CAPITAL STRUCTURE OF THE SMALL AND MEDIUM ENTERPRISES IN SRI LANKA: AN EMPIRICAL STUDY

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Abstract

This study investigates the determinants of capital structure in small and medium enterprises in Sri Lanka. The multiple linear regression models are used to estimate the relationship between capital structure, measured by the long-term and short-term debt ratios, and firm level characteristics such as size, profitability, assets structure, growth and firm risk towards variation in profitability. This study shows that most Small and Medium Enterprises in Sri Lanka use more short-term debts over long-term debts with high liquidity and long-term solvency positions. A survey was carried out based on 51 SMEs and the hypotheses formulated according to the pecking order theory The findings of the study suggest that the size and profitability strongly influence on both short-term and long-term debt ratios. Assets structure also causes in determining debt ratios. However, firm risk towards variation in profitability and growth provide weaker evidence on influencing both long-term and short-term debt ratios. The results of the study imply that size, profitability and assets structure affect in the determination of capital structure in small and medium enterprises in Sri Lanka. The results support the pecking order theory implying the size of the firm limits access to long-term debts, suggesting policy makers to provide an environment to retain sufficient amount of internally generated funds within the SMEs.

Keywords: *SME, ICT, and Capital Structure*

1. INTRODUCTION

The study of capital structure in SMEs attempts to explain the mix of owners' capital and debt capital used by SMEs to finance real investment. Selecting an appropriate capital structure to the firm is very essential and it is a critical decision to any business organization. The theoretical base for capital structure in SMEs is stemming from corporate finance theory. Many theories have been used to explain SMEs' capital structure in the past decades in different contexts. Korkeamaki and Rutherford (2006) shows that SMEs differ from large firms, and there are specific issues to SMEs. Therefore, it is necessary to treat them as a different firm class when considering about capital structure decisions. However, many studies have shown that capital structure theories can also be applied to SMEs (Cassar and Holmes, 2003), (Abor and Biekpe, 2009). There are some theories in particular explain the capital structure, namely, static trade-off choice and pecking order theory (POT). In addition, some studies use theory called the life cycle approach to explain the capital structure (Abor and Biekpe, 2009).

Empirical evidence on these theories relevant to SMEs is largely based on developed countries and it is not very clear how these theories are applicable to SMEs in developing countries. Therefore, this study is to test how those capital structure theories apply to Sri Lankan SMEs because they have different social, cultural and institutional structures. It investigates what are the existing capital structures among SMEs and which factors are determining the capital structure.

According to previous studies of SME in Sri Lanka by Abeyratne (2005), Priyanath (2006), and International Trade Institute of Singapore Pvt Ltd, Rabobank International Pvt Ltd (2006), Munidasa (2008), there are a various constraints faced by SMEs in Sri Lanka, especially in relation to finance. Recent research has shown that there are difficulties in obtaining bank loans due to the problem of providing acceptable collaterals and guarantees to the bank and also high interest rates for loans as well as high transaction cost (Abeyratne, 2005), (International Trade Institute of Singapore Pvt Ltd, Rabobank International Pvt Ltd, 2006), (Munidasa, 2008). Further loan interest rate for SMEs given by many banks 17%-30% which is normally higher than the large firms due to higher default risk face by these enterprises (Munidasa ,2008),. However, there are no published literature on the capital structure determinants of SMEs in Sri Lanka and this study attempts to fill this gap. The main objective of this study is to examine the existing capital structure patterns among SMEs. In addition to this, it is going to identify the factors that affect to SMEs' capital structure and their relationships.

The rest of this paper is organized as follows. Section 2 describes the potential determinants of the SMEs' capital structure; Section 3 deals with the data and methodology. The results of the empirical test are shown in Section 4 and summarizes and conclusion is given in final section.

2. DETERMINANTS OF A SME'S CAPITAL STRUCTURE

Static trade-off has several aspects; agency cost, bankruptcy cost and tax benefits associated with debts. It shows that there is an optimal indebtedness ratio, which depends on the trade-off between the cost of debts and its benefits. Agency cost arises due to the relationships between debt-holders and shareholders, and those between owners and managers of the firm (Jensen and Meckling, 1976). Agency costs are relatively high for small, medium and newly established firms, because those firms do not have experience in formal financial controlling and the firms' flexibility of change assets (van der Wifst and Thurik, 1993). In addition, it is argued that according to the agency theory by Jensen and Meckling (1976), agency cost is increased with the introduction of any type of securities which is used to financing the firm. Moreover, van der Wifst and Thurik, (1993) argued that a capital structure can exist when total agency cost is at a minimum. Further, van der Wifst and Thurik (1993) shows that even in the absence of tax benefits and bankruptcy cost, there is a way an optimal capital structure can exist. Myers (1984) shows the cost of financial distress, which includes legal and administrative cost of bankruptcy can affect to erode firm value even if formal default is avoided. Another aspect of

