprises implementing financial risk management lead to higher business value, which significantly improves revenue efficiency and saves costs.

Financial leverage has a negative impact on the performance of SMEs. The result of the variable FL is statistically significant at the significance level of 1%, showing that the level of impact between debt and operational efficiency of SMEs is significant but negative sign. Specifically, if FL increases by 1 unit, the operational efficiency will decrease on average from about 0.2 times with other factors unchanged. This exposes enterprises to a very high risk of insolvency. With this level of risk, it is inevitable that investors, creditors or suppliers of input materials will demand higher costs and interest rates to cover the risk they may face, making Enterprises face many disadvantages, increasing costs and thereby reducing profits.

Size has a positive impact on SME performance. According to the results, we find that the SIZE variable has a positive impact on the performance of SMEs and is statistically significant at the 1% level of significance. Specifically: If the size of the enterprise increases by 1%, the efficiency of SME operations will increase by an average of 0.08 times, provided other factors remain unchanged. This is explained because the larger the enterprises, the greater the profit, making the return on assets higher. The advantage of scale also makes the average cost per unit of product lower, making the income of enterprises larger. At the same time, large-scale enterprises will have a lot of prestige, opportunity to access low-cost inputs (raw materials, labor, capital, etc.). The actual scale in Vietnam, the proportion of SMEs that manage financial risks is small, or if any, it only revolves around simple traditional technical tools. The rate of applying financial risk management increased more for SMEs. This can be interpreted according to the trend that once a business grows in size, such as increasing sales, or expanding the market, leading to an increase in the number of employees, or developing more digital enterprises. The increase in the number of departments leads to the need for more appropriate standards for economic efficiency assessment and management tools; This is the basis for SMEs to boldly apply financial risk management tools, as well as boldly apply more complex technical tools to obtain information to support better decision making. The results discussed are also consistent with studies of Fok et al (1997), Sprcic and Sevic (2012), Nance et al (1993), Talat Afza (2011), Bartram et al (2009). The larger the scale will increase the ability of financial risk management in Vietnamese SMEs. In addition, the size can be explained under the revenue variable, another observed variable is the average total working capital which is not suitable for the study because in reality in Vietnam, regulations on working capital are still loose. Therefore, the accuracy and truthfulness of the registration declaration is not high, so this observed variable has no significance for research in practice. However, the coefficient of fixed assets is statistically significant 1% in the negative regression results. This does not support the view that a high fixed asset value is effective for enterprises, implying that small and medium-sized enterprises have not used fixed assets effectively.

Liquidity has a positive impact on operational efficiency. This shows that, if the level of financial shortfall increases by 1%, it increases the probability that the operational efficiency is increased by an average of 0.1 times, other things being held constant. Enterprises with abundant liquidity reserves will easily convert liquid assets into cash to meet the business's payable payment obligations.

For tax, the opposite effect is statistically significant, showing that for small and medium-sized enterprises paying less tax to the state budget will bring better financial performance, which is consistent with the fact that it is correlated with the tax rate. Profitable enterprises with better management efficiency will contribute more to the budget. After all, depending on each different angle, the perception of tax is different. But in general, tax is an important source of revenue of the State Budget, which is specifically regulated through the legal system. In terms of taxpayers, according to the Law on Tax Administration No. 38/2019/QH14 dated June 13, 2019, tax is considered a mandatory amount that each organization, household, business household, individual must have the obligation to

contribute to the State to concentrate financial resources in order to perform the main functions: ensuring state budget revenue, creating equality in income distribution, and stabilizing society and regulating the macroeconomics.

The age of enterprises in the sample is positively correlated with performance. According to the results, the variable AGE has a positive impact on performance and is statistically significant at the 1% level of significance. Specifically: If the age of an enterprise increases by 1%, the performance of small and medium-sized enterprises will increase by an average of 0.003 times, provided other factors are constant. This shows that in the long-term, small and medium-sized enterprises have an advantage over young enterprises and young enterprises are more vulnerable to fluctuations in the economy.

