

THE INTERNATIONAL JOURNAL OF BUSINESS & MANAGEMENT

The Impacts of Capital Structure on the Profitability of Small and Medium Enterprises in Thai Nguyen Province, Vietnam

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Abstract:

The paper uses data from the financial statements of 205 small and medium enterprises from 2010 to 2016 in order to analysis the impacts of the capital structure on the profitability of small and medium enterprises in Thai Nguyen province by using different methods such as OLS, FEM and REM. A firm's capital structure is calculated by dividing debt by equity. The profitability is measured by the ratio of the after-tax return on total assets (ROA). The results show that there is a proportional relationship between the capital structure and profitability of firms. Based on the results of the study, the author suggest some recommendations to improve the capital structure, thereby enhancing the efficiency of business operation of SMEs in Thai Nguyen province in the future

Keywords: Capital structure, small and medium enterprises, profitability, ROA

1. Introduction

In Thai Nguyen province, Small and Medium Enterprises (SMEs) account for more than 90% of the total number of enterprises. There has been rapid growth in terms of quantity and quality since 2008. In 2008, the province had only 1,120 SMEs which have so far increased to 2,122 SMEs. Production value increased significantly (18,266.2 billion VND in 2008 and reached 68,214.4 billion VND in 2016). However, the contribution of SMEs is still limited, which is not commensurate with the potential for economic development in Thai Nguyen. Although Thai Nguyen's SMEs have tried to build and develop, they still face many difficulties and challenges. There are many inadequacies in financial management, especially the existence of unreasonable capital structure that causes inefficiencies in business operations and potential risks in business operations of SMEs. In order to improve the business efficiency of enterprises in the future, it is necessary to build a safe capital structure. Starting from the desire to find solutions to increase the profitability of SMEs, the study on the impacts of capital structure on the profitability of SMEs in Thai Nguyen is the basis for the author to make recommendations for SME financial management.

2. Overview

There are various studies relating to the impacts of capital structure on the profitability of firms that have been published as follows: Studies of Friend and Lang (1988), Titman and Wesses (1988), Kester (1986) show that the debt ratio is inversely proportional to profitability.

Abor (2005) used data from financial statements of 20 listed companies in Ghana, found a positive relationship between short-term debt and operational efficiency (measured by ROE), Long-term debt and operational efficiency. Total debt is positively related to operational efficiency (ROE). The increase in the size of debt is related to the increase in profitability, so higher debt is more profitable.

Mehdi Janbaz (2010), researched using data from 70 listed companies in the Iranian stock market in the period from 2006 to 2007, found that capital structure and profitability measured by ROA had negative correlation.

Ahmad, Abdulla and Roslan (2012) examined the impact of capital structure on business performance by analyzing the relationship between business performance measured by ROA, ROE with short-term debt, long-term debt and total debt. A sample was taken of 58 industrial enterprises on the Malaysian stock market for the period from 2005 to 2010. Research

results indicate that long-term debt and total debt had negative impacts and statistically significant with ROA, short-term debt, long-term debt and total debt with negative impacts and have a statistically significant effect on performance measured by ROE.

San and Heng (2012) studied the relationship between capital structure and business performance before and after the 2008 global financial crisis, using data from 49 companies and dividing into 3 levels: small, medium and large being listed on the Malaysian stock market in the period 2005-2008. Research results showed the existence of positive relationship between long-term debt and performance (ROE, EPS) in large and medium enterprises, total debt has negative relationship with EPS in large and small enterprises.

In Vietnam there are a number of studies on this issue: Tran Duc Thang (2014) studied the effect of capital structure on the profitability and solvency of 50 food manufacturing enterprises listed on the Vietnam Stock Exchange in the period 2010-2013. The results of regression model analysis showed that the capital structure of enterprises has a strong negative correlation with the profitability and solvency of enterprises in the sample.

Doan Ngoc Phuc (2014), utilized data from 217 enterprises listed on Ho Chi Minh Stock Exchange and Hanoi Stock Exchange from 2007 to 2012 with a view to study the impact of capital structure on the performance of the business after the shareholding. The results showed that long-term debt has influence on ROA and ROE in the same direction, while short-term debt and total debt have the opposite effect on business performance after equalization.