the trade-off theory is tax benefits, which is associated with the use of debt. Modigliani and Miller (1963) and Myers (1984) show that there are tax benefits using debt in capital structure. Tax benefits generated, only if the interest payments are tax deductible. However, this simple tax shield using debt in capital structure can be complicated with several aspects (van der Wifst and Thurik, 1993). They say due to non-debt tax shield such as depreciation charges and investment tax credit can reduce the tax shield by using debt. Another aspect is personal taxes can offset the corporate tax shield. In addition, the aspect of tax regime can also create a difference in investors' preference. Therefore, capital structure decisions get affected from the trade-off between cost and benefits of using debts for financing.

Pecking order theory says that there is a preference order for financing choice used in finance in a firm (Myers, 1984). It is derived from the literature on agency theory suggested by Jensen and Meckling (1976), on signaling theory by Ross (1977) and on information asymmetry (Myers and Majluf, 1984). Simply, pecking order theory says that firms prefer to use internal finance in the first instance. Moreover, if the firms require external finance, they should issue the safest securities first. Because of information asymmetry, which creates uneven distribution of information in firm and potential financiers, makes varies in cost for the finance (Myers, 1984), (Myers and Majluf, 1984). Hogan and Hutson (2005) show that Pecking order theory in both the demand side and the supply side of finance for a firm. Information asymmetry takes the supply side of Pecking order theory that creates a moral hazard and adverse selection problems. In the demand side, pecking order theory says that owner managers are reluctant to change or to give up independence of the control of the firm. Therefore, owner managers are preferred to use internal funds than getting funds from external sources.

According to Berger and Udell (1998), information opacity is a defining characteristic of SMEs, unlike large firms as SMEs do not engage in contracts which are publicly visible. In addition, as a result of information asymmetry it gives more chance in moral hazard and adverse selection in SMEs financing. Because of having adverse selection in information asymmetry, finance providers or banks and other finance institutions face greater difficulties in determining "good" or "bad" investment projects. This creates more obstacles in SMEs financing (Berger and Udell, 1998), (Hogan and Hutson, 2005). According to Hogan and Hutson (2005) most of the time, owners are the managers of SMEs and as a result of that those managers prefer to maintain their independence, control and leadership. Therefore, there is tendency that, SMEs use more internal funds than the external funds and to use debt than equity.

In addition, the life cycle approach explains capital structure determinants in a firm. The life cycle approach shows that the firm's access to finance depends on the development stage of the firm. Further, it says newer firms mainly depend on internal owners' capital, because they are not in a position to use external financing sources for firm's investment projects (Berger and Udell, 1998), (Abor and Biekpe, 2009).

By considering theoretical models of capital structure and empirical studies, this study deals with asset structure, growth, size, profitability, and risk as the possible determinants of capital structure. These factors have been used by previous studies by Titman and Wessels, (1988), Michaelas, Chittenden and Poutziouris, (1999), Sogorb, (2005) Esperanca, Gama and Gulamhussen,(2003),Cassar and Holmes, (2003), Hall, Hutchinson and Michaelas, (2004), Nguyen and Ramachandran, (2006), Eriotis, Vasiliou and Ventoura-Neokosmidi, (2007), Bell and Vos, (2007), Abor and Biekpe, (2009).

Size

Many studies have shown the size of the firm as a major determinant of capital structure in SMEs (Esperanca, Gama and Gulamhussen, 2003), (Nguyen and Ramachandran, 2006). In addition, some theories show why the size should be taken as a determinant of capital structure. Information asymmetry is relatively high in small firms. Therefore, small firms have to incur higher cost to resolve this problem. Also, bankruptcy cost, agency cost and transaction cost are higher in small firms. Therefore, small firms issue less share capital than large firms do or issue share capital with higher cost. Empirical studies say that small firms tend to use more short-term financing than large firms (Titman and Wessels, 1988) because large firms are highly diversified and as a result of that, there is less risk associated with low bankruptcy cost than small firms. In addition, they have a strong bargaining power to deal with financing institutions as a result of diversification (Marsh, 1982). Researchers say that Size is a more important characteristic in terms of economic considerations for making decisions for debt (Degryse, de Goeij and Kappert, 2009). Some empirical studies have shown that there is a positive relationship between long term debts and size of the firm due to great bargaining power towards creditors when firms expansion (Sogorb, 2005, Cassar and Holmes, 2003, Hall, Hutchinson and Michaelas, 2004, Nguyen and Ramachandran, 2006, Abor and Biekpe, 2009) and a negative relationship with the short-term debts (Titman and Wessels, 1988, Chittenden, Hall and Hutchinson 1996, Hall, Hutchinson and Michaelas, 2004). However, some studies have shown that there is a postive relationship between short- term debts and size of the firm (Sogorb, 2005, Michaelas, Chittenden and Poutziouris, 1999, Abor and Biekpe, 2009).