CHAPTER 5

CONCLUSIONS AND POLICY IMPLICATIONS ONLY

5.1. Conclusion

The research results of the thesis show that implementing financial risk management increases operational efficiency, which is an important fact of helping corporate administrators and policymakers have a solid basis in building financial risk management strategies for small and medium-sized enterprises. The thesis has provided the first new evidence on the impact of financial risk management on the performance of small and medium-sized enterprises in Vietnam. At the same time, this research result also helps to identify the factors of financial leverage, size, tangible assets, liquidity, tax and age that affect financial risk management in SMEs in Vietnam. This has important implications for both managers, business owners and investors. The research results of the thesis have answered the research questions as well as the research hypotheses.

The objective of the research thesis is to present new experimental evidence. The research results of the thesis agree with previous research results that the factors of financial distress cost, external funding, tax and age have an impact on financial risk management of small and medium-sized enterprises. The hypothesis explaining the financial risk management is tested through the correlation with the factors of financial distress cost, external funding, tax and age of the enterprise.

The thesis uses analysis of the difference in mean values of the research variables in the case of small and medium-sized enterprises with or without financial risk management. At the same time, to analyze research model on factors affecting financial risk management of small and medium-sized enterprises in Vietnam using t-test and Logistic regression analysis. Based on the results of logistic regression analysis, the factors of financial distress cost, external funding, tax and age of the enterprise are positively correlated with the financial risk management.

Thus, from the research results, it can be concluded that the experimental evidence based on the correlation between financial leverage, external funding, tax and enterprise age with financial risk management at Vietnamese small and medium-sized enterprises are consistent with the hypotheses H₁, H₂, H₃, H₄, H₅, and H₆ that the factors have an impact on financial risk management.

When studying the impact of financial risk management on the performance of small and medium-sized enterprises. This research direction, the thesis approaches based on the research of Hoyt and Liebenbeg (2011), Trinh Thi Phan Lan (2016) to empirically verify in Vietnamese SMEs. The financial risk management is an important role of the financial management strategy of enterprises in general and SMEs in particular. Through the review of experimental studies, the thesis has systematized the concept, classification, and factors affecting financial risk management. In addition, the thesis analyzes the current situation of financial risk management of SMEs through identification, measurement and control of financial risks.

Information and data are collected from the financial statements for the year 2008 to 2020 at Vietnamese SMEs. Based on the collected data, the thesis studies the impact of financial risk management on the performance of

SMEs through analysis of financial ratios in financial statements of Vietnamese SMEs. Research results find new evidence that financial risk management increases the performance of Vietnamese SMEs.

Research results show that debt level is negatively related to operating efficiency on assets. This implies that, when SMEs increase financial leverage, increasing the level of debt used (whether short-term debt or long-term debt) still reduces profitability on assets. The reason is that due to the unique characteristics of SMEs, there is always a need to invest in assets to meet business activities, large and prolonged debt status, while these enterprises still have to maintain their operations, leading to increasing capital needs to finance operations and purchase assets. This shows that when there is a need for funding, SMEs will increase the problem of using debt. Thereby, there is a basis for proposing policy implications to improve the performance of small and medium-sized enterprises in the coming time, in line with the development orientations of small and medium-sized enterprises in Vietnam.

5.2. Policy implications

5.2.1. For small and medium-sized enterprises in Vietnam

5.2.1.1. Realize the importance of financial risk management

In practice, financial risk management activities can affect the interests of some people in small and medium enterprises, so they may find ways not to do this activity. Therefore, raising awareness of financial risk needs to:

Organize training sessions, short-term training, seminars on risk management to help businesses fully aware of financial risk.

To implement financial risk management, SMEs need to raise awareness of financial risk. In fact, enterprises are not fully aware of risk management activities, so many business opportunities are ignored or not invested. Therefore, do not avoid risk or seek low-risk business activities. The main purpose of risk management is to prevent and control risks and help identify potential risks that may occur, thereby reducing unwanted situations encountered at work.

