*Essay*

Capital Structure of Small and Medium-Sized Enterprises: Empirical Evidence from Vietnam

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# **Abstract**

Capital structure has been studied broadly in developed countries but little in developing ones. This study examines the capital structure of Small and Medium-sized Enterprises (SMEs) in Vietnam, and the influence of some determinants including tangibility, profitability, ownership, firm size and firm growth. The result suggests that debt ratio of Vietnamese SMEs is high and ownership does affect the firm’s leverage (or debt/equity ratio) where state-owned SMEs are more highly leveraged than private SMEs. In terms of factors influencing capital structure, profitability and tangibility have negative relationships with the debt ratio of SMEs in Vietnam; firm size has little effect and firm growth appears not to influence significantly the debt ratio of the SMEs.

**Keywords:** capital structure, SMEs, Vietnam.

# **Introduction**

Theories which focus on the capital structure of large firms in developed countries and a few studies examining the capital structure, either in developing countries or among small firms, have shown some evidence that capital structure of Small and Medium-Sized Enterprises (SMEs) in developing countries is affected by the same factors as identified for firms in developed economies. However, each country has specific financial factors and SMEs in developing countries have some characteristics which differ from firms in developed ones. Therefore, it is necessary to examine what factors influence capital structure in the small business sector in developing countries.

Vietnam is a developing country which has been in the process of changing to a market-oriented economy since 1986 and has made some great achievements with a considerable contribution from SMEs. Recognizing the importance of SMEs in the transitional economy, the Vietnamese Government has promulgated many policies to support this business sector. However, SMEs still face difficulties in obtaining capital for future development due to some restrictions of the Vietnamese financial system, which is only at the early stage of development. It is characterized as a bank-based system where the greatest role is played by four state-owned commercial banks (SOCBs), providing up to 80 per cent of total loans in the economy. This fragile system makes it difficult for SMEs, especially private ones, to access capital resources.

Tran and Ramachandran (2006) study features of the capital structure of Vietnamese SMEs over the period 1998 – 2001, and examine the influence of specific determinants on SMEs’ capital structure, such as growth, tangibility, business risk, profitability, size, ownership, relationship with banks, and networking on three measures of capital structure. Based on their results and conclusions, this study attempts to go further to see how Vietnamese SMEs’ capital structure has changed over the years 2009 – 2011, using data from the financial statements of 45 companies audited by the Auditing and Accounting Financial Consultancy Service Company (AASC) in Vietnam.

Different theories relating to capital structure (pecking order theory, agency cost theory, and trade-off theory) are reviewed to develop testable hypotheses on determinants of the capital structure of SMEs in Vietnam. Based on the data analysis, evidence is found out to confirm those hypotheses. Even though the sample size is small, the result gives a brief view of Vietnamese SMEs’ capital structure and the effects of factors influencing the firms’ choice. As the evidence is from such a small developing country as Vietnam, it might be useful to compare and see the similarity to and the difference with results from previous studies carried out in Western developed countries. The paper also suggests and explains some solutions to improve Vietnamese SMEs’ current capital structure.

# **Theoretical Framework on Capital Structure**

Brian Coyle, in his book *Capital Structuring*, states that a corporation may support its assets from three primary sources of finance which is its capital structure:

1. A cash surplus from operating activities
2. New equity funding
3. Borrowing from bank and non-bank sources

Capital structure is extremely important because it can influence not only the return a company earns for its shareholders, but also the survival of the company. In this following study, capital structure refers only to the way a corporate finances its assets through a combination of equity and debt. The relative proportion of debt to equity (D/E ratio) in the company’s capital structure is defined as the firm’s leverage level. When identifying the determinants of Vietnamese SMEs’ capital structure, debt ratio is used as a proxy for the firms’ capital structure.

