

The Determinants Of Financial Leverage Of SME's In Mauritius

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ABSTRACT

The key aim of this paper is to test the relevance of the different financing theories for explaining capital structure choice in the Small and Medium Enterprises (SMEs) sector in Mauritius. One of the areas of financial theory that has worried much of academicians and professionals is debt policy decisions in firms due to the limited study in this field. Three of the most relevant theories of capital structure are explored, namely the Trade Off Theory, the Agency Theory and the Pecking Order Theory (POH). Hence, in order to shed more light over this issue, an empirical analysis has been carried out over a panel data sample of 25 firms of SMEs for the period 2002-2008, using quantitative analysis. The panel data methodology is used to test empirical hypotheses and controls for firm heteroskedasticity and corrects for autocorrelation among the variables that are involved. The findings show that some theories are not in line as such with the results obtained from the analysis as the POH. However, some of the Capital Structure Theories are considered important in determining financial leverage of SME's in Mauritius like agency costs involved, information asymmetry problems, liquidity and cash flow problems. The main implication of this study is to understand the position of SME in Mauritius in terms of their debt and its importance and contribution to the National Income.

Keywords: Capital Structure; Financial Leverage and SME

1. INTRODUCTION

This study examines the determinants of debt financing of SMEs in Mauritius. Financing decisions have been given considerable attention either within the context of perfect markets (Modigliani and Miller, 1958) or imperfect markets. In a world of perfect markets, if capital structure decisions are conceived, then these should not create problems to entrepreneurs. Since the risk in relation to financing can be diversified away. However, imperfections are indispensable to market operations. It is generally argued that these may turn out to be particularly acute in the context of small firms. One of the explanations could be the non-separation of ownership and control and non-existence of a market control mechanism, which magnifies the information asymmetry given the weak participation of small firms in capital markets.

The investment theory literature distinguishes between internal and external financing. Yet, it seldom pays attention to different instruments of external financing. Zingales (2000) argues that, "empirically, the emphasis on large firms has led us to ignore (or study less than necessary) the rest of the universe: the young and small firms, who do not have access to public markets". Generally, SMEs and entrepreneurial activities are considered to be important to economic development for a country (Hamilton and Harper, 1994). The few empirical studies on the capital structure of SMEs were mainly concentrated on developed economies with varied and inconclusive results.¹

The differences in institutional arrangements and financial markets between developed and developing countries indeed merit the need to look at the problem from the perspective of developing economies, in particular within the context of African countries such as Mauritius. The research question is to find out what influences

¹ (refer to Chittenden et al., 1996; Cressy and Olofsson, 1997; Jordan et al., 1998, Michaelas et al., 1999; Esperanca et al., 2003; Hall et al., 2004; Sogorb-Mira, 2005).

SMEs' debt financing decisions? This is the focus of the current study. SMEs in Mauritius are defined as firms which provide work for not more than 100 persons and whose total asset base, excluding land and building does not exceed the *cedi* equivalent of \$1 million in value (Venture Capital Trust Fund Act, 2004).

Small Medium Enterprises (SMEs) plays an important role in the development of an economic of a country (both developing and developed countries). They contribute to social growth through employment generation, exports, foreign currency, investment, income, wealth distribution and creation of new business. These benefits lead to economic growth and many countries has been promoting the setting up of small and medium business. In 2002 organization like World Bank Group had approved more than \$ 1.5 billion to SME support program as it is believed that SME play and contribute to future expansion of an economy.

As part of its policy of democratization of the economy, the Mauritian government has established a fund of Rs 200 million to promote the creation, restructuring and consolidation of small and medium-sized enterprises (SMEs).Mauritius is well placed to take advantage of these new opportunities. The SME sector, therefore, has a major role to play. Besides, employment in the large establishments have fallen from 61% of total employment in 2000 to around 56% at present implying that the percentage of total employment in the SME sector is taking an upward trend. It is equally important to note that 21% of the working population is currently working in their own or family enterprises. These point out that the small and medium enterprise sector is rapidly gaining ground.

Consequently, the study shows very appealing results in terms of the capital structure of the Mauritian SMEs. As stated by Titman and Wessels (1988), small firms usually tend to use more Short term debt finance than their larger counterparts. In the Mauritian context, it can be observed that Short term debt accounts for a higher proportion of total debt. This implies that Mauritian SMEs are mostly capable of accessing Short term credit in financing their business activities. Small firms are negatively related to Long term debt but positively related to Short term debt. This confirms the fact that reputation plays indeed and important role (Diamond, 1989). Older firms are not able to attract more debt capital whilst younger firms on the other hand do not have an easy access to Short term debt at favorable terms as compared to their listed counterparts.