The effectiveness of risk management activities: The cost assessment and the correct method of effective risk management are the convincing basis for the benefits that risk management brings. At the same time, in order to improve the effectiveness of financial risk management in the operation of enterprises, it is necessary to strengthen propaganda and training to raise awareness of financial risks when communicating financial risk management with the aim of increasing financial risk. make the relevant departments and members aware and understand the goals and importance of improving the capacity and level of management for enterprises. Therefore, each enterprise when implementing strategies cannot avoid risks. Effective risk management not only helps businesses reduce financial risks in business but also maximize shareholder value, but in order to implement risk management for SMEs in Vietnam, it is beneficial to study see what factors affect the financial risk management of SMEs to increase the efficiency of the business operations. More attention is paid to implementing risk management in order to limit financial risks. Another implication, building a financial risk management apparatus is mainly to ensure the financial situation of SMEs as analyzed in section 4.3.2 (table 4.3, chapter 4), the absence of a financial risk management department. This will increase the burden on the finance-accounting department. In addition to professional duties, he also concurrently advises the Board of Directors in developing financial-planning, business processes, legal bases, and checking the application of effective measures financial risk... Therefore, having a financial risk management department or staff who are skilled in implementing the financial risk management process and establishing a documented system of FRM procedures is one of the prerequisite solutions for FRM. SMEs today. Through the advice of the FRM department, the Director or chief accountant will promptly and continuously update any risk factors that may threaten the financial safety of the enterprise, thereby proactively responding to scenarios. At the same time, the financial risk management process will help the operation of the business not to generate factors that may become financial risks in the future.

5.2.1.2. Implement financial risk management process

Implications for implementing financial risk management, small and medium-sized enterprises need to take steps according to the financial risk management process: Identify financial risks, measure and control financial risks.

The step in risk identification: Small and medium-sized enterprises need to regularly and continuously identify risks throughout the process of implementing business plans. Risk identification is not simply naming the type of risk, but it is also necessary to fully understand the financial risks that the business is facing, as it is necessary to specify when implementing the plan, the business faces the risks. The identification must take into account risks that have never occurred but may occur. A common phenomenon is that parts of the business that have suffered losses often hide the cause of the risk due to fear of affecting the personal interests of the cause, or because the management team is not brave enough to risk disclosure, it may also be because the policy does not allow the disclosure of risks or because there is no department in charge of internal information about risks. This makes it more difficult to identify and makes financial risks more serious. For identification, transparency and disclosure of information is extremely important. In order to identify quality financial risks, small and medium-sized enterprises themselves need to improve transparency from their own financial statements such as identifying signs of financial risks such as interest rate risk, calculating profit before tax and interest on total interest expense is less than one is having problems in profit; inability to pay interest on time and is identified as having interest rate risk.

Step of measuring financial risk: Small and medium-sized enterprises can flexibly apply to check the seriousness of their financial situation and make correct and timely decisions to avoid falling into bankruptcy. Risk measurement using a quantitative model from which the quantification of variables in the model is commonly applied to Vietnamese small and medium-sized enterprises for reference by using financial ratio analysis in financial statements such as: Interest coverage ratio shows how much profit per dollar of interest expense incurred during the period is covered by profit. If the profit before tax and interest is many times higher than the interest expense, the higher the ability to pay interest on the loan, and the lower the probability of financial risk; and vice versa. The standard of this ratio is greater than 1. Typically, enterprises have low interest coverage ratios, leading to increased financial risk, possibly for two reasons: (i) using a lot of debt and increasing interest costs, and (ii) low profitability of investments. This method combines financial ratios together into one model. To build an efficient multivariate model, must identify the best financial ratios capable of measuring financial risk. There are two popular analysis methods of multivariate models, which are Logit and Probit regressions.

The step to control financial risk, for example, to limit price risk that many enterprises have applied preventive measures, is to use financial derivatives. In a market economy, prices of goods and raw materials always change depending on the relationship of supply and demand, consumer psychology, and economic potential of countries. In general, these causes are difficult to predict accurately. Therefore, the risk of price fluctuations is a common type of risk affecting the financial position of enterprises. Changes in commodity prices. To limit this risk, people often use derivative financial instruments such as: Option (option contract), forward (forward contract), future (future contract), swap (swap contract). Improving the understanding and interest of enterprises in these types of contracts is a remarkable point in financial risk management.

In addition to derivatives, SMEs control financial risks with other financial instruments such as interest rate risk control, financial leverage and liquidity by:

Determination of sources of capital. Based on the balance sheet in the sources of capital section, it reflects all the sources of capital that form the assets of an enterprise, including: liabilities (short-term and long-term) and the necessary equity capital for strategic planning. financial structure. After determining the necessary capital needs for production and business, enterprises must arrange reasonable funding sources for such capital needs. There are many sources of financing for business capital needs such as: equity (common stock, preferred stock), short-term, long-term bank loans, bond issuance. All the sources of funding for the entire capital needs of the business mention to the financial structure. Thus, it can be seen that the financial structure includes capital structure and short-term debt. The capital structure includes equity and medium and long-term debt, representing a regular source of funding, which enterprises can safely use for a relatively long time without having to worry about payments. Arrangement of appropriate financial structure is important in reducing the cost of capital of the enterprise. Therefore, in financial management it is necessary to build a financial structure. In each enterprise, the source of short-term financing often changes according to the changing situation of short-term assets, therefore, in the long-term financial planning of an enterprise, managers

are only interested in capital structure. The financial structure has an impact on the profit for the owner, therefore, in the long term, it is necessary for enterprises to plan a target capital structure. Target capital structure is a harmonious combination of debt and equity in the total capital of the enterprise according to the set goals, and this structure reduces risks and increases the efficiency of using equity. Thus, capital structure policymaking involves a trade-off between profit and risk.

When determining capital, it is important to note that using a lot of debt reduces financial initiative, making capital providers hesitate to lend or invest capital in enterprises. On the other hand, much use of debt reduces liquidity, increasing financial risk. Thus, enterprises that decide to choose to finance with debt will face financial risk and if a financial risk occurs, no matter what the case is, the business will also have to bear the loss, accept the arising costs, thereby become a factor that has a negative impact on enterprise value. On the other hand, it is possible to increase the value of the business by using the appropriate financial leverage ratio. Under this approach, enterprises can first lower the cost of capital through increased use of debt because the cost of debt is lower due to tax savings. However, as the debt ratio increases, the risk also increases, so that investors demand increased profits, at some point the benefits of tax savings will not be enough to offset the increase in average cost of capital causes the benefits of using debt no longer available.

Therefore, if the capital structure of the enterprise is financed by 100% equity, on the one hand, it shows that the enterprise is active in capital sources (not dependent on external capital) and has no financial risk, but on the other hand, the enterprise also suffers from a high average cost of capital because the cost of equity is usually higher than the cost of debt. In contrast, when enterprises use debt to finance capital structure, although it can reduce the average cost of capital, it can increase the financial risk for the business by increasing the risk in debt solvency, especially in case the enterprise uses too high a debt ratio beyond a certain limit, in addition to increasing the payment risk, it also increases the average cost of capital. This makes the enterprise always has to set up the optimal capital structure to minimize financial risks and reduce the average cost of capital. In other words, if an enterprise maintains a low level of use of debt, the risk of financial distress may be negligible and the present value of the cost of financial distress is very small relative to the present value of the savings. Tax savings from loan interest should increase the value of the enterprise, as well as will continue to increase when the level of use of debt increases. However, the cost of financial distress will become higher with increasing use of debt, and until the present value of the cost of financial distress equals the present value of the tax savings, the enterprise value reaches the maximum, of which the optimal capital structure for the enterprise is determined; If the enterprise continues to increase its use of debt, the value of it will be reduced because the present value of the cost of financial distress increases more than the present value of the tax savings from interest. From a financial perspective, debt is a source of financing with a repayment term and the enterprise is responsible for paying principal and interest regardless of its business performance. These are the basic characteristics of debt and are also the fundamental contradiction that leads the enterprise to face financial risks; Therefore, analyzing the solvency of principal and the ability to guarantee interest is often interested by many subjects when enterprises use debt. Accordingly, financial ratios are often used to provide information and thereby warn about the possibility of financial risks of enterprises such as financial leverage ratio, interest coverage ratio, current ratio. Enterprises use financial leverage with the hope of increasing profits for owners. If used appropriately, an enterprise can use fixed-cost sources of capital, by issuing bonds and preferred stock, to generate returns that outweigh the costs of raising capital with a fixed yield. The rest of the profits will belong to the owners of enterprises.

If an enterprise has poor investment performance combined with an inappropriate capital structure decision, it will easily lead to a negative impact of financial leverage on profits for owners. For enterprises with high investment efficiency as combined with the decision to use financial leverage and establishing effective measures in controlling financial risks, it will help enterprises take advantage of the positive effect of financial leverage on profits for owners but still ensure safety, and ultimately achieve the goal of increasing business efficiency.

