Determinants of financial risk of firms listed on the national stock market: Dynamic panel evidence from Vietnam

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ABSTRACT

Financial risk is a subject that receives the attention of researchers, business managers, and policymakers because of its impact on the existence and development of businesses. The study was conducted to provide empirical evidence on the factors affecting the financial risk of enterprises in the context of emerging and developing economies. The quantitative method based on the S-GMM model was used for regression analysis to overcome endogenous problems in the multivariate regression model with financial variables, with a sample of 509 listed non-financial enterprises, with 3,054 observations in the 2007–2018 period in Vietnam. The results show that profitability, current solvency, financial structure, cost management, and firm size influence financial risk for listed enterprises in the sample. Financial leverage and firm size were found to have a positive influence on financial risk, and the other factors negatively affect financial risk. The study also examines the influence of several factors related to business performance and growth in relation to risk. Based on these findings, some policy implications are proposed on corporate governance related to the use of financial leverage and cost management so that enterprises can develop sustainably and avoid financial risk.

Contribution/Originality: This study is the first to use the composite scale Z"-score to measure the financial risk in place of single financial scales conducted in nascent financial markets, such as Vietnam. These findings suggest that firms should restructure their capital and monitor costs more effectively to avoid the risk of financial distress.

1. INTRODUCTION

In operations, businesses face many different types of risk, potentially causing losses before unforeseen events. Financial risk is especially of interest because it is directly related to the financial position, performance, and bankruptcy of enterprises. Therefore, identifying and managing financial risk has become crucial in helping businesses achieve sustainable development (Colak, 2021; Daniela, Mária, & Lucia, 2016).

When considering the factors affecting financial risk, financial structure decisions have always been central, as the debates around this issue suggest that when a firm uses high levels of debt and exceeds a certain limit, the business faces potential risk (Porteous & Tapadar, 2005). In addition, the factors of solvency, profitability, and operating ability

are also examined by most related studies on the extent of the influence on the financial risk of enterprises (Binti, Zeni, & Ameer, 2010; Yang & Bian, 2019).

Although studies on financial risk have been carried out by many researchers around the world and received the attention of scholars and policymakers, in the context of a developing economy such as Vietnam, research on this topic is still scarce. Therefore, this study was conducted to supplement empirical evidence on the factors affecting the financial risk of enterprises listed on the Vietnamese stock market. This is an important basis to help corporate financial managers offer solutions to minimize financial risk, thereby improving competitiveness as well as the ability to respond to exogenous shocks from the market. This article approaches financial risk based on the Z-score used in the study by Altman (1968) and uses the S-GMM model in the regression analysis based on the risk of endogenous problems in data analysis and processing.

The paper is structured as follows: Section 2 focuses on the research overview and theoretical background; Section 3 contains the research model and analysis methodology; Section 4 presents the research results and discussion; Section 5 draws conclusions and offers some policy implications; and Section 6 discusses the limitations and future research orientation.

2. LITERATURE REVIEW AND HYPOTHESES

2.1. Literature Review

Financial risk is a topic that has received a lot of attention and debate from researchers and policymakers. However, views and ways of determining financial risk have not yet reached a consensus.

According to the approach based on influential factors, financial risk originates from the financial situation of the enterprise and/or the adverse fluctuations of macro factors, such as interest rates, exchange rates and prices of goods, that have a combined local effect on operating results, cash flow balance, solvency, and firm value (Mugozhi, 2016; Dandago & Baba, 2014; Bhunia & Mukhuti, 2012 and Simantinee & Kumar, 2015).

Based on financial management, scientists believe that the source of financial risk comes from capital financing activities (Bhunia & Mukhuti, 2012), or the method of corporate financing (Li, Liu, Wang, & Shen, 2012). In agreement with this view, Alshubiri (2015) and Gayan and Koperunthevy (2016) believe that financial risks are those other than business risks caused by enterprises using financial leverage.

Using both of the above approaches, studies have tried to clarify the single role of factors affecting financial risk without using a synthetic scale to test. Meanwhile, the study by Altman (1968) developed the Z-score to assess the level of bankruptcy risk of an enterprise. This is an indicator that is measured based on the internal financial indicators of the business. The Z-score estimates the bankruptcy risk of enterprises quite accurately, so it is not only used in the US but also widely used in many countries around the world. Up to now, quite a few scientists, including Mugozhi (2016) and Dandago and Baba (2014), have applied the Z-score to measure the risk of bankruptcy in enterprises. The question of whether this coefficient is a useful parameter in explaining the level of financial risk in firms is the motivation for this study.