In view of the above varied results by previous studies and due to non-availability of empirical findings with respect to Sri Lanka, logarithm 10 of total assets has been used to measure the size of the firm. This study formulates the hypotheses as,

H_{a1}: There is a relationship between size and long-term debt ratio
H_{a2}: There is a relationship between size and short-term debt ratio

Assets Structure

Assets structure is also an important factor to determine the capital structure of SMEs. There is a great liquidation value where the firms exist with more tangible assets (Titman and Wessels, 1988). This provides comparatively better security for financiers for their exposure since those fixed assets can be used as collateral. These collateral reduce the agency problem with debt holders as well as credit risk because in case the firm goes bankrupt, the debt holders can sell off these collaterals. The assets of the firm help to mitigate the information problem in SMEs. Many SMEs use accounts receivables, inventories as internal collaterals and specially use owner's personal assets collateral for financing (Berger and Udell, 1998). Empirical studies have shown that there is a positive relationship between long term debts and assets structure (Michaelas, Chittenden and Poutziouris, 1999, mac an Bhaird and Lucey 2006, Degryse, de Goeij and Kappert 2009, Abor and Biekpe, 2009). Michaelas, Chittenden and Poutziouris, (1999) show that there is a positive relationship between short-term debts and assets structure. However due to firms' matching duration of their assets and liabilities some studies have shown that there is a negative relationship between assets structure ans short-term debts (Cassar and Holmes, 2003, Abor and Biekpe, 2009).

Based on the above literature the present study has been defined the assets structure as the ratio of fixed assets to total assets and formulate hypotheses as,

H_{a3}: There is a relationship between assets structure and long-term debt ratio
H_{a4}: There is a relationship between assets structure and short-term debt ratio

Firm Risk towards Variation in Profitability

Firm risk is a primary determinant of capital structure. It is a generally accepted phenomena to say that debts can be used in obtaining tax benefits. However, it is difficult to obtaining 100% tax benefits of using debts because it has deal with the bankruptcy cost also. When it is using more and more debts, it increases the bankruptcy cost which leads to the increment of default risk of the firm. In addition, if there is a high operating risk, the firm is discouraged to use debt to reduce finance risk. Empirical studies have shown that there is a positive realtionship between risk and the long-term debts (Michaelas, Chittenden and Poutziouris, 1999, Esperanca, Gama and Gulamhussen 2003, Nguyen and Ramachandran, 2006) and a positive relationship with short-term debts (Esperança, Gama and Gulamhussen 2003, Nguyen and Ramachandran, 2006). Esperanca, Gama and Gulamhussen (2003) say that varying results from empirical studies are obtained due to the difficulties in measuring risk. The unanimity definition of variables appropriate to measure bankruptcy cost and its effect on capital structure.

This study used the measure of risk as coefficient of variation in profitability (Std. Deviation of pre-tax profit / Mean pre-tax profit) and form next hypotheses in this context as,

H_{a5}: There is a relationship between firm risk towards variation in profitability and long-term debt ratio
H_{a6}: There is a relationship between firm risk towards variation in profitability and short-term debt ratio

Profitability
According to Trade-off theory and Pecking order theory, profitability has an influence on capital structure. Free cash flow theory says that to get more profit, use more debts; but debt truncates free cash flows, thereby discouraging managers to invest funds in value destroying projects (Jensen, 1986). Because of that, it expects a positive relationship between profit and debt. However, many studies did not accept or ignored this idea for capital structure studies. According to Pecking order theory by Myers (1984) and Myers and Majluf (1984), takes another way to express relationship between profit and capital structure. Due to information asymmetry, firms use internal generated funds firstly and then external funds. Higher profit earning firms and profitable SMEs increase internal financing and those are tending to avoid external financing due to the fact that they can retain more profit within the firm for future investments. Also young firms are mostly dependent on external debts due to lack of internally generated funds.