## *Overview of Theories on Capital Structure*

The basic thinking on capital structure was proposed by Modigliani and Miller (1958). However, it is generally considered to be purely theoretical because it relies on many unrealistic conditions. The Modigliani-Miller theorem (M&M model) states that capital structure does not affect the firm’s value if the following conditions are satisfied: 1- The capital market is perfect for borrowing and lending; 2- There are neither taxes nor transaction or bankruptcy costs; 3- Information between investors and the firm is symmetric; 4- Investment decisions are not affected by financing decisions. Since those conditions do not apply in the real world, where capital structure is indeed relevant, a number of theories on capital structure have been developed that relax assumptions made in the M&M model.

Trade-off theory (Kraus and Litzenberge, 1973) captures the bankruptcy cost and taxes to point out the advantages and disadvantages of financing with debt. The benefits of debt (namely, the Tax Shield) are accompanied by the costs of debt (financial distress – like bankruptcy), so we have a trade-off with respect to the level of debt – a higher debt level makes a bigger tax shield, but implies a greater risk of financial stress.

Pecking order theory, which was developed by Myers and Majluf (1984), relaxes the condition of symmetric information. It states that companies get financed under the law of least effort – internal financing is used first, then debt is issued, and equity is the last resort. According to this theory, internal funding is preferred over external financing; and when external financing is required, debt is favored over equity. The issue of equity would signal the board’s lack of confidence and that they feel the firm is overvalued; as a result, a new equity issuance may lead to a drop in share price.

Jensen and Meckling (1976) present the agency costs theory which helps explain the relevance of capital structure based on the conflicts of interest between the outside shareholders and the management, and between the debt holders and the equity holders. Accordingly, when an agent has outside shareholders, the management tends to engage in a moral hazard problem in which the management will have a tendency to take risks because it is the shareholders who bear the costs if things go badly. For example, the management may have an incentive to use the firm’s resources for empire building and perks, which give them private benefits that are unobservable to the shareholders and, as a result, destroy the firm’s value. The bigger the outside equity is, the more serious the problem is. Therefore, increasing the firm’s leverage would impose financial discipline on the management. However, debt also has costs, which are the Risk-shifting problem and the Debt-overhang problem (Myers, 1977). As the D/E ratio increases, management may reject safe, profitable projects and undertake risky (even low-valued) ones to shift the risk to debt holders because debt claims are prior to equity claims. The higher the level of debt is, the more serious these problems are.

# **Benefits and Costs of Equity Capital and Debt Capital**

From the above theories, it is inferred that equity capital and debt capital have their own benefits and drawbacks. It is the management’s responsibility to attempt to find the optimal capital structure with respect to risk and reward pay-off for shareholders. Let’s describe each in detail:

*- Equity capital:* is considered to be less favored, but is mostly reaped by the small enterprises because equity financing offers the following benefits: 1- Normally, shares are issued when the stock price is high; the market’s imperfection makes the share price of bad or small firms overpriced and the firms get benefits from that overpricing; 2- Paying dividends is not compulsory, hence the firm can skip equity dividends without suffering any legal consequences; 3- Equity capital has no maturity date, so the firm has no obligation to redeem. However, equity capital bears costs. If the management displays moral hazard behavior, the welfare of investors and the firm’s value will be affected. Besides, although the company may avoid the immediate repayment burden, it is only a short-term option. Should it require additional funding, dividend payments will have to be redeemed; otherwise it could have difficulty raising new equity capital. Furthermore, equity is much more expensive than debt capital, i.e. the rate of return required is higher to compensate the investors’ taking risky investments, and equity dividends are paid out of profit after tax. Finally, selling shares to outsiders dilutes the control of existing owners.

*- Debt capital:* is often a fairly low-cost source of financing which has many advantages. First, debt does not dilute the owner's ownership interest in the company. Second, a lender is entitled only to repayment of the agreed principal of the loan plus interest, and has no claim on the firm’s future profits. Third, principal and interest obligations are usually known amounts which can be forecast and planned for. Fourth, interest on the debt can be deducted on the company's tax return. Fifth, raising debt capital is less complicated. Debt capital has disadvantages, as well. For example, debt must be repaid and interest requires a budget for payment and raises the company's break-even point. In addition, debt puts restrictions on the company's activities, preventing management from pursuing alternative financing options and business opportunities. Moreover, as the problem of creditworthiness implies, a company with larger debt-equity ratio may be considered to be more risky by lenders and investors.