The static trade-off theory and the pecking order theory are two basic theories that help to explain the relationship between the level of debt used and the financial risk of a firm. Financial risk is explained based on the theoretical framework of the static trade-off theory by Jensen and Meckling (1976), arguing that the capital structure of a firm is established based on the benefit trade-off between the tax shield and the cost of financial distress. Specifically, when businesses get a large benefit from the tax shield, the larger the debt, the higher the cost of financial distress. This is the cost incurred due to the enterprise's high debt, so the enterprise may face difficulty in fulfilling its financial commitments on time. In other words, the higher the leverage, the greater the enterprise's risk. Other studies on this issue also agree on the effect of financial distress costs on firm value and capital structure (Altman, 1968), so business owners must weigh the benefits against the borrowing costs of establishing a financing structure with an appropriate debt ratio.

Based on the pecking order theory, Reid (2003) argued that businesses meet their financial needs in order of priority, specifically, the priority is the funding available in the business through retained earnings, followed by liabilities and equity, because the use of internal capital will help businesses avoid indirect costs and, at the same time, reduce financial risk. Agreeing with the pecking order theory, research by Flannery and Rangan (2006) suggests that financial decisions, regardless of the priority order, are still based on the financial risk of the business.

In addition to the approaches derived from the above fundamental theories, researchers have also provided views, ways of determining, and factors affecting financial risk. Financial risk is influenced by both objective and subjective factors. The objective factors posing potential risks to businesses are those that depend on the fluctuations in the markets, such as interest rates, exchange rates, and commodity prices. Subjective factors, on the other hand, originate from the financial status of the enterprise, thus affecting the results of the enterprise's financial performance (Colak, 2021; Daniela et al., 2016).

In a narrower aspect, the source of financial risk is derived from the financing activities of enterprises (Dandago & Baba, 2014). Agreeing with this view, Alshubiri (2015) concluded that financial risks are risks other than business risks caused by enterprises using financial leverage.

However, when determining the level of financial risk, the available studies have not reached a consensus. Bathory (1984) proposed a way to determine financial risk (FR) based on a multivariate linear regression model using five components—profit before tax, depreciation, and deferred income tax/current debt (SZL); profit before tax/working capital (SY); shareholders' interests/short-term debt (GL); net tangible assets/current liabilities (YF); and working capital/total assets (YZ)—represented by the following model:

$$FR_{it} = SZL_{it} + SY_{it} + GL_{it} + YF_{it} + YZ_{it} \qquad (1)$$

Equation 1 calculates the level of financial risk of an enterprise, the smaller the FR_{it}, the higher the financial risk and the weaker the financial strength of the enterprise. This ratio is widely applied in many fields and types of businesses, helping to reflect the financial resources of an enterprise to pay its due debts. Therefore, FR_{it} is a powerful and popular tool and is used by many scientists as a measure of the financial health of businesses, especially in emerging markets where the credit rating system is underdeveloped and lacking transparency in information (Bhunia & Mukhuti, 2012; Dang, Phan, Nguyen, & Hoang, 2020). However, so far, Altman's bankruptcy risk prediction coefficient is still considered an effective tool in risk analysis as well as used as a factor used by commercial banks as a basis for raking business credit ratings. These Z-scores, depending on the particular case, is calculated as shown in the equations below:

$$Z = 1.2X_1 + 1.4X_2 + 3.3X_3 + 0.64X_4 + 0.999X_5 \qquad (2)$$
$$Z' = 0.717X_1 + 0.847X_2 + 3.107X_3 + 0.42X_4 + 0.998X_5 \qquad (3)$$
$$Z'' = 6.56X_1 + 3.26X_2 + 6.72X_3 + 1.05X_4 \qquad (4)$$

Equations 2, 3, and 4 calculate the coefficients Z, Z', and Z" for manufacturing firms, private firms, and firms in an emerging economy, respectively, in which the parameters X1, X2, X3, X4, and X5 are respectively determined by working capital/total assets (X1); retained profit/total assets (X2); earnings before interest and taxes (EBIT)/total assets (X3); market value of shares/total assets (X4); and sales/total assets (X5). The Z-score is a composite index that measures the financial distress and solvency of enterprises. In other words, it is an indicator that helps businesses by giving early warnings about financial difficulties. Therefore, some scientists use the Z-score as a scale to measure the financial risk of non-financial enterprises, similar to the studies by Colak (2021); El Khoury and Al Beaïno (2014) and Bhunia and Mukhuti (2012), in which the Z-score is inversely proportional to financial risk.