Empirical studies have shown that profitability is a more important determinant in deciding SMEs' capital structure and many studies have shown that there are negative relationships with both long-term and short-term debt ratios (van der Wifst and Thurik 1993, Michaelas, Chittenden and Poutziouris 1999, Sogorb 2005, Esperanca, Gama and Gulamhussen 2003, Cassar and Homes 2003, Hall, Hutchinson and Michaelas 2004, Nguyen and Ramachandran 2006, Degryse, de Goeij and Kappert 2009, Abor and Biekpe 2009).
As the measure of profitability this study has used the ratio profit before tax into total assets. Next hypotheses are formulated as,

H_{a8}: There is a relationship between profitability and short-term debt ratio
H_{a7}: There is a relationship between profitability and long-term debt ratio

Growth
According to Pecking order theory (Myers, 1984) and (Myers and Majluf, 1984), the result for growth shows that there is an ambiguous relationship for growth and capital structure. In the demand side, a growing firm needs more funds for investing. Lots of growing SMEs do not have enough internally generated funds; so, they have to use external financing. This suggests that there is a positive relationship between capital structure and growth. On the other hand, it makes difficulties to access external financing for SMEs due to information asymmetry. This shows a negative relationship. Also, the growing firms which have a large research and development expenditure tend to increase the level of debts. However, if lenders identify the growth benefits of the firm they increase the long-term interest rate and that limits the firms borrowing due to high interest cost but growth put firms in to long-term borrowings due to strain in internal retains.

Hutchinson (2003) and Nguyen and Ramachandran (2006) have shown that growth is not an important factor to determine SMEs' capital structure through their emprical studies. However, some empirical studies have shown that there are positive relationships between firm growth and both long-term and short-term debt ratios (Michaelas, Chittenden and Poutziouris 1999, Esperanca, Gama and Gulamhussen 2003, Bell and Vos 2007). Eriotis, Vasiliou and Ventoura-Neokosmidi (2007) show that there is a negative relationship between both long-term and short-term debt ratios indicating that growth causes variations in the value of the firm. Greater variation in firms interpret as risky firms, thereby making it more difficult in accessing debts and stable future cash flows makes easy access to debts for capital requirements than the growth of the firms. Abor and Biekpe 2009 say growth make conflicts between lenders and owners due to moral hazard in assets substitution and that makes SME firms resort to short-term debts to avoid such conflicts showing a negative relationship between growth and short-term debt ratio.

This study has used the growth in turnover as the measure of growth and final hypotheses are formulated as,

H_{a9}: There is a relationship between firm growth and long-term debt ratio
H_{a10}: There is a relationship between firm growth and short-term debt ratio

3. DATA AND METHODOLOGY

This study used secondary data to find out the determinants of SMEs' capital structure. There is no universally accepted definition for SMEs. Because of not having a proper database for SMEs in Sri Lanka, it was very difficult to find out information about SMEs and most of the SMEs are located in western province (Munidasa, 2008). Therefore, this study selected SMEs from 05 top audit firms in Colombo district using the following criteria.

1. Firms where the total assets of the firm less than Rs. 50 Mn.
2. SMEs who have prepared audited annual accounts for 2007-2009 three years' period in these five audit firms.

According to these criteria, there are 117 SMEs preparing audited annual accounts in 2009 and the final sample was 51 SMEs' annual accounts for the period of 2007 – 2009.

Based on the previous empirical studies (e.g., Esperanca, Gama and Gulamhussen 2003, Cassar and Homes 2003, Nguyen and Ramachandran 2006, Abor and Biekpe, 2009) this study used long-term debt ratio and short-term debt ratio as the measures of capital structure. These two debt ratios are selected as the dependent variables in the regression analysis. Long-term debt ratio (LTD) is calculated long-term debt divided by total assets of the firm and short-term debt ratio (STD) calculated current

liabilities divided by total assets of the firm. The regression models are used as follows.

$$LTD = \beta_0 + \beta_1 SIZE + \beta_2 AST + \beta_3 RISK + \beta_4 PROF + \beta_5 GROW + \varepsilon$$
$$STD = \beta_0 + \beta_1 SIZE + \beta_2 AST + \beta_3 RISK + \beta_4 PROF + \beta_5 GROW + \varepsilon$$

Where, LTD =Long Term Debt Ratio, STD =Short Term Debt Ratio, SIZE =Size of the firm, AST =Assets Structure, RISK =Firm Risk towards Variation in Profitability,
PROF =Profitability, GROW =Firm Growth, ε= Error term.