The comparative costs of equity and debt capital do influence the management’s financing decision. A company may choose a higher leverage or more equity, but under any circumstances, either an all-equity or an all-debt finance is an unsatisfactory capital structure.

# **Factors Influencing Capital Structure**

There are a number of factors that may affect a firm’s decision on capital structure. Gleason et al.(2000) examine data in 14 European countries to show that legal environment, tax environment, economic system, and technological capabilities influence the capital structure. Furthermore, Korajczyk and Levy (2003) state that not only macroeconomic conditions but firm-specific characteristics have effects on firm’s financing decisions as well. Tangibility, profitability, firm size, and the level of growth opportunities are identified as important determinants of capital structure in both developed countries (Rajan and Zingales, 1995), and developing countries (Booth et al., 2001). Antoniou et al. (2002) imply that a firm’s capital structure is also affected by its surrounding environment such as deterioration or improvement in the state of the economy, the existence of a stock market and/or the size of the banking sector.

# **Testable Hypotheses on Determinants of Capital Structure of Vietnamese SMEs**

In this section, the theories of capital structure will be applied to the small business sector in the context of the current Vietnamese financial system to develop several hypotheses examining the capital structure of Vietnamese SMEs. As mentioned above, capital structure is affected by many factors; however, this paper only discusses the five factors outlined below.

*Firm growth*

Empirical evidence from the works of Smith and Watts (1992) and of Titman and Wessels (1988) supports a negative relationship between leverage and firms’ growth opportunities. However, Myers (1977) suggests that a firm’s growth might be positively related to its capital structure if long-term debt is replaced by short-term debt. In the context of Vietnamese small business sector, this proposition seems to be more relevant because most SMEs in Vietnam operate by small and infrequent transactions and often look for short-term bank loans. The first hypothesis is that a firm’s growth relates positively to its debt ratio.

*Tangibility*

Tangible assets may provide collateral for debts. Therefore, companies with high level of tangible assets are expected to take on more debt. While most empirical studies in developed countries find a positive relationship between tangibility and financial leverage (Titman and Wessels, 1988; Rajan and Zingales, 1995), research in developing countries gives ambiguous results. For example, Wiwattanakantang (1999) reports that tangibility relates positively to leverage in Thailand, but Booth et al. (2001) find that tangibility in ten developing countries is negatively related to leverage. It is a matter of dispute whether this relation depends on the type of debt. Bevan and Danbolt (2002) examine data in the UK and find that tangibility relates positively to long-term debt, but negatively to short-term debt. In the case of Vietnamese SMEs which often involve short-term debts, the second hypothesis is that tangibility relates negatively to debt ratio.

*Profitability*

The pecking order theory suggests that debt is less prior than retained earnings. This implies a negative relationship between profitability and leverage. Research in developed countries by Titman and Wessels (1988), Rajan and Zingales (1995), and Antoniou et al. (2002); and in developing countries by Booth et al. (2001), Wiwattanakantang (1999), and Chen (2004), find a negative relationship between leverage ratios and profitability. In the context of Vietnamese SMEs, using retained earnings to finance operations is even more popular because the firms’ managers are usually the owners who do not like to lose control over their firms. Hence, the third hypothesis is that profitability relates negatively to debt ratio.

*Firm size*

The study of Marsh (1982) shows that small firms often choose short-term debt while large firms prefer long-term debt. The reason why large firms can issue long-term debt more easily than small firms is that large firms have many advantages such as economic scale, bargaining power over creditors, stable cash flows, less probability of bankruptcy, etc. This is particularly true in Vietnam where SMEs have even more difficulty in gaining access to long-term loans because of banks’ strict regulations and high lending rates. Therefore, the fourth hypothesis is that firm size relates positively to debt ratio.