Among the Z-scores proposed by Altman, the Z"-score presented in Equation 4 is considered appropriate for the research data in countries with emerging economies, such as Vietnam. This view is also supported in the studies by Kulali (2016), Daniela et al. (2016), Binti et al. (2010) and Ninh, Do Thanh, and Hong (2018), performed in Istanbul, Sri Lanka, Malaysia, and Vietnam, respectively.

Equation 4 also shows that if the Z"-score > 2.6, enterprises are in the safe zone and there are no signs of financial risk. Z-scores ranging from 1.1 to 2.6 are in the area of suspicion with warning signs, and if the Z"-score is below 1.1, the enterprise is forecasted to be at risk of financial distress and bankruptcy. Therefore, the higher the Z"-score, the lower the financial risk, and vice versa.

2.2. Research Hypotheses

Financial structure considers the important factors affecting the financial risk of an enterprise, in which capital structure is the ability and extent of the use of debt to finance assets, which businesses can access in the course of business operations (Mohanad & Ali, 2020). Therefore, the debt ratio indicator is commonly used in financial structure scales. M&M theory (Modigliani & Miller, 1958), static trade-off theory (Wu & Wang, 2005), pecking order theory (Reid, 2003), and empirical studies by Liu, Fan, Xie, and Wang (2022); Yang and Bian (2019) and Syahida and Ameer (2010) have shown a positive relationship between debt use and financial risk. These studies show that when businesses use internal capital, they will bring high profits and fewer risks. Conversely, as firms increase their debt levels, financial risks increase.

H1: Financial structure (through debt ratio) has a positive effect on financial risk.

Solvency is considered to be a clear indicator of the financial capacity of an enterprise. Specifically, when an enterprise has a good financial position and high solvency, it will be more likely to meet due debts, and therefore, retain low financial risk. In Altman's model (Altman, 1968), solvency has a negative effect on financial risk. The results obtained by Yang and Bian (2019); Syahida and Ameer (2010); Fu, Fu, and Liu (2012); Simantinee and Kumar (2015) and Wang and Wang (2022) also agree with Altman's results on the relationship between solvency and financial risk. To measure solvency, some scientists used the current solvency indicator (e.g., Khasawneh & Dasouqi, 2017).

H2: The current solvency ratio has a negative effect on financial risk.

Profitability reflects the ability to generate profit from input resources. When a business is highly profitable, with fixed input resources, the increased profit allows the business to improve its ability to pay due debts and thus reduce its financial risk. The model used by Altman (1968), as well as the experimental research results of scientists (Fu et al., 2012; Simantinee & Kumar, 2015; Syahida & Ameer, 2010; Wang & Wang, 2022; Yang & Bian, 2019), have shown that profitability has a negative effect on financial risk. To measure the profitability of a business, researchers have used return on assets (ROA), as it is not only the most suitable measure of the profitability of the entire enterprise, but it can also show the profitability of the owners as well as the creditors of the business.

H3: Profitability has a negative effect on financial risk.

Operational capacity reflects the operational capacity of asset items, which is clearly shown through indicators such as inventory turnover (*IT*), accounts receivable turnover (*ART*), or total asset turnover (*TAT*). As the turnover rates of these items increase, there is an increased opportunity to pay due debts and retain low financial risk. The model of Altman (1968), as well as the research results of Yang and Bian (2019); Syahida and Ameer (2010) and Fu et al. (2012), have shown a negative relationship between the ability to operate with financial risk. In addition to the above criteria, some scientists have also used the cost management (*CM*) indicator to measure the operating ability of a business. When an enterprise has good cost management capabilities and controls costs well, it will help to generate more profit. From there, it is possible to increase resources to pay off due debts, and financial risks will be reduced (Dang et al., 2020).

H4: Operational capacity has a negative effect on financial risk.

In addition to the above factors, this study also examines the control factors in the model, including the age, the size, and the growth rate of the listed enterprises.