3. Research Hypothesis

Based on the relevant research findings, the hypothesis on the impact of capital structure on the profitability of SMEs in Thai Nguyen province is described as follows:

Hypothesis: The capital structure has the opposite impact on profitability of SMEs in Thai Nguyen province.

4. Methodology

Date source: the study conducted with 205 observational samples of small and medium enterprises in Thai Nguyen province in the period of 2010 and 2016 with a total of 1,435 observations.

Research models and variables: The paper used panel data to balance regression with four methods: OLS, Fixed effects, Random effect and FEM with strong standard deviations in group. To determine which regimen is the most suitable among the four methods, the study uses the Housman test (Gujarati, 2003).

Based on previous empirical studies, the multivariable regression model is used to study the impact of capital structure on the profitability of SMEs in Thai Nguyen province.

$$ROA_{it} = \beta_0 + \beta_1 TDR_{it} + \beta_2 Sire_{it} + \beta_3 Growth_{it} + \epsilon_{it}$$

Where:

- Dependent variable: Profitability of SMEs is measured by ROA it.

- Independent variable:

TDR it: Total debt, measured by total debt divided by equity.

- Control variable:

Sire it: Business size, measured by total assets.

Grow it: The growth rate of total assets, measured by the annual growth rate of total assets.

eit: The error of the model

i is the i-th business; t is the t-th year.

5. Research Result

The regression results using OLS, FEM, REM and FEM with strong standard deviation in group for 1435 observations are presented in Table 1.

Regression Method Independent Variable	OLS	FEM	REM	FEM with Strong Standard Error in Group
Intercept	10.841***	-10.507***	-10.739***	-10.507***
TDR	0.012***	0.015**	0.014***	0.015**
Size	0.054***	0.089***	0.061***	0.089***
Growth	0.092***	0.073***	0.088***	0.073***
Coefficient of deflection correction ($\overline{R^2}$)	0.60	0.65	0,64	0,65
Validation value	F=715.32	F = 769.46	Wald =2162,94	F=23.60

Table 1: Results of Measuring the Impact of Capital Structure on the Profitability of SMEs in Thai Nguyen Province by Different Estimation Methods

Legend: *, **, ***: Equivalent To A Smaller Significance Level 10%, 5%, 1%

Using Stata software, the results of capital structure estimation according to OLS, FEM, REM, FEM methods with robust standard errors group. The different methods estimate the results of each model also different. Based on this result, it is difficult to choose the model that in accordance with the purpose of the article. Thus, some tests related to the selection and use the research models are used as follows:

5.1. Test to Select Model

The OLS model occurs heteroscedasticity phenomenon, because of $p\text{-value}=0,0000 < 0,05$. So the OLS model will be replaced by the FEM or REM mode. By Hausman's test method, the value of $\text{Prob} > \chi^2 = 0.0000 < 0.05$ should be chosen for the FEM model.

5.2. Test the Detection of FEM Model (Heteroscedasticity)

Proceeding the Breusch – Pagan's test the heteroscedasticity in the fixed effects model (FEM) obtained the value $\text{Prob} > \chi^2 = 0.0000$, FEM model occurs heteroscedasticity phenomenon. Although the model exists the heteroscedasticity can still give a reliable estimation but the standard errors of the coefficients are no longer the smallest, making statistics statistically less significant. To overcome this phenomenon, the author uses a regression method with robust standard errors group to analyze the impact of capital structure of small and medium enterprises in Thai Nguyen province. (Shown in Table1)

According to the regression results in Table 1, up to 65% change in profitability of small and medium enterprises in Thai Nguyen province because of factors in the decision model. Statistics $F = 23.6$, $p < \alpha = 0.01$ reject the hypothesis that all coefficients of estimation in the regression model are 0. Therefore, the results of the regression model are considered to be relatively appropriate, 3 variables in the model are statistically significant. The regression result shows that the enterprise's capital structure (measured by debt / equity) is positive and has statistically significant at the 5% significance level. The findings of the research are in accordance with the results of Abor's research (2005).