The study comprises three types of cross section effects as "normal", "fixed" and "random" for multiple linear regression analysis. Further to analysis, the study performed generalizes least square methods controlling weights and coefficient covariance method.

4. EMPIRICAL RESULTS

Descriptive statistics shows the general characteristics of dependent and independent variables and Table 1 in appendix depicts the summary of the descriptive statistics. Accordingly, the descriptive statistics table shows high Jarque-Bera values. Those values are not close to zero and as a result it indicates variables are not normally distributed. Firm risk towards variation in profitability variable shows highest standard deviation value, indicating the highest variation variable. Long-term debt ratio mean value indicates that long-term debts around 6 percent of the capital of SMEs. 0.4946 mean value of the short-term debt ratio indicates that how important it is in SMEs' capital structure over long-term debts. In addition, short-term debts vary in large range from maximum 2.166 to 0.0011 minimum.

Presence of homoskedastic it may give disturbances to this type of regression model in panel data. Therefore, allowing the presence of cross section heteroskedasticity, the regression model estimated giving cross section weight as general least square (GLS) weights. Cross-section and period specific effects can exist in regression model. In order to control those effects, the regression models of both long-term debt and short-term debt ratio checked with the fixed effects model. Assuming that there is no fixed effect, random effect model checked both regressions in long-term and short-term. Relating deference to the regression model checked the long-term and short-term debt ratio under the random effect model.

The correlations between independent and dependent variables are shown in Table 1. Long-term debt ratio has a positive significant correlation with size & assets structure of the firm. However, long-term debt ratio significantly has a negative correlation with the profitability. Short-term debt ratio has a negative significant correlation with size and the assets structure of the firm. Results show that a significant positive correlation exists between size of the firm and assets structure.

Regressions were proved to be significant at 5 percent in both long-term and short term debts. Regression results are shown in Table 2 under three effect models, which are identified as the normal effect, fixed effect and random effect. High R^2 and F-values show the success of the regression model to predict the debt ratios. This implies the debt ratios are explained by the variables in the regression model. Coefficients of regression results were marginal. Therefore, it conducted a "Wald coefficient test" based on chi-square distribution to check whether the coefficient values are different from zero or not. Wald test results are shown in Table 2 in the appendix. According to the Wald test result it shows that the coefficients of significant variables are not equal to zero.

All the models normal effect GLS cross section, fixed effect and random effect show that the size is positively related with long-term debt ratio except the normal effect regression model. A similar result is found by Michaelas, Chittenden and Poutziouris (1999), Sogorb (2005), Cassar and Homes (2003), Nguyen and Ramachandran (2006), and Abor and Biekpe (2009). Results suggest that when the firm size is increased, Sri Lankan SMEs can easily have access to long-term debt financing because of the increase in the diversification and the reduction of the transaction cost. For all models, size is negative and significantly relates with short-term debt ratio. This indicates that the higher transaction cost involved in SMEs when obtaining long-term debts.

Therefore, higher the size of the SME, the obtained short-term debts become lesser. This finding was supported by the research result of Titman and Wessels (1988), Chittenden, Hall and Hutchinson (1996) and Hall, Hutchinson and Michaelas (2004). This inverse relationship shows that SMEs in Sri Lanka use more short-term debt for their financing. The negative relationship between short-term debt ratio and size implies that there is a higher degree of information asymmetry in Sri Lankan SMEs. Due to existence of information asymmetry, SMEs are facing a difficult situation in obtaining long-term debts. When there is an informational opaque borrower, the cost of loan will be very high level with short maturity time (Ivashina (2009), Wittenberg-Moerman (2009)). Because of this reason, high information asymmetric SMEs have to obtain more short-term loans instead of long-term loans. However, when the firm's size increases, it tends to lead to a less information asymmetry situation. That makes the ability to place a larger amount of loan including long-term in multiple sources of financing. Because of that, SMEs in Sri Lanka tend to reduce short-term debts when increasing the firm size and access to more long-term debts.

The findings of the determinants of capital structure study in listed manufacturing companies in Sri Lanka by Gamini (2008), show that the firm size inversely relates insignificantly with leverage. His results indicate the firm size may not be a major determinant of its capital structure in listed companies. However, this study results suggest that the size of the firm is an economically more important factor to SMEs in Sri Lanka. According to the study of capital structure of Sri Lankan companies by Samarakoon (1999), firm size is indeed an important determinant not only for

SMEs but also for listed companies in Sri Lanka. In addition, the size of the firm is a discriminating factor for SMEs in Sri Lanka when firms access to long-term debts. Further, these results indicate that higher relevancy of size of the firm as a determinant factor of SMEs capital structure in Sri Lanka.