3. RESEARCH MODEL AND METHODOLOGY

3.1 Research Model

Based on the background research by Altman (1968) and empirical studies by Yang and Bian (2019); Fu et al. (2012) and Wang and Wang (2022), we built a research model of the factors affecting financial risk as follows:

$$FR_{it} = \beta_1 FR_{it-1} + \beta_2 FS_{it} + \beta_3 CS_{it} + \beta_4 PRO_{it} + \beta_5 CM_{it} + \beta_6 IT_{it} + \beta_7 ART_{it} + \beta_8 TAT_{it} + \beta_9 Size_{it} + \beta_{10} Age_{it} + \beta_{11} GRO_{it} + \epsilon_{it} \ (5)$$

Equation 5 represents a regression model of factors affecting the financial risk of enterprises based on the proposed hypotheses, wherein $FRit$ is the dependent variable, and financial structure (*FS*), current solvency (*CS*), profitability (*PRO*), cost management (*CM*), inventory turnover (*IT*); accounts receivables turnover (*ART*) and total asset turnover (*TAT*) are the independent variables. Firm size, listing age, and economic growth are the control variables in the model. The scale of the variables is presented in Table 1.

Table 1. The measurement of the variables in the research model.

Variables	Measuring scale	Abbr.	Method of measurement	Source	Hypothesis
Dependent variable					
Financial risk	Z"-score	FR_{it}	$6,56X_1 + 3,26X_2 + 6,72X_3 + 1,05X_4$		
Independent variables					
Financial structure	Coefficient of debt	FS	Total debts/total assets	Liu et al. (2022); Yang and Bian (2019) and Syahida and Ameer (2010)	-
Solvency	Current solvency	CS	Short-term assets/short-term debts	Yang and Bian (2019); Syahida and Ameer (2010); Fu et al. (2012); Simantinee and Kumar (2015) and Wang and Wang (2022)	+
Profitability	Profitability of total assets	PRO	Profit after tax/total assets	Yang and Bian (2019); Syahida and Ameer (2010); Fu et al. (2012); Simantinee and Kumar (2015) and Wang and Wang (2022)	+
Operational capacity	Cost management	CM	Profit after tax/net revenue	Yang and Bian (2019); Syahida and Ameer (2010) and Fu et al. (2012)	+
	Inventory turnover	IT	Cost of goods sold/average inventory	Yang and Bian (2019); Syahida and Ameer (2010) and Fu et al. (2012)	
	Accounts receivables turnover	ART	Net sales/average receivables	Yang and Bian (2019); Syahida and Ameer (2010) and Fu et al. (2012)	
	Total asset turnover	TAT	Net sales/average total assets	Yang and Bian (2019); Syahida and Ameer (2010) and Fu et al. (2012)	

Control variables					
Firm size	Total assets	Size	$Log\,(Total\ assets)$	Hewa Wellalage and Locke (2012)	+
Listing age	Listing age	Age	Year of study - Founding year	Hewa Wellalage and Locke (2012)	+
Growth	Revenue growth rate	GRO	$[Revenue_{(t)} - Revenue_{(t-1)}]/revenue_{(t-1)}$	Hewa Wellalage and Locke (2012)	+

3.2. Research Methodology and Data

In the process of reviewing the documents, we found that there is an endogenous problem in the research model of factors affecting the financial risk of enterprises. The research is based on the signal theory of Spence (2002), the pecking order theory of Myers (1984), and the experimental research results of Salim and Yadav (2012) and Margaritis and Psillaki (2010), who both show a significant correlation between the debt ratio and profitability of an enterprise.

The data used in the study is panel data of 509 enterprises with 3,054 observations. These are non-financial enterprises listed on the Vietnam Stock Exchange during the 2013–2018 period. Enterprises that fit the sampling criteria were grouped by business lines according to the ICB level 1 standard and distributed to eight industry groups—Information Technology; Industry; Petroleum; Consumer Services; Pharmaceutical and Healthcare; Consumer Goods; Community Services, and Facilities.

To perform a quantitative analysis of the factors affecting financial risk, the study uses the GMM method to overcome the endogeneity problem mentioned in panel data with inter-calculated financial ratios (Murphy, Trailer, & Hill, 1996). Given the limited time and sample size, the study uses the S-GMM method to perform a regression analysis, and the results are reported after fully testing the regression assumptions.

4. RESULTS AND DISCUSSION

4.1. Descriptive Statistics

Table 2 presents the minimum, maximum and mean values of the variables. The results show that in the sample, the average Z"-score of listed companies is 4.289, which is higher than the predicted value of the marginal safety of the Z-score coefficient (2.6). However, this coefficient has a large variation between enterprises when comparing the maximum and minimum values.