Determination of the time to invest capital, the scale of capital investment

In addition to limiting the use of debt, enterprises need to effectively use existing capital. Enterprises need to exploit capital resources, not let capital idle, waste, use capital for the right purposes and saving. To do this, enterprises need to determine

the time to invest capital, the scale of capital investment to bring the highest efficiency with low cost. A common feature of enterprises needs to be directed to the good settlement of debt collection from partner units to promptly meet the capital needs of enterprises such as paying salaries to employees, paying suppliers. Good management of receivables helps enterprises to be more proactive, to quickly rotate capital in their activities, and do not incur unplanned loans.

Determination of the repayment period of the customer

Small and medium-sized enterprises need to develop specific credit policies, clearly define capital conditions, business situation, profit situation, and debt repayment responsibilities of customers. Depending on the relationship with the customer, offer appropriate credit forms; and at the same time make financial provisions. Debt collection policies should be well implemented. Due and overdue debts need to be handled flexibly. In contrast, for bad debts, tougher measures are needed.

Therefore, in order to prevent and limit financial risks, SMEs need to build a reasonable capital structure in the direction of reducing debt ratio and promoting other capital mobilization channels. Debt structure is improved in the direction of reducing short-term credit sources, gradually increasing medium and long-term capital sources to reduce payment pressure such as mobilizing long-term capital by using finance lease-purchase credit, mobilize capital from investment funds, mobilize capital from internal sources: Firstly, a part of profit after tax can be used to supplement capital increase, self-sufficient growth investment needs. Secondly, the depreciation of fixed assets is mainly used to reproduce investment in fixed assets. However, the useful life of fixed assets is often very long, it takes many years to replace and renew; while every year the business calculates depreciation and the depreciation money is accumulated. While there is no need to replace old fixed assets, enterprises can use that depreciation to meet growth investment needs of enterprises to finance business operations.

In order to minimize interest rate risk, enterprises need to actively limit working capital by: Accelerating inventory turnover, promoting direct payment sales to reduce the number of days of a turnover of receivables, increase the number of days a turnover of payables. For long-term loans for investment and development activities, enterprises need to try to coordinate between the initial construction progress and the disbursement schedule to increase the level of loan activity because almost enterprises have loans to meet the needs of production and business activities and the loan interest is always estimated in advance, but in fact due to the influence of the economy such as inflation or loans not according to the original estimate will lead to interest rate risk.

Control of risk of commodity price fluctuations: Risks due to fluctuations in raw material prices occur for enterprises that have trading transactions under fixed price contracts for a long period of time, the risk of commodity price fluctuations would be a big risk. Normally, enterprises sign contracts before producing at a predetermined price and if there is a fluctuation that increases the price of input materials, it will make the business lose money. Therefore, enterprises need to control to overcome risks caused by fluctuations in raw material prices such as actively researching, capturing and forecasting the trend of material price fluctuations, optimizing inventory levels and continuing to improve the capacity of self-exploiting raw materials, reduce dependence on external raw materials.

To be able to control with the increasing risk of price fluctuations, to avoid losses due to lack of information or incorrect information, enterprises can hedge risks by using futures contract instruments provided by the bank or signed a fixed price contract. By using these tools, enterprises can transfer any unwanted risks they don't want to other partners, usually commercial banks. Particularly for SMEs in the domestic futures market, due to their insufficient financial potential, they often cannot follow when the price fluctuates adversely for a long time, so the benefits have been eliminated. In order for enterprises to pursue the hedging policy to the end, they also need capital support from banks to participate in the futures market. Therefore, enterprises need to change the way they perceive and learn fully and accurately the characteristics of the contract.

In addition to reflecting an enterprise's sensitivity to financial risk, the balance sheet sometimes also provides information on basic reasons why risk management is necessary. For example, the balance sheet will show whether the business has investment tax deductions or carry-on tax losses that the value can be increased through risk management tools. If pre-tax earnings are volatile due to fluctuations in interest rates or commodity prices, the enterprise can increase value by hedging.

Control of commercial credit risk: To control commercial credit risk, enterprises consider and decide to lend based on the conditions of debt classification and debt handling principles for customers.

Debt classification for customers by quantitative method: Enterprises classify debts according to the following five groups: Group 1 (qualified debt), group 2 (debts needing attention), group 3 (substandard debt), group 4 (doubtful debt), group 5 (potential loss of capital). Debt classification for customers by qualitative method applies to customers with outstanding loans of 500 million VND or more. Based on the customer rating results, the customer's debts will be classified into corresponding debt groups.