The effect of assets structure of the firm shows weaker evidence that affects long-term debt ratio. Results show that assets structure is significantly and positively correlates with long-term-debt ratio under the normal effect GLS cross section weight model. The results for positive relationship with the long-term debt ratio in SMEs is supported by result of previous researches (Michaelas, Chittenden and Poutziouris (1999), Degryse, de Goeij and Kappert (2009), and Abor and Biekpe (2009)) indicating that assets can be used as collateral to access finance and those collaterals help to mitigate the information asymmetry problem in SMEs. In all the other three models, assets structure does not show any relationship with long-term debt ratio. Short-term debt ratio significantly and negatively correlates with the assets structure of the firm under the normal effect and normal effect GLS cross section weights models suggesting the existence of matching duration of firms' assets and liabilities in Sri Lankan SMEs. Also, this inverse relationship implies that with less fixed assets in SMEs they have less collateral. So, they have to use more short-term debts for their financing instead of long-term debt. This inverse relationship between assets structure and short-term debt ratio in SMEs supports that previous researchers' result (Chittenden, Hall and Hutchinson (1996), Cassar and Homes (2003), Abor and Biekpe (2009)). However, under the fixed effect model and random effect model, assets structure does not show any relationship with the short-term debt ratio. Those results imply that assets structure does not provide strong support as collaterals when Sri Lankan SMEs access to debt financing to mitigate the risk and information asymmetry.

According to Samarakoon (1999), asset structure does not support determining leverage even in listed companies in Sri Lanka. However, Gamini (2008) has shown that assets structure of listed manufacturing companies in Sri Lanka is negatively related to capital structure going against the theoretical predictions. This indicates the influence of theoretical variables on Sri Lankan firms' capital structure is still not clear-cut at all. However, firm risk towards variation in profitability does not show any relationship with short-term debt ratio under any regression model. Long-term debt ratio shows a significant positive relationship with firm risk towards variation in profitability under the random effect regression model. This implies that when the firm risk towards variation in profitability increases, SMEs find more long-term debts to face the risk. Previous study results show the different results about the relationship between debt ratios and risk which is due to the existence of various definitions for firm risk factor (Esperanca, Gama and Gulamhussen 2003). However, study results show when the firm risk towards variation in profitability is increased, the long-term debt ratio is also increased. This might be possible due to volatility of profitability and increases operation risk. By his capital structure study, though it is against the theoretical predictions, Gamini (2008) has found that even capital structure of large scale companies is positively related with business risk.

Table 1: Ordinary Correlation Analysis between dependent and independent variables (Part I)

	LTD			STD			SIZE			AST		
	Corr.	t-Stat.	Prob.	**Corr.**	t-Stat.	Prob.	**Corr.**	t-Stat.	Prob.	**Corr.**	t-Stat.	Prob.
LTD	**1**	-----	-----	**-0.174**	-1.762	0.08	**0.426**	4.714	0.00	**0.212**	2.168	0.03
STD				**1**	-----	-----	**-0.241**	-2.480	0.01	**-0.253**	-2.617	0.01
SIZE							**1**	-----	-----	**0.271**	2.819	0.01
AST										**1**	-----	-----
RISK												
PROF												
GROW												

Table 1: Ordinary Correlation Analysis between dependent and independent variables (Part II)

	RISK			**PROF**			**GROW**		
	Corr.	t-Stat.	Prob.	**Corr.**	t-Stat.	Prob.	**Corr.**	t-Stat.	Prob.
LTD	**-0.003**	-0.031	0.98	**-0.701**	-9.823	0.00	**-0.102**	-1.020	0.31
STD	**0.117**	1.175	0.24	**-0.047**	-0.470	0.64	**0.132**	1.335	0.18
SIZE	**-0.062**	-0.621	0.54	**-0.423**	-4.663	0.00	**-0.318**	-3.354	0.00
AST	**0.050**	0.503	0.62	**-0.132**	-1.329	0.19	**-0.037**	-0.375	0.71
RISK	**1**	-----	-----	**0.091**	0.910	0.37	**0.148**	1.496	0.14
PROF				**1**	-----	-----	**0.130**	1.310	0.19
GROW							**1**	-----	-----