The average level of debt used by enterprises is approximately 50%, in which the largest debt level of enterprises is as high as 97%. Vietnamese enterprises have average profitability ratios and receivables turnover of less than 7% and 11 rounds, respectively.

4.2. Regression analysis results of factors affecting financial risk of enterprises

The study uses the S-GMM method to test the influence of factors on financial risk to overcome endogenous problems in the multivariate regression model with financial variables. The results show that the Sargan test coefficient has Prob > chi2 0.030 < 0.05, which means that the model still has an endogenous phenomenon (Sargan, 1958). The test results also show that the Hansen test index is Prob > chi2 0.47 > 0.05, which means that the model has no endogenous phenomenon (Hansen, 1982).

Table 2. Descriptive statistics of the variables in the research model.

Variable	Min.	Max.	Mean	Std. dev.
FR	-7.230	74.488	4.289	5.352
FS	0.015	0.971	0.492	0.216
CS	0.143	35.872	2.218	2.485
PRO	-0.543	0.716	0.063	0.071
CM	-0.867	0.707	0.073	0.115
IT	0.002	2741.094	22.619	105.37
ART	0.017	341.884	11.287	23.152
TAT	0.003	19.8364	1.323	1.332
Size	23.440	33.297	27.249	1.543
Age	0	21	7.217	3.723
GRO	-0.993	44.514	0.181	1.188

Note: FR = financial risk; FS = financial structure; CS = current solvency; PRO = profitability; CM = cost management; IT = inventory turnover; ART = accounts receivable turnover; TAT = total asset turnover; GRO = growth.

The Arellano–Bond test produced an AR(1) index of $0.031 < 0.05$, which means that the model has a first-order correlation phenomenon. The AR(2) index is $0.560 > 0.05$, which means that the model has no presence. Similar to autocorrelation, the identification of endogenous variables in the research model is appropriate (Arellano & Bond, 1991).

In the multicollinearity test results, the variance inflation factor (VIF) < 3, and the correlation coefficients are all < 0.8, which means that the variables in the model do not have multicollinearity.

Thus, the regression results are reliable because the defects of the model have been overcome. The estimated results are presented in Table 3.

Table 3. Factors affecting financial risk.

Variable	β coefficient	Standard deviation
FR_{t-1}	0.169***	0.015
FS	-14.382***	0.390
CS	0.504***	0.023
PRO	10.344***	0.792
CM	1.101**	0.336
IT	0.000	0.000
ART	-0.001	0.000
TAT	-0.340*	0.005
Size	0.167***	0.051
Age	-0.023**	0.001
GRO	-0.019***	0.004
Constant	6.511***	1.305
No. of observations	3,054	
No. of groups	509	
AR(1) test (Prob > chi2)	0.031	
AR(2) test (Prob > chi2)	0.560	
Hansen test (Prob > chi2)	0.47	

Note: ***, ** and * signify 1%, 5%, 10% levels of significance, respectively.

Based on the regression results of the S-GMM model, a summary of the determinants of the financial risk of companies listed on the Vietnamese stock market is presented in Table 4 below.

Table 4. Summary of research results.

Variable	Hypothesis	Result	Conclusion
FS	-	-	Accepted
CS	+	+	Accepted
PRO	+	+	Accepted
CM	+	+	Accepted
IT	+	K	Null
ART	+	K	Null
TAT	+	-	Reject
Size	-	+	Accepted
Age	+	-	Accepted
GRO	+	-	Accepted

The regression results of the model show that IT and ART have a negligible influence on financial risk, and TAT has no statistical significance. The remaining variables all influence financial risk at the 5% statistical significance level. Since financial risk is measured by the Z"-score, the higher the value of this scale, the lower the financial risk. When the Z''-score > 2.6, the enterprise is determined to have no financial risk. Therefore, the results of the above regression model show that financial structure and firm size have a negative effect on the Z"-score, thereby increasing financial risk, and the remaining factors positively affect the Z"-score, thereby limiting the financial risk of the enterprise, or negatively affecting the financial risk.

- On average across the sample, *ceteris paribus*, a 1% increase in debt usage reduces Z" by 14%. This is the factor that has the greatest influence on the Z-score, increasing the financial risk for the business. This result is also supported by several related studies (Liu et al., 2022; Syahida & Ameer, 2010; Yang & Bian, 2019). The direction of influence of financial structure factors is explained in the framework of the capital structure theory when it is said that increasing financial leverage leads to the risk of financial distress.