This paper attempts to add to the existing literature by bringing new evidence on the financing decisions of SMEs for the period 2002-2008 for the case of a sample of 25 firms. The remainder of the paper is organized as follows. Section 2 provides a brief empirical review of the literature of capital structure. Section 3 describes the data, methodology and the econometric analysis adopted to explain the determinants of financial leverage of SMEs. In section 4, we provide discussion on the results of the panel data estimation. We conclude in section 6.

2. EMPIRICAL REVIEW

Several studies have attempted to describe the variation in debt ratios across firms. Some suggested that firms would usually select capital structure in relation to the attributes determining the various costs and benefits related to debt and equity financing. These findings vary from the irrelevancy hypotheses (Modigliani and Miller, 1958) to the optimal capital structure. The latter describes a situation whereby the cost of capital is minimized and the value of the firm is maximized, hence, maximizing the wealth of shareholders. Yet, these studies focused mainly on large listed firms. Small and Medium Enterprises have received limited attention in terms of the theories which have been developed to explain financing preferences, thus raising the issue of whether these findings are valid for firms other than large listed ones.

The Trade Off Theory (TOT) explains that firms are generally financed by both equities and debts. The TOT deals with the two main concepts, namely cost of financial distress and concept of agency costs. As per Modigliani and Miller (1958), the attractiveness of debt falls with the personal tax on the interest income. A firm would usually face financial distress when the firm is unable to cope with the debt holders' obligations. If the firm faces an ongoing failure in making payments to the debt holders, the firm can even be insolvent. The direct cost of financial distress refers to the cost of insolvency of a firm. The assets of the firm may be required to be sold at distress price once the proceedings of the insolvency starts. This is generally much lower than the current values of the assets. A massive amount of administrative and legal costs are also involved in the insolvency. Even if the company is not running at a loss, the financial distress of the company may crop up a number of indirect costs like

cost of employees, cost of customers, cost of suppliers, cost of investors, cost of managers and shareholders. The firms may often experience clashes of interests with the management of the firm, debt holders and shareholders. These disputes generally raise the issues of agency. These in turn give rise to the agency costs.

The Pecking Order Hypothesis (POH) became one of the most dominant theories of corporate leverage. Following the work on Agency theory (Jensen and Meckling, 1976), Information Asymmetry (Majluf and Myers, 1984) and Signaling Theory (Ross, 1977), Myers (1984) proposed that firms usually prefer internal to external finance. The pecking order hypothesis is normally in line with internal funds. When it is necessary to resort to external financing, the least risky claim is best. Hence, debt is preferable to equity finance. While empirical evidence on the POH does not offer convincing support (see Klein *et al.*, 2002, and Barclay and Smith, 2005 for a summary and discussion, respectively) its simplicity, predicting the priorities with which firms choose their means of financing, has given it a wide appeal.

Some researchers (e.g. Berggren *et al.*, 2000; Chittenden *et al.*, 1996; Holmes and Kent, 1991; Howorth, 2001; Norton, 1991a, 1991b; Scherr *et al.*, 1993) have tried to establish whether the POH applies to small firms. In general, empirical evidence about the applicability of the POH to small firms is mixed. For example, Norton (1991a) studied of the POH in high growth companies whereas Chittenden *et al.* (1996) observed that small firms especially seem to develop structures that have a minimum, rather than a maximum, amount of debt.

Furthermore Howorth (2001) found evidence of owners refusing to contemplate external equity finance. The confusing picture of the financial preferences of small firms may stem from the wide variety of ventures studied. These range widely both within and between studies thus rendering comparison difficult. They used a sample that includes firms that range in size from 60 to three employees; According to Chittenden *et al.* (1996) small firms are considered as employing up to 100 staff while Holmes and Kent (1991) use a cut-off of 20 employees.

Moreover, as Ang (1992) claims that there may be confusion in relation to the use of the terms equity and debt due to the financial intertwining of owners and their businesses that is characteristic of many small firms. Berger and Udell (1998) studied that in small firms much external debt is not external in an economic sense. Usually many lenders to small businesses require personal guarantees. From the perspective of the entrepreneur, it can be argued that the debt is more appropriately considered a personal liability. This confusion adds to the difficulty of assessing the applicability of the POH to small firm financing.