*Firm ownership*

Dewenter and Malatesta (2001) indicate that firms owned by governments are more highly leveraged than those held privately. In Vietnam, the big role of state ownership is also a feature of the economy. State-owned firms seem to get preferential treatment from banks, especially SOCBs, over private firms. The explanation for this argument might be that state-owned firms get support from the government, so they are less likely to go bankrupt and have less credit risks. The fifth hypothesis is that state-owned SMEs have higher debt ratio than private SMEs.

# **Empirical Research and Results**

## *Data Collection and Methodology*

The paper uses the data of 45 SMEs’ audited financial statements provided by the Auditing and Accounting Financial Consultancy Service Company (AASC) in Vietnam for the years 2009 – 2011. These SMEs are registered under the Vietnamese Law of Enterprises, with a charter capital of less than 10 billion Vietnamese dong (VND). Financial firms, foreign-owned SMEs and joint-ventures are excluded. The sample consists of 16 state-owned firms and 29 private firms.

The data is based on book value. The relevant variables are calculated as follows:

$$debt ratio= \frac{total debt}{total assets}$$

$$short-term debt ratio= \frac{total short-term debt}{total debt}$$

$$growth= \frac{total asset of this year-total asset of previous year}{total asset of previous year} x 100\%$$

$$tangibility= \frac{total fixed assets}{total assets}$$

$$profitability= \frac{profit before tax}{total revenue}$$

With regard to firm ownership, the data is divided into two groups: the first group consists of state-owned SMEs and the other of private SMEs. The analysis process includes examining the effect of firm ownership on capital structure, and a regression of all determinants (growth, tangibility, profitability, and firm size) on debt ratio through a linear model: DR = α0 + α1GR + α2TAN + α3PRO + α4FS + µ where DR is debt ratio; STR is short-term debt ratio; GR is Growth; TAN is tangibility; PRO is profitability; FS is Firm size and µ is the error term.

# **Results and Discussion**

It can be seen from Table 1 that Vietnamese SMEs have a debt ratio of 55.26 per cent on average. State-owned SMEs have higher rate of debt than private SMEs, with debt ratios of 76.25 per cent and 54.16 per cent, respectively. The reason for such high debt ratios is that the financial system in Vietnam has not yet developed; the stock market has only opened in 2000 and commercial banks are still the main financial institutions.

In terms of debt-equity ratio, state-owned SMEs are indeed more highly leveraged than private SMEs with an average leverage level of 4.3762, which is twice as much as the private SMEs’ leverage level of 2.0855. This can be explained by the preferential treatment from the government of state-owned SMEs to receive capital credit that comes from the government budget or ODA capital with a low interest rate, and/or preference of banks’ lending policies. Considering that state-owned SMEs have a 20 per cent higher debt ratio than private SMEs, as mentioned above, these two criteria support the fifth hypothesis that state-owned SMEs have higher debt ratio than private SMEs.

In comparison with the period 1998 – 2001 (Tran and Ramachandran, 2006), it is noticeable that: 1- the difference in the debt ratio between these two kinds of SMEs is becoming smaller. This may be the result of the government’s recent policies of creating a more just financial environment; 2- debt ratios of both firms have increased as the result of the financial crisis which started in 2007 in the US and then quickly spread all over the world. Stock markets fell on a global scale and it has become harder to get financed from equity issue. This supports the assumption that debt ratios tend to increase during recessions and fall during expansionary periods.

A substantially low amount of long-term debt is a major difference between developed countries and developing ones. Table 1 shows that most SMEs employ more short-term debt than long-term debt to finance their operations. The average short-term debt is approximately 83.49 per cent, the percentage in state-owned SMEs being 83.74 and the percentage in private SMEs being 83.06. This criterion does not present much difference between state-owned SMEs and private SMEs. Besides that, the data also shows that there are some private firms without any long-term debt during the years 2009 – 2010. This may be a consequence of the 2007 financial crisis. During this period, the economy’s slow growth with high lending ratios made it even more difficult for SMEs to access long-term debts, especially bank loans.