Principles of debt settlement: Enterprises to handle risks in the case of debts in group 5. Small and medium-sized enterprises can shorten the time to collect sales to improve receivables by: Firstly, to improve product quality, to create a position in the market, to develop a set of credit standards suitable to specific conditions in each stage of business operation. Secondly, to pursue a strict credit policy within a reasonable payment term. When deciding the time of credit sale, enterprises must consider factors such as: type of business, volume of purchases, balance of receivables, type of goods, time of collection of money from customers. Thirdly, to apply cash discount when customers pay before the deadline or volume discount for customers who are willing to sign long-term purchase contracts. Fourthly, factoring service can be considered as a method of combining payment, credit and insurance. When using this service, the buyer benefits from not having to pay for the goods right away, only paying when the goods and services actually meet the requirements of the sales contract signed between the two parties. The seller accepts the buyer to be paid late but still receives the money immediately, is assured of the risk due to the late payment policy in case the buyer does not pay the money, reduces the burden of not having to track and claim receivables. Domestic and international factoring can be considered as a tool provided by commercial banks to help enterprises effectively prevent financial risks due to deferred payment policies.

5.2.1.3. Perfect financial risk management

For market risk: Interest rate risk, in order to limit risks as well as get profit, it is advisable to apply short-term investment corresponding to the appropriate capital. With this form of investment, businesses can choose to deposit with a safe and convenient term when the company needs to use capital urgently and still make a profit. In order to minimize interest rate risk, enterprises need to actively limit working capital by: Accelerating inventory turnover, promoting direct payment sales to reduce the number of days a turnover of accounts receivable. receivables, increasing the number of days a turnover of payables. For long-term loans for development investment activities, enterprises need to try to coordinate the initial construction progress and disbursement progress to increase the level of loan activity because almost all All businesses have loans to meet the needs of production and business activities and loan interest is always estimated in advance, but in fact due to the influence of the economy such as inflation or loans not according to the original estimate will lead to to interest rate risk.

Raw material price risk: To be able to control with the increasing risk of price fluctuations, to avoid losses due to lack of information or incorrect information, businesses can hedge risks by using The futures instrument provided by the bank or signing a fixed price contract is one of the solutions to help control the risk of material price fluctuations. Accordingly, when signing a contract, enterprises need to fix the price for a relatively long time and have appropriate adjustment terms. By using these tools, businesses can transfer any unwanted risk they don't want to other partners, usually commercial banks. Particularly for SMEs in the domestic futures market, due to their insufficient financial potential, they often cannot follow when the price fluctuates adversely for a long time, so the benefits have been eliminated. In order for businesses to pursue the hedging policy to the end, they also need capital support from banks to participate in the futures market. Normally, businesses sign contracts before producing at a predetermined price and if there is a fluctuation that increases the price of input materials, it will make the business lose money. Therefore, enterprises need to control to overcome risks caused by fluctuations in raw material prices such as actively researching, capturing and forecasting the trend of material price fluctuations, optimizing inventory levels and continuing to improve the capacity of self-exploiting raw materials, reduce dependence on external raw materials. Therefore, businesses need to change the way they perceive and learn fully and accurately the characteristics of the contract.

In addition to reflecting a company's sensitivity to financial risk, the balance sheet sometimes provides information on the rationale behind risk management. For example, the balance sheet will show whether the business has investment tax deductions or carry-on tax losses whose value can be increased through risk management tools. If pre-tax earnings are volatile due to fluctuations in interest rates or commodity prices, the firm can increase value by hedging.

For trade credit risk: The increase in receivables is affected by credit policy, so this issue should be considered. Implications for analyzing customer credit, determining balance, monitoring receivables to offer a timely credit policy (discount early payment as a tool for customers to actively pay) early and businesses will reduce costs due to debt collection).

For liquidity risk: When a business does not have enough cash to pay at maturity, it can be handled by using one or a combination of short-term borrowing options, selling assets or liquidating inventory.

For financial leverage: Risk occurs when enterprises use capital from debt too much and use it inefficiently, leading to inability to pay debts and loans. The development always requires businesses to have a stable source of capital, so they must seek capital with loans from individuals, banks or buy goods on credit.