- Solvency (CS) and profitability (PRO) have a positive effect on the Z''-score. On average, in the sample, a firm's solvency and profitability increase by 1%, which will improve the Z"-score by 0.5% and 10%, respectively, ceteris paribus. These factors have a positive relationship with the Z"-score, and therefore have a negative effect on financial risk. The negative effect between solvency and financial risk is also supported by Yang and Bian (2019); Syahida and Ameer (2010); Fu et al. (2012); Simantinee and Kumar (2015) and Wang and Wang (2022). The results showing the negative effect of profitability on the financial risk of the enterprise are also consistent with the research conducted by Yang and Bian (2019); Syahida and Ameer (2010); Fu et al. (2012); Simantinee and Kumar (2015) and Wang and Wang (2022). Thus, when the enterprise has high profitability with fixed input resources, the increased profit gives the enterprise the opportunity to improve its ability to pay its due debts, and financial risks will be reduced.

- When considering the influence of the operability factor, cost management (CM) has a positive effect on the Z''-score, thus negatively affecting financial risk with an impact coefficient of 1,1007. This result shows that when businesses have a good cost management capacity, 100 units of revenue will generate profit, which will help businesses increase resources to meet financial obligations, and financial risk will be reduced. Notably, total asset turnover (TAT) has a negative effect on FR or a positive relationship to financial risk. This result is inconsistent with the expected research hypothesis. The reason may be that the listed companies in the sample have a relatively high proportion of long-term assets of their total assets (average = 36.72%). While long-term assets are considered illiquid assets, the ability to convert them into cash to meet maturing liabilities is low, which increases financial risk. Inventory turnover (IT) and accounts receivable turnover (ART) are not statistically significant in determining the relationship with financial risk.

5. CONCLUSIONS AND POLICY IMPLICATION

Financial risk receives a lot of attention from researchers, business managers, and policymakers regarding the sustainable development of the business sector. In the context of countries with emerging and developing economies, such as Vietnam, although the business sector plays an important role and has made positive changes in the past, in the context of a relatively new economy with a nascent financial market, businesses have not managed to follow good corporate governance practices. In the current period, many businesses have closed, gone bankrupt, or have suspended operations. Many listed companies have been stopped from trading or have been acquired, merged, or scaled down. These businesses seem to be more vulnerable to fluctuations in the market's exogenous shocks such as the Covid-19 pandemic, fluctuations from macro adverse events, as well as the government's credit-tightening policy. Therefore, the identification of factors affecting financial risk and the extent of their influence helps enterprises to implement governance plans and strategies to develop more sustainably and avoid financial risk.

The results of the regression analysis in this study accept most of the hypotheses. These findings confirm the important role of financial structure factors through the level of debt used, solvency, the ability to manage assets to generate profitability, as well as the management of costs in the financial risk of listed companies. The profitability of assets was found to have the greatest influence on financial risk. Enterprises will limit risks if they effectively use investment assets and complete projects with a positive net present value (NPV). In addition, the use of high levels of debt among listed companies is also a high financial risk if other factors remain unchanged. During the difficult period of raising equity capital in the recent period, the source of funding for business activities of Vietnamese enterprises depended heavily on loans and bonds issued.

In conclusion, these findings imply that businesses should consider amending their capital structure and avoid excessive dependence on debt. Raising capital through issuing shares on the stock market instead of raising capital through issuing bonds or borrowing from commercial banks is also a solution when the stock market shows positive signs. In addition, to limit financial risks, listed companies also need to focus on improving profitability, improving solvency, improving cost management capacity, and completing tasks such as debt recovery from other entities and releasing inventory to increase receivables and inventory turnover.

6. LIMITATION AND FUTURE RESEARCH

This study uses a composite scale to measure financial risk and provide empirical evidence on the influence of financial structure, cost management capacity, and asset management ability, which are important factors affecting the financial risk of enterprises in emerging economies. Using the S-GMM model to overcome the risk of endogenous problems for financial data also helps the regression results to avoid violations of assumptions, helping the results of the regression reports to meet the requirements of the assumptions. Based on these findings, some policy implications for managers in corporate governance in developing and emerging economies, such as Vietnam, are also proposed.