The issue of information asymmetry, which underpins the POH, is particularly severe in new ventures. Thus at this stage of their development, businesses are informationally opaque (Hall *et al.*, 2000; Schmid, 2001) and assets are often intangible and knowledge-based. Many of the methods in which owners of established businesses facilitate more efficient transactions by signaling information about the quality of their goods through, for example, an established track record and product branding are often not available to business start-ups. Further, firms prefer debt to equity finance where external funds are required. However, in attempting to raise external capital, investors facing an adverse selection problem would normally demand a premium, hence raising the required rate of return on external capital. This is the consequence of Information Asymmetry between managers and investors. Firms are thus better off if they meet financing needs from internal funds.

The presence of asymmetric information between managers and investors can cause the financial assets issued by the firms to be undervalued (Myers and Majluf, 1984). This in turn raises the cost of external financing as compared to internal, hence, making the second one preferable as a financing means. At the same time, the transaction costs derived from the external financing are avoided. The capital structure is thus the result of a “hierarchical” financing of firms throughout the years.

Contradictions of the POH

It must be emphasized that the relation between debt and economic profitability stated by the “Pecking Order” is contrary to the Trade off Theory and also to the usefulness of leverage as a financial signal (Ross, 1977). In addition, it further contradicts the mechanism to reduce the agency conflicts (Jensen, 1986). In all these situations,

the best financial situation and opportunities, one can relate to higher economic profitability predicts a direct relation between debt and profitability. The negative valuation of equity issue announcements by the financial markets (Myers, 1984) is also in accordance with the “Pecking Order” Theory. But it contradicts the existence of a search for an optimal debt ratio by the firms. This would mean that any change at the level of debt, be it a rise or fall, should normally cause an increase in value, since those changes in the capital structure would follow the optimal ratio, which is, the one that maximizes a firm’s value.

The advantage of leveraged firms

Managers of highly leveraged firms with less cash flow in hand, perceive their ability of using the firm’s resources for futile purposes, and follow a dramatically falling trend. Thus, firms which are mainly financed by debt offer managers lesser decision power as opposed to those financed mostly by equity. Hence, debt can be used as a control mechanism which enables lenders and shareholders to become the Principal parties in the corporate governance structure. Managers failing to meet their debt obligations can be removed and replaced by those that can do better. Therefore since leveraged firms ensure shareholders those managers do not have the ability to waste the company’s resources in discretionary expenses; they can be viewed as a better means to eradicate such problems for them. The ultimate outcome of creating debt is thus to transfer wealth from managers to investors (Jensen, 1989).

The above reasoning may conclude that firms opting for debt financing are always better for investors than those which use equity financing. Yet the question arises as to why not all the firms prefer debt financing. The answer lays in the fact that in general, firms using debt financing have to bear the increasing cost of capital and other related costs. As such, highly leveraged firms are more likely to face cash problems. This in turn raises their likelihood of bankruptcy, thus increasing all the costs in relation to bankruptcy. Highly leveraged firms tend to be low rated since they are generally regarded as risky companies. Hence this classification raises their overall cost of capital as they must guarantee higher returns for them to attract investors than those guaranteed by well rated firms.

Developing versus Developed

In general, SMEs and entrepreneurial activities are regarded as necessary for economic development according to Hamilton and Harper, (1994). The few empirical studies on the capital structure of SMEs have focused mainly on developed economies. It ended with varied and inconclusive results (Chittenden *et al.*, 1996; Cressy and Olofsson, 1997; Jordan *et al.*, 1998, Michaelas *et al.*, 1999; Esperanca *et al.*, 2003; Hall *et al.*, 2004; Sogorb-Mira 2005). As such, a developing economy would normally be different from a developed one, in terms of economic conditions and government policies. These differences in institutional arrangements and financial markets between developed and developing countries express the need to look at the issue from the perspective of developing economies, especially amongst African Countries. Mauritius form part of African countries and SMEs in Mauritius may show a different capital structure with limited access to external finance.

3. DATA AND METHODOLOGY

The sample of firms used in this study was drawn from Enterprise Mauritius since they represent the lists of all registered SMEs in Mauritius. Twenty five SMEs have been included for which the financial statements have been examined for the period 2004-2008. The sample excludes financial companies. This is because financial institutions tend to be regulated differently in terms of their capital adequacy requirements. Firms that have been chosen to be included in this study needs to have the following prerequisites that is it must have filed accounts for the period of the study; Do not have inconsistent financial data for more than four accounting periods. Accordingly a number of firms were discarded for which data was not available for the whole period, either because they were newly formed or having missing values for more than four years. Since all the firms sampled have the same financial year, this eliminates the distorting impact of different reporting periods and seasonality patterns.