The results from Table 1 show that the scale and growth of enterprises are related in the same direction and have statistically significant with profitability measured by ROA. The regression coefficient of the scale, the growth of the enterprises is significant at 1%.

6. Conclusions and Recommendations

6.1. Conclusion

The results of the analysis show the level of the impact of capital structure on the profitability of small and medium enterprises in Thai Nguyen province in the period 2010-2016. Compared with similar research, this research examined the impact of capital structure on the profitability associated with micro, small and medium enterprises. Specifically, a number of key issues have been identified and analyzed:

Firstly, the article found that the OLS, FEM, REM models occurs heteroscedasticity phenomenon and proposes to use a regression with robust standard errors group to overcome the limitations that can reduce the statistical significance.

Second, when analyzing the impact of capital structure on the profitability of small and medium enterprises in Thai Nguyen province, the research found that the factors included: Capital structure, scale, growth of small and medium enterprises are statistically significant and relate in the same direction with the ROA's enterprises.

Thirdly, this research is important for policy makers for small and medium enterprises in Thai Nguyen province. Currently, small and medium enterprises face to face many difficulties in accessing loans of commercial banks, as well as other forms of government funding. The same direction relationship between the debt and the profitability of the business shows that the Government, the State Bank should give specific and appropriate rations on interest rates, credit limits,..., the purpose is not only to make the banking system activate safely and effectively, but also to enable small and medium enterprises to access bank loans to expand their production and increase profits.

The capital structure is related in the same direction with the profitability of the enterprises, showing that small and medium enterprises can increase the use of debt to increase the scale of capital for business activity, overcome the current lack of capital of enterprises. Based on the research results, it shows the tendency of the impact of the capital structure on the ROA of the enterprises, helps enterprises to make decisions on selecting funding sources with reasonable capital cost and in accordance with the business objectives of the enterprise.

6.2. Recommendations

The research results show that small and medium enterprises in Thai Nguyen province need strategies in mobilizing capital and using reasonable capital to have high profitability.

Small and medium enterprises need to increase the debt ratio in their capital. To do this, enterprises can increase the use of capital from commercial credit, bank credit. They should constantly increase labor productivity, save costs to increase profits. Enterprises should actively negotiate with suppliers to be able to purchase goods and services in credit in order to reduce bank loans at high interest rates, and to seek new funding sources with lower cost and high stability such as bond issuance.

In addition, small and medium enterprises need to raise awareness of managers about the effect of capital structure to the profitability. It is needed to increase training activities to enhance the knowledge of financial managers. Enterprises should regularly check the use of capital to ensure the efficiency of capital and reduce the risk in the business these enterprises.

7. References

- i. Abor, j., 2005. Journal of Risk Finance, Emeral Group Publishing, 6(5), pp. 438-445.
- ii. Ahmad, Abdulla and Roslan, 2012. Capital Structure Effect on Firms Performance: Focusing on Consumers and Industrial Sectors on Malaixia Firms.
- iii. Doan Ngoc Phuc, 2014. Effect of Capital Structure on Business Performance of Post-Equitization Firms in Vietnam. Journal of World Economics and Politics, 7 (219) 2014, pp. 72-80.
- iv. Kester, 1986. Capital and Ownership Structure: A Comparison of United States and Japanese Manufacturing Corporations. Financial Management, Vol.15, pp.5-16.
- v. Mehdi, Janbaz, 2010. Capital structure decisions in Iranian Corporate Sector. International Research Journal of Finance & Economics, Issues 58, pp.24.
- vi. San, O.T., and Heng, 2012. Capital Structure and Corporate Performance of Malaysian Construction Sector, Centre for Promoting Ideas, USA, Retrieved 18th February, 2014 from <http://www.ijhssnet.com>.
- vii. Titman, S. and R. WesslIs, 1988. The Determinants of Capital Structure Choice. Journal of Finance 43, March 1988, pp.1-19.
- viii. Tran Duc Thang, 2014. Impact of capital structure on profitability and solvency of research firms in food manufacturing enterprises. Proceedings of the National Scientific Seminar "Exploiting capital for economic development of Vietnam in the present period", pp. 799-810.