However, we also acknowledge some limitations. Firstly, the use of composite parameters measured by the Z"-score helped confirm the role of some important factors affecting the financial risk of enterprises in the context of emerging and developing economies. Although the study controlled for several factors in the model, such as age, firm size, and growth ability in addition to other financial parameters, the study still only focused on factors related to the characteristics of enterprises. Meanwhile, the risks faced by enterprises not only come from weak internal management activities related to financial management, resource management, and strategic management but also from adverse fluctuations in macro factors, the current state of the economy, and changes in government policies, such as the government's credit-tightening policy. Therefore, factors such as inflation, interest rates, GDP, or the impact of the Covid pandemic also need to be controlled in the model to help interpret the research model more comprehensively.

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Second, risk is industry-specific, and the business sector can also be a proxy for risk. Profitability on assets and profitability in general are also different for enterprises in different industry groups. This study has not assessed industry-specific risk differences.

These issues are also suggestions for future research to help comprehensively identify more corporate risks as well as factors affecting corporate risks in the context of countries with emerging and developing economies.

REFERENCES

Alshubiri, F. (2015). Measurement the impact of financial and business risk on performance: Evidence of industrial sector of Oman. *Asian Social Science, 11*(22), 26-32. https://doi.org/10.5539/ass.v11n22p26

Altman, E. (1968). Financial ratios, discriminant analysis and the prediction of business failure. *Journal of Finance, 23*(4), 589-609. https://doi.org/10.1111/j.1540-6261.1968.tb00843.x

Arellano, M., & Bond, S. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies, 58*(2), 277-297. https://doi.org/10.2307/2297968

Bathory, A. (1984). *Predicting corporate collapse: Credit analysis in the determination and forecasting of insolvent companies*. London: Financial Times Business Information.

Bhunia, A., & Mukhuti, S. (2012). Financial risk measurement of small and medium-sized companies listed in Bombay stock exchange. *International Journal of Advances in Management and Economics, 1*(3), 27-34. https://doi.org/10.31270/ijame/01/03/2012/04

Binti, S., Zeni, M., & Ameer, R. (2010). Turnaround prediction of distressed companies: Evidence from Malaysia. *Journal of Financial Reporting and Accounting, 8*(2), 143-159. https://doi.org/10.1108/19852511011088398

Colak, M. S. (2021). A new multivariate approach for assessing corporate financial risk using balance sheets. *Borsa Istanbul Review, 21*(3), 239-255. https://doi.org/10.1016/j.bir.2020.10.007

Dandago, K. I., & Baba, B. U. (2014). The use of multi-discriminant analysis for the prediction of corporate bankruptcy in Malaysian textile industry. *Journal of Business and Economics, 5*(6), 813-822.

Dang, H. T., Phan, D. T., Nguyen, H. T., & Hoang, L. H. T. (2020). Determinants of share prices of listed companies operating in the steel industry: An empirical case from Vietnam. *The Journal of Asian Finance, Economics and Business, 7*(12), 131-138. https://dx.doi.org/10.13106/jafeb.2020.vol7.no12.131

Daniela, R., Mária, B., & Lucia, J. (2016). Analysis of the construction industry in the Slovak Republic by bankruptcy model. *Procedia-Social and Behavioral Sciences, 230*, 298-306. https://doi.org/10.1016/j.sbspro.2016.09.038

El Khoury, R., & Al Beaïno, R. (2014). Classifying manufacturing firms in Lebanon: An application of Altman's model. *Procedia-Social and Behavioral Sciences, 109*, 11-18.

Flannery, M. J., & Rangan, K. P. (2006). Partial adjustment toward target capital structures. *Journal of Financial Economics, 79*(3), 469-506. https://doi.org/10.1016/j.jfineco.2005.03.004

Fu, F., Fu, W., & Liu, D. (2012). Empirical study on financial risk factors: Capital structure, operation ability, profitability, and solvency ——evidence from listed companies in China. *Journal of Business Management and Economics.*, *3*(5), 173-178.

Gayan, A., & Koperunthevy, K. (2016). Financial risk, financial risk management practices and performance of Sri Lankan SMEs: Special reference to Anuradhapura District. *Research Journal of Finance and Accounting*, *7*(15), 16-22.