Econometric Analysis

A panel data regression model is employed. The general form of the model can be written as: $Y_{it} = \alpha + \beta X_{it} + \mu_{it}$ with the subscript “i” denote the cross-sectional dimension, “t” representing the time-

series dimension. The left-hand variable “ Y_{it} ” represents the dependent variable (the firm’s debt ratio.) X_{it} set of explanatory variables in the estimation model, Alpha is the constant, Beta represents the coefficients, μ_{it} is a random term, $\mu_{it} = \mu_i + v_{it}$ where μ_i is the firm specific effects and v_{it} is the random term.

The regression model employed for this study is in line with what was used by Cassar and Holmes (2003), and Hall *et al* (2004). This takes the following form:

$$LDR_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 SIZE_{it} + \beta_3 AST_{it} + \beta_4 PROF_{it} + \beta_5 GROW_{it} + \beta_6 RISK_{it} + \mu_{it}$$

$$SDR_{it} = \beta_0 + \beta_1 AGE_{it} + \beta_2 SIZE_{it} + \beta_3 AST_{it} + \beta_4 PROF_{it} + \beta_5 GROW_{it} + \beta_6 RISK_{it} + \mu_{it}$$

Leverage, which is the dependent variable, is defined in terms of debt ratio. Debt contains both long-term and short-term debts. Consequently measures of capital structure include; long-term debt ratio that is long-term bank loans and other long-term liabilities repayable beyond one year, such as directors’ loans, hire purchase and leasing obligations and short-term debt ratio which includes bank overdraft, bank loans payable within a year and other current liabilities. The two dependent variables are: LDR = long-term debt/ (total equity + total debt) SDR = Short-term debt/ (total equity + total debt). The independent variables include, age of the firm (AGE), Size of the firm (SIZE), Asset structure (AST), Growth (GROW), profitability (PROF) and firm risk (RISK). These definitions follow those of previous studies (see Cassar and Holmes, 2003; Esperanca *et al.*, 2003; Hall *et al.*, 2004; Sogorb-Mira, 2005). All the variables used in this study are based on book value in line with the argument by Myers (1984) that book values are proxies for the value of assets in place.

Variables

Age of the firm (Age): Age of the firm is normally viewed as a standard measure of reputation in capital structure models. Over time, from the lifecycle perspective, the firm establishes itself as a continuing business and thus increasing its capacity to take more debt. But a bank would tend to evaluate the credit worthiness of entrepreneurs before granting a loan since these are commonly believed to raise high hopes on very risky projects promising high profitability rates. According to Diamond (1989), firm reputation can be used to overcome the issue of creditworthiness. He suggested that reputation is the good name a firm has built up over the years, which is understood by the market and which has observed its ability to meet its obligations in a timely manner.

Firm size (Size): Size has been considered as an important determinant of a firm’s capital structure. Larger firms tend to be more diversified and thus have lower variance of earnings, which allow them to stand high leverage ratios (Castanias, 1983; Titman and Wessels, 1988; Wald, 1999). Smaller firms on the other hand may find it somewhat more costly to work through information asymmetries with lenders. As such it may present lower debt ratios (Castanias, 1983). Empirical evidence on the relationship between size and capital structure of SMEs sustains a positive relationship (Barton *et al*, 1989; Sogorb-Mira, 2005). They claim that smaller firms are more likely to depend on equity while larger firms are most preferably use debt. Cassar and Holmes (2003), Esperanca *et al.* (2003) and Hall *et al.* (2004) observed a positive link between firm size and long-term debt but a negative association with short-term debt. According to Titman and Wessels (1988), small firms have a tendency to use more short-term finance than their larger counterparts because smaller firms normally have higher transactions costs when they issue long-term debt or equity.

Asset structure (AS): Asset structure is equally an essential determinant of SMEs capital structure. Firms with more tangible assets would normally exhibit greater liquidation value (Harris and Raviv, 1990; Titman and Wessels, 1988). Such firms have higher financial leverage. This is because they borrow at lower interest rates and their debt is secured with the assets (Bradley *et al.*, 1984). Debt could be more readily used if there are durable assets to provide for collateral (Wedig *et al.*, 1988). The costs in relation to adverse selection and moral hazards are minimized provided the firm’s assets are used as collateral. The limitation of maturity length of credit granted by lenders may explain partially debt structure in SMEs. In this sense, small firms can use less long-term debt, but possibly more short-term debt, than large firms (Sogorb-Mira, 2005). The empirical evidence provides confirmation of a positive

relationship between asset structure and long-term debt, and a negative relationship with short-term debt (Chittenden *et al.*, 1996; Jordan *et al.*, 1998; Michaelas *et al.*, 1999; Cassar and Holmes, 2003; Hall *et al.*, 2004; Sogorb-Mira, 2005). Yet, Esperanca *et al.* (2003) found positive relationship between asset structure and long-term as well as short-term debt.