With regard to other variables, the results show some difference between the state-owned and private SMEs. The average of profitability at 18.57 per cent is quite high in this period because some firms with big profits compensated for the ones with losses. The firms’ positive growth reflects the quick recovery of Vietnamese economy after the crisis, where private SMEs recovered a bit more promptly than state-owned SMEs, with the rates of 1.6898 and 1.2881 respectively. In terms of profitability, it seems that state-owed SMEs are more profitable than private SMEs. The rates are 21.80 per cent for state-owed SMEs and 16.36 per cent for private SMEs. This can be explained, however, by the preferential treatment from the government to state-owned SMEs, not only for capital credit as mentioned above, but also for other facilities such as land rental and tax rates. Besides that, it can be seen that Vietnamese SMEs are really small. The average firm’s charter capital is only 3,398.4 million VND, in which state-owned SMEs are a little bigger with the average charter capital of 3,667.2 million VND.

To examine the possible relationship among variables, the correlation matrix is obtained as shown in Table 2. The results indicate that all the correlation coefficients are small. For example, the correlation is 0.064 between debt ratio and firm size, -0.284 between debt ratio and tangibility and -0.018 between debt ratio and profitability. This means that the chosen factors are only slightly correlated with each other. In other words, there is no collinearity problem among explanatory variables, so a multiple regression analysis can be done to find out the effects of the proposed determinants on capital structure.

Table 3 presents the result of a regression analysis on the linear model of debt ratio, which is statistically significant at the 5 per cent level. Adjusted R-squared suggests that these four variables – firm growth, tangibility, profitability and firm size – can explain 16.98 per cent of the change in debt ratio. This implies that many other factors affect capital structure, and require further study, which should find and include more variables in the model. It can be seen that firm size relates positively while profitability and tangibility have a negative relationship with debt ratio. Growth, with a high P-value of 0.1526, appears not to be a significant determinant.

As far as tangibility is concerned, the coefficient of -0.245 is significant (the P-value is 0.000117) indicating a negative relationship with debt ratio – if tangibility increases by 1 per cent, then the firm’s debt ratio reduces by 0.245 per cent. This result is consistent with the second hypothesis and can be partly explained by the high level of short-term debts of Vietnamese SMEs as mentioned above and shown in Table 1.

Regarding the connection between profitability and capital structure, the result also supports the third hypothesis that profitability relates negatively to debt ratio. The coefficient -0.0218 means that a 1 per cent increase in profitability will lead to a 0.0218 per cent decrease in debt ratio. This confirms the argument that when a firm gains a high return on investment, it tends to use relatively little debt and to do financing with internally generated funds instead.

For the effect of firm size, the evidence is consistent with the fourth hypothesis, but not strong enough. Although the result is statistically significant with a P-value of 0.0392, the coefficient is very small at 0.000792, meaning that when a firm increases in size by 1 per cent, its debt ratio rises by only 0.000792 per cent. The reason might be that the sample of 45 firms in the period of three years is not large enough to reveal a more significant relationship. It can be concluded, however, that in the case of Vietnamese SMEs, firm size does not have much effect on firms’ leverage level.

# **Summary and Conclusions**

This study gives empirical evidence of the capital structure of Vietnamese SMEs over the years 2009 – 2011. Compared with the capital structure studied in Western countries, the financing decisions of firms in a developing country like Vietnam are affected by the same factors but slightly differently. Particularly, determinants such as tangibility, profitability, and firm size are statistically significant, whereas firm growth appears to have no effects on debt ratio. Profitability proves to have a negative relationship with leverage in both developed and developing countries. Tangibility has a negative effect on Vietnamese SMEs’ capital structure choice because of a high short-term debt level, which is different from firms in developed economies. The effect of firm size is not as clear in Vietnam as in other developed countries. Additionally, three main issues are identified and investigated.