Hansen, L. (1982). Large sample properties of generalized method of moments estimators. *Econometrica*, *50*(4), 1029-1054. https://doi.org/10.2307/1912775

Hewa Wellalage, N., & Locke, S. (2012). Factors affecting the probability of SME bankruptcy: A case study on New Zealand unlisted firms. *Business Journal for Entrepreneurs (Quarterly) June.*

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305–360. https://doi.org/10.1016/0304-405x(76)90026-x

Khasawneh, A. Y., & Dasouqi, Q. A. (2017). Sales nationality and debt financing impact on firm's performance and risk: Evidence from Jordanian companies. *EuroMed Journal of Business*, *12*(1), 103-126. https://doi.org/10.1108/emjb-05-2016-0015

Kulali, Y. (2016). Application of Altman Z-score model in estimating financial failure risk of BIST companies/altman z-score bankruptcy prediction model application to bist firms. *International Journal of Management Economics & Business*, *12*(27), 283-291.

Li, Z., Liu, K., Wang, K., & Shen, X. (2012). *Research on financial risk management for electric power enterprises*. Paper presented at the The 2nd International Conference on Complexity Science & Information Engineering, Systems Engineering Procedia 4, 54–60.

Liu, L., Fan, Y., Xie, Q., & Wang, C. (2022). Market-based versus bank-based financial structure in China: From the perspective of financial risk. *Structural Change and Economic Dynamics*, *62*(C), 24–39.

Margaritis, D., & Psillaki, M. (2010). Capital structure, equity ownership and firm performance. *Journal of Banking & Finance*, *34*(3), 621-632. https://doi.org/10.1016/j.jbankfin.2009.08.023

Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, *48*(3), 261-297.

Mohanad, H. Y., & Ali, H. (2020). Impact of financial structure on the financial stability: An empirical study in a sample of Iraqi companies. *International Journal of Psychosocial Rehabilitation*, *24*(1), 1997-2017.

Mugozhi, F. (2016). An assessment of the application and the corporate failure predictive value of altman's Z score model in Zimbabwe. *Journal on Business Review*, *4*(4), 64-74.

Murphy, G. B., Trailer, J. W., & Hill, R. C. (1996). Measuring research performance in entrepreneurship. *Journal of Business Research*, *36*(1), 15-23. https://doi.org/10.1016/0148-2963(95)00159-x

Myers, S., C. (1984). The capital structure puzzle. *The Journal of Finance*, *39*(3), 574-592. https://doi.org/10.1111/j.1540-6261.1984.tb03646.x

Ninh, B. P. V., Do Thanh, T., & Hong, D. V. (2018). Financial distress and bankruptcy prediction: An appropriate model for listed firms in Vietnam. *Economic Systems*, *42*(4), 616-624. https://doi.org/10.1016/j.ecosys.2018.05.002

Porteous, B., & Tapadar, P. (2005). *Economic capital and financial risk management for financial services firms and conglomerates*. London: Springer.

Reid, G. C. (2003). Trajectories of small business financial structure. *Small Business Economics*, *20*(4), 273-285.

Salim, M., & Yadav, R. (2012). Capital structure and firm performance: Evidence from Malaysian listed companies. *Procedia-Social and Behavioral Sciences*, *65*, 156-166. https://doi.org/10.1016/j.sbspro.2012.11.105

Sargan, J. D. (1958). The estimation of economic relationships using instrumental variables. *Econometrica*, *26*(3), 393–415.

Simantinee, S., & Kumar, T. V. V. (2015). Factors influencing financial risk-a case study of NSE NIFTY companies. *International Journal in Management & Social Science*, *3*(8), 132-137.

Spence, M. (2002). Signaling in retrospect and the informational structure of markets. *American Economic Review*, *92*(3), 434-459. https://doi.org/10.1257/00028280260136200

Syahida, B. M. Z., & Ameer, R. (2010). Turnaround prediction of distressed companies: Evidence from Malaysia. *Journal of Financial Reporting and Accounting, 8*(2), 143-159.

Wang, J., & Wang, Y. (2022). Analysis on influencing factors of financial risk in China media industry based on entropy critic method and XGBoost. *Academic Journal of Business & Management, 4*(2), 102-106.

Wu, X., & Wang, Z. (2005). Equity financing in a Myers–Majluf framework with private benefits of control. *Journal of Corporate Finance, 11*(5), 915-945. https://doi.org/10.1016/j.jcorpfin.2004.04.001

Yang, F., & Bian, Y. (2019). Analysis of financial status and determinants with altman's Z-score model: A panel data investigation from traditional chinese medicine listed companies in China. *Value in Health, 22*(3), S772. https://doi.org/10.1016/j.jval.2019.09.1960