5.2.2. Implications from the research results on the influence of factors on the performance of SMEs in Vietnam

- For control variables such as financial leverage (FL), taxes and fixed assets have a negative impact on financial performance and are statistically significant. The implication is that other things being equal, an increase in FL will decrease performance. The research results also do not support the view that high value of fixed assets (tangible) is effective; implies that SMEs have not effectively used fixed assets and if SMEs increase the intangible coefficient, their efficiency will decrease. This is because:

SMEs, when investing in expanding by increasing assets such as houses, equipment and machinery, need to consider carefully because if not consider when using external funding; not only will not increase financial efficiency, but also have the effect of reducing efficiency because enterprises face pressure to repay debt while financial resources are limited. Therefore, in order to increase efficiency, SMEs need to limit the use of debt to finance activities. Instead, SMEs can use other forms of capital mobilization such as financial leasing, which is very suitable in terms of insufficient capital, lack of creditworthiness in loan contracts to buy assets, relieve pressure on collateral compared to other forms of bank credit. The granting of credit in the form of financial leasing does not require the security of pre-existing assets, enabling businesses to access new forms of credit, while helping businesses avoid risks caused by changes. of technology and engineering. This financial leasing activity helps to acquire assets for business activities without having to spend a large amount of capital, thereby helping enterprises to reserve credit sources in the future without having to spend a large amount of capital. can also actively build a reasonable payment and repayment plan for the lessor. Besides, in addition to limiting the use of debt, businesses need to effectively use existing capital. Enterprises need to exploit capital resources, not let capital idle, waste, use capital for the right purpose and save. To do this, businesses need to determine the time to invest capital, the scale of capital investment to bring the highest efficiency with low cost.

A common feature of businesses needs to be directed to a good settlement of debt collection from partner units to promptly meet capital needs such as paying employees, paying suppliers. Good management of receivables helps businesses to be more proactive, quickly rotate capital in their activities, and do not incur unplanned loans. Small and medium enterprises need to develop specific credit policies, clearly defining capital conditions, business situation, profit situation, and debt repayment responsibilities of customers. Depending on the relationship with the customer, offer appropriate credit forms; and at the same time make financial provisions. Debt collection policies should be well implemented, with respect to due and overdue debts. This implies that, when SMEs increase financial leverage, increasing the level of debt used (whether short-term debt or long-term debt) still reduces profitability on assets. The reason is due to the unique characteristics of SMEs, there is always a need to invest in assets to meet business activities, large and prolonged

debt status, while these enterprises still have to maintain their operations, leading to increasing capital needs to finance operations and purchase assets.

For businesses with tax losses, the more financial risk management is implemented because when implemented, it helps to reduce expected tax and increase after-tax income. Therefore, increase the efficiency of business operations. The implication if the tax increase in the case of income would be low would be smaller than the tax reduction in the case where the income would be high, hence the expected tax reduction. According to the theory, risk management can lead to a reduction in the amount of tax payable when the enterprise is subject to a convex tax function i.e. a progressive tax system or subject to possible tax deductions or offsets. losses in future accounting periods. This is because hedging creates stability with higher performance and consequently reduces the amount of tax payable.

- For variables of size (size), liquidity and age (age) have a positive impact on performance, with statistical significance. The implication is that SMEs with a good operating scale often have an advantage in controlling operations in the context of economic difficulties, so the expansion does not mean an increase in risks leading to efficiency. reduced fruit. This implies that as SMEs in Vietnam become larger, they are more likely to achieve economies of scale due to their ability to reinvest in machinery and equipment as well as develop new product lines. than. Regression results in the direction that the larger the scale, the more successful the financial risk management is. Besides having more advantages in increasing efficiency, large enterprises will often have a lower probability of bankruptcy, thereby reducing the cost of financial distress, contributing to increased operational efficiency. However, the growth in scale here can be the growth through finding domestic partners to merge with partners with similar cultures, supporting industries and avoiding What is more dangerous is being taken over by the partner itself. It is the association that will make SMEs have a new stature, meet the financial and resource requirements when doing business with foreign partners or facilitate access to loans from banks and through surveys. conducted in this thesis once again affirms that if Vietnamese small and medium enterprises have a large scale, the probability of success is higher when implementing financial risk management.