Corr: Correlation, t-Stat: t Statistic, Prob: Probability
Correlation Analysis: Ordinary
Numbers of observations: 102

Table 2: Regression Result

	Normal Effect		Fixed Effect		Random Effect		Normal Effect Cross Sec.	
Variable	**LTD**	**STD**	**LTD**	**STD**	**LTD**	**STD**	**LTD**	**STD**
C	-0.2789	1.5247	-3.1151	4.9184	-0.5800	2.3797	-0.2077	1.5787
	0.2179	**0.4472**	**0.7349**	**1.1631**	**0.2434**	**0.4739**	**0.0811**	**0.2291**
	-1.2800	*3.4093*	*-4.2391*	*4.2289*	*-2.3827*	*5.0221*	*-2.5611*	*6.8898*
	0.2036	0.0010	0.0001	0.0001	0.0192	0.0000	0.0120	0.0000
SIZE	0.0540	-0.1364	0.4588	-0.6479	0.0966	-0.2630	0.0361	-0.1363
	0.0313	**0.0643**	**0.1065**	**0.1685**	**0.0352**	**0.0687**	**0.0120**	**0.0327**
	1.7228	*-2.1223*	*4.3088*	*-3.8442*	*2.7417*	*-3.8267*	*3.0157*	*-4.1714*
	0.0881	0.0364	0.0001	0.0004	0.0073	0.0002	0.0033	0.0001
AST	0.0748	-0.2873	0.2564	0.2156	0.0732	-0.1289	0.1475	-0.4188
	0.0632	**0.1297**	**0.2209**	**0.3497**	**0.0761**	**0.1508**	**0.0277**	**0.0801**
	1.1832	*-2.2142*	*1.1607*	*0.6167*	*0.9626*	*-0.8548*	*5.3212*	*-5.2267*
	0.2397	0.0292	0.2519	0.5405	0.3382	0.3948	0.0000	0.0000
RISK	0.0041	0.0137	0.0066	0.0002	0.0085	-0.0006	0.0049	0.0077
	0.0053	**0.0108**	**0.0043**	**0.0068**	**0.0038**	**0.0062**	**0.0029**	**0.0079**
	0.7803	*1.2736*	*1.5218*	*0.0224*	*2.2481*	*-0.0940*	*1.6908*	*0.9757*
	0.4371	0.2059	0.1351	0.9822	0.0269	0.9253	0.0941	0.3316
PROF	-0.3753	-0.1759	-0.3520	-0.2125	-0.3659	-0.2792	-0.2046	-0.2173
	0.0460	**0.0944**	**0.0659**	**0.1043**	**0.0394**	**0.0688**	**0.0385**	**0.0785**
	-8.1593	*-1.8634*	*-5.3386*	*-2.0363*	*-9.2927*	*-4.0602*	*-5.3188*	*-2.7667*
	0.0000	0.0655	0.0000	0.0476	0.0000	0.0001	0.0000	0.0068
GROW	0.0085	0.0330	-0.0135	0.0295	0.0266	0.0064	0.0040	-0.0182
	0.0291	**0.0598**	**0.0841**	**0.1330**	**0.0340**	**0.0659**	**0.0086**	**0.0297**
	0.2934	*0.5517*	*-0.1608*	*0.2220*	*0.7822*	*0.0974*	*0.4667*	*-0.6139*
	0.7698	0.5824	0.8730	0.8253	0.4360	0.9226	0.6418	0.5407
R-squared	0.5234	0.1434	0.9358	0.9314	0.5543	0.2662	0.5531	0.5730
Adj R-squared	0.4986	0.0988	0.8559	0.8460	0.5262	0.2199	0.5299	0.5508
F-statistic	21.0870	3.2141	11.7139	10.9042	19.6942	5.7441	23.7662	25.7682
Prob(F-statistic)	0.0000	0.0100	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Method *	PLS	PLS	PLS	PLS	PER	PER	PE	PE

Profitability shows negative significant relationships with both long-term and short-term debt ratios other than the short-term debt ratio under the normal effect regression model. Long-term debt ratio indicates a significant negative relationship with profitability in the regression model for every effect. That negative relationship result was also obtained by van der Wifst and Thurik (1993), Chittenden, Hall and