First, the average debt ratio of Vietnamese SMEs is very high because the financial system in Vietnam is weak and undeveloped – firms rely mostly on internal resources and bank borrowing. The stock market has just started, but was affected badly by the global crisis in 2007 and has not yet fully recovered. Another issue is that state-owned SMEs receive more preferential treatment, including capital credit preference, over private SMEs. If these problems are not solved, Vietnamese SMEs (especially the private ones) will continue to face difficulties in making financing decisions.

Second, Vietnamese SMEs employ less long-term debt and more short-term debt than firms in developed countries. Commercial banks, which are the main financial institutions, usually have highly strict lending regulations that not many SMEs are satisfied with. Their loan contracts are generally short-term and it is difficult for SMEs, especially private ones, to get access to long-term loans from banks. The lack of formal direct credit markets for long-term debt is also an obstacle to Vietnamese firms.

Third, because profitability and tangibility have a negative relationship with debt ratio in Vietnamese SMEs, one way to reduce the leverage level is to increase profitability and tangibility. However, this solution alone is impractical to highly leveraged firms because of risk-shifting and debt-overhang problems. Therefore, to improve the present capital structure of Vietnamese SMEs it is essential that the financial system, especially the stock market, be improved and highly developed to meet the capital demands of firms.

The major limitation of this study is that it uses data from a small amount of Vietnamese SMEs over a short period of time. Therefore the results do not provide evidence strong enough to support the hypotheses. For future research, a regression sample with more observations and more variables over a longer time period should be obtained. For example, regressors added into the model could include proxies of business risk, tax rate, management style, operating structure, economic stability, etc. In addition, studies could also examine the capital structure of big firms and MNEs (Multinational Enterprises) or firms in different economic sectors.

Table 1: Capital Structure by Ownership Structure

|  |  |  |  |
| --- | --- | --- | --- |
|  | **State-owned SMEs** | **Private SMEs** | **Total** |
| Leverage (Debt/Equity) | 4.3762(2.6587) | 2.0855(2.1027) | 2.3978(2.3088) |
| Debt ratio | 0.7625(0.1203) | 0.5416(0.2816) | 0.5526(0.2307) |
| Short-term liabilities | 0.8374(0.2900) | 0.8306(0.2104) | 0.8349(0.2330) |
| Growth  | 1.2881 (0.4528) | 1.6898(1.0718)  |  1.6455 (1.2050) |
| Tangibility | 0.1003(0.0755) | 0.2578(0.2443) | 0.2413(0.2249) |
| Profitability | 0.2180(0.3583) | 0.1636(0.2043) | 0.1857(0.2348) |
| Size (charter capital – million VND) | 3,667.2(3,506) | 3,131.7(3,262) | 3,398.4(3,385) |

The number of state-owned SMEs and private SMEs is 16 and 29, respectively.

Table 2: Correlation Matrix

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | DR | STR | GR | TAN | PRO | FS |
| DR | 1 |  |  |  |  |  |
| STR | -0.085219 | 1 |  |  |  |  |
| GR | 0.100032 | -0.049109 | 1 |  |  |  |
| TAN | -0.283795 | 0.060746 | 0.054387 | 1 |  |  |
| PRO | -0.017705 | 0.025247 | -0.064034 | 0.102448 | 1 |  |
| FS | 0.063991 | 0.086145 | -0.029031 | -0.021048 | 0.129608 | 1 |

Table 3: Summary of regression result

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Coefficients | Standard Error | t Stat | P-value |
| Intercept | 0.094577 | 0.197451 | 4.127423 | 0.000879 |
| GR | 0.018689 | 0.012982 | 1.439604 | 0.152627 |
| TAN | -0.245334 | 0.099028 | -4.57791 | 0.000117 |
| PRO | -0.021791 | 0.079866 | -0.272848 | 0.045447 |
| FS | 0.000792 | 0.000109 | 0.726161 | 0.039178 |

Confidence level of 95%

Adjusted R-square: 0.1698

F-stat: 4.8265

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