The number of years of establishment has a strong and statistically significant impact on the performance of small and medium enterprises in the sample. When the number of years of establishment increases by 1 year, it will increase by 0.003%. From that, it can be seen that the number of years of establishment has a positive and statistically significant impact on the business performance of Vietnamese SMEs. In addition, the long-term operation of SMEs has built an image with customers and investors from which they can access low-cost capital sources, business cooperation opportunities, skilled labor, stable consumption market, seize opportunities, make good use of resources to improve efficiency, policy implications to improve the efficiency of SME operations in the coming time, in line with the development direction of small and medium enterprises in Vietnam.

Liquidity: The external funding arguments from the study show that when choosing to grow in investment opportunities, firms need to do more to manage financial risks; However, when businesses face a shortfall in cash flow, businesses will tend to increase their cash holdings by selling assets, cutting dividends or seeking outside sources of capital to finance their business. finance investment opportunities by borrowing or issuing equity. However, the use of capital from outside has a higher cost of capital because it includes transaction costs. Due to the disadvantage of higher transaction costs, SMEs will tend to hold more cash and cash equivalents. The implication is also that because of financial constraints, SMEs should increase reserves in current assets to finance future investment opportunities with internal funds. Therefore, investing in excess liquidity can be viewed as a cost-effective and reasonable way to reduce the business's dependence on costly external financing costs.

The purpose of liquidity risk management is to ensure sufficient capital to meet current and future financial obligations. The liquidity of the management company is to ensure that the premium between liabilities and assets due during the year is controlled at a level that is controlled by the amount of capital that the company thinks can generate in that year.

5.2.3. Policy implications for State agency

Solve the lack of capital for businesses. While businesses lack capital, banks and even the Development Assistance Fund could not disburse due to the strict regulations of the State, making it difficult for businesses to borrow capital or to have a loan. loan guarantee requirements. SMEs often lack and face difficulties in terms of production space, most of these businesses are not prioritized in terms of production space, often have to use their own houses and rent from the private sector with high land rental prices, still remain the distinction between large enterprises in the state-owned economic sector is often favored in terms of location and area. Therefore, there should be more open regulations to have equality in loan policy.

Completing the system of legal documents to create a clear, transparent and favorable legal environment for small and medium enterprises. Completing the legal system in a synchronous manner in accordance with the legal system and international practices, in order to form a favorable business environment and limit financial risks.

Review, supplement and amend relevant legal documents in a timely manner, but avoid the tendency to change too quickly the legal system and economic policies, causing concern for small and medium-sized enterprises. Kip promulgated regulations related to recognition and valuation of financial instruments in 2009. The Ministry of Finance issued Circular No. 210 guiding the presentation of financial statements on financial risk statements. is an evidence of the role of international accounting standards in the integration process as well as the requirements of international accounting standards for the change in governance according to international standards.

To soon deploy financial support and improve the operation of the Credit Guarantee Fund to facilitate SMEs to access financial resources. It is necessary to diversify financial sources for SMEs in connection with the development of "Soft Infrastructure" which are business development services to complement each other in the process of supporting SMEs to access resources. Having appropriate policies to reduce lending interest rates to a reasonable level, reducing lending costs. Tax incentives for businesses in general and small and medium enterprises in particular. In addition, the state needs to increase training support for SMEs, provide and facilitate them to access information sources, expand the system of consulting services and have reasonable policies on issues related to SMEs. topics such as tax policy, customs procedures, bank credit... Local governments, associations, clubs, organize visits to learn from good business models, typical model for other business owners, potential small traders.

5.3. Limitations and directions for further research

Although the research has been tried to complete, but because of the limited time and knowledge of the doctoral student, it is inevitable that there will be shortcomings in the implementation process, which leads to the limitations of the thesis.

Small and medium-sized enterprises that are not yet listed are limited in terms of data. Because of limited data, the financial statements of small and medium-sized enterprises in Vietnam are collected from the General Statistics Office. Research on financial risk management has not considered the impact of different industries on the performance of small and medium-sized enterprises in Vietnam. That will be the direction of further research on this topic in the future.

The study is limited to 400 small and medium-sized enterprises from 2008 to 2020. Thus, the thesis does not cover all Vietnamese small and medium-sized enterprises. Therefore, with the next research direction, adjust the research sample size.

Firstly, to adjust the sample size in terms of time, future studies should be carried out over a longer period of time to ensure high reliability with the research results.

Secondly, to adjust the sample size in terms of space, future studies when studying the impact of financial risk management on the performance of many small and medium-sized enterprises in Vietnam, including small enterprises is necessary for future extensive studies.