Hutchinson (1996), Michaelas, Chittenden and Poutziouris (1999), Sogorb (2005), Esperança, Gama and Gulamhussen (2003), Cassar and Homes (2003), Hall, Hutchinson and Michaelas (2004), Nguyen and Ramachandran (2006), Degryse, de Goeij and Kappert (2009) and Abor and Biekpe (2009) in their empirical research studies. This negative relationship, with short-term debt ratio results are supported by van der Wifst and Thurik (1993), Michaelas, Chittenden and Poutziouris (1999), Esperança, Gama and Gulamhussen (2003), Hutchinson (2003), Hall, Hutchinson and Michaelas (2004), Nguyen and Ramachandran (2006), Degryse, de Goeij and Kappert (2009), Abor and Biekpe (2009). Further, the results of the study confirm the findings of Myers (1984) and Myers and Majluf (1984). Pecking order theory indicates that Sri Lankan SMEs also use their internal funds at the first instance for their fund requirements. Therefore, increasing profitability causes declining of long-term and short-term debts in SMEs in Sri Lanka. That shows preference for internal financing over external financing in Sri Lankan SMEs. Therefore, profitable firms which have access to retain profits can use those for their financing rather than seeking outside sources for financing. These inverse relationships between profitability and debt ratios are not applicable only to Sri Lankan SMEs but these inverse relationships are even applicable to large scale Sri Lankan companies according to the capital structure studies by Samarakoon (1999) and Gamini (2008) for Sri Lankan context.

Under every effect of the regression models, both long-term and short-term debt ratios does not show any relationship with firm growth. It shows very weak evidence on capital structure decision in Sri Lankan SMEs. These positive insignificance coefficient results are found for both debt ratios by Hutchinson (2003). In addition, Cassar and Homes (2003) and Hall, Hutchinson and Michaelas (2004) have obtained positive insignificant relationship between long-term debt ratio and growth. Though the growth rate has no significant influence on capital structure, the positive coefficient indicates that a firm with a higher growth rate would have relatively higher borrowings in its capital structure because of demand for investment funds exceed its internally generated funds. Samarkoon (1999) and Gamini (2008) have found that even capital structure of large scale firms in Sri Lanka does not significantly relate with the growth rate of the firm.

5. CONCLUDING REMARKS

This paper provides empirical evidence of the determinants of capital structures of SMEs in Sri Lanka. The study is based on panel data of Sri Lankan firms, which have total assets less than Rs.50 Mn. The study examined the capital structure determinants by providing directions and significance of regression coefficients under different effects of the regression model. The results found that the applicability of financial theories especially the pecking order theory for SME sector in Sri Lanka.

This study has highlighted the importance of distinguishing debts as long-term and short-term debts when considering the capital structure of SME. The reason for this

is a larger portion of financing for SMEs in Sri Lanka is made by debts which are categorized as short-term. This gives positive signs for existence of healthy liquidity and long-term solvency position.

The study also found that size and the profitability factors strongly affect long-term and short-term debt options in SMEs in Sri Lanka. Further, the study found that assets structure also affects in deciding long-term and short-term debt in Sri Lankan SMEs.

It is found that the size of the firm acts as a discriminating factor when SMEs accessing long-term debts. It clearly indicates that when SMEs are going to access long-term debt, the size of the firm plays an important role. In addition, the study provides evidence that the existence of information asymmetry in SMEs in Sri Lanka. Especially supporting pecking order hypothesis, Sri Lankan SMEs experiencing high earning rate would tend to have lower debt. Simply, Sri Lankan SMEs use more internally generated funds for their investment to reduce the debt level of the firm. This result implies that tax rates are strongly influence to investments in SMEs. This gives a hint for policy makers to suggest relevant policies aiming to keep more internally generated funds within the SMEs if they are to improve SMEs in Sri Lanka. However, long-term debt and short-term debt ratios in SMEs' in Sri Lanka show weaker evidence on firm growth and firm risk towards variation in profitability affecting to capital structure decisions. Assets structure of SMEs in Sri Lanka does not provide valid collateral to obtain external financing. This shows the higher existence of effect of information asymmetric cost in Sri Lankan SMEs due to weak support of assets structure to mitigate the cost and the risk. However, the assets structure found an inverse relationship with short-term debts due to existence of matching duration of assets and liabilities in Sri Lankan SMEs.

However, this study did not consider the maturity of debt when it is investigating the capital structure. In addition, this study carried out in one point in time any cross sectional examination of determinants of capital structure. Therefore, this study will capture only one part of the whole picture. However, the study can conclude that these determinants, namely size, profitability and assets structure, have considerable influence in deciding the capital structure of SMEs in Sri Lanka. Therefore, this study provides a framework of understanding capital structure and financing of SMEs in Sri Lanka.

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