Profitability (Prof): Profitability is normally assumed to have a positive link with debt. This has been clarified by the POH, whereby firms prefer internal sources of finance to external sources. Profitable firms, having access to retained profits, may rely on it as opposed to outside sources such as debt (Barton *et al.*, 1989; Titman and Wessels, 1988). The POH can readily be applied to SMEs (Cosh and Hughes, 1994). In fact SMEs seem to face a more acute version of the POH. It is called as a “constrained” POH by Holmes and Kent (1991) and a “modified” POH by Ang (1991) since they have less access to external funds, debt and equity than do large enterprises. The POH advances that the use of external funds is very much connected to profitability. SMEs, in particular if they are not listed, will usually make use of internally generated funds as a first resort. Cressy and Olofsson (1997) encountered that SMEs show evidence of control aversion. This is demonstrated by a preference to sell the firm rather than relinquishing equity. It is also described by the fact that owners prefer to use internally generated funds to finance further investment. If they are not able to do this, they would pursue debt financing. Empirical evidence seems to be consistent with the POH (Barton *et al.* 1989; Chittenden *et al.*, 1996; Friend and Lang, 1988; Jordan *et al.*, 1998; Michaelas *et al.*, 1999; Shyam-Sunder and Myers, 1999). Moreover, Cassar and Holmes (2003), Esperanca *et al.* (2003), Hall *et al.* (2004) and Sogorb-Mira (2005) suggested a negative effect of profitability on both long-term and short-term debt.

Firm growth (sg): Michaelas *et al.* (1999) claimed that future prospects have a positive association with debt, especially short-term debt. They further argue that the agency problem and the resulting cost of financing may fall if the firm issues short term rather than long-term debt. Growth is expected to place higher demand on internally generated funds. This in turn pushes the firm into borrowing (Hall *et al.*, 2004). Myers (1977) nevertheless, is of the view that firms with growth prospects will have a smaller proportion of debt in their capital structure. This is due to the fact that conflicts between debt and equity holders are in particular serious for assets that give the firm the option to carry out such growth opportunities in the future. In the situation of small firms with more concentrated ownership, it has been noted that high growth firms will require more external financing and therefore would display higher leverage Heshmati, (2001). There exists also an association between the degree of previous growth and future growth. Yet empirical evidence seems inconclusive. Michaelas *et al.* (1999) recognized that future growth has a positive relation with leverage and long-term debt. In a South African study, Abor and Biekpe (2006) demonstrated that SMEs with high growth potentials tend to attract more debt finance than those with low growth opportunities. Cassar and Holmes (2003), Hall *et al.* (2004) and Sogorb-Mira (2005) also showed positive relationship between growth and both long-term and short-term debt. Whilst Chittenden *et al.* (1996), Jordan *et al.* (1998) and Esperanca *et al.*, 2003 reported mixed evidence.

Firm risk (Risk): According to Kim and Sorensen (1986), firms with high degree of business risk have usually less capacity to sustain financial risks. Hence they use less debt. The level of risk is normally considered to be one of the primary determinants of a firm's capital structure (Kale *et al.*, 1991). Yet empirical investigation has led to contradictory results. Some studies have experienced an inverse relationship between risk and debt ratio (Bradley *et al.*, 1984; Friend and Lang, 1988; Kale *et al.*, 1991; Titman and Wessels, 1988). Others denote a positive association (Jordan *et al.*, 1998; Michaelas *et al.*, 1999). Esperanca *et al.* (2003) also observed positive associations between firm risk and both long-term and short-term leverage.

Based on the above interpretation and assertions, the following hypotheses have been formulated.

Table 1: Formulation of Hypotheses

Age	H _{1a}	Age of the firm is negatively related to long-term debt ratio.
	H _{2a}	Age of the firm is positively related to short-term debt ratio.
Size	H _{1b}	Firm size should be positively related to long-term debt ratio.
	H _{2b}	Firm size should be negatively related to short-term debt ratio.
Asset	H _{1c}	Asset structure is positively related to long-term debt ratio.
	H _{2c}	Asset structure is negatively related to short term debt ratio.
Profit	H _{1d}	Profitability is negatively related to long-term debt ratio.
	H _{2d}	Profitability is negatively related to short-term debt ratio.
Growth	H _{1e}	Growth is positively associated with long-term debt ratio.
	H _{2e}	Growth is negatively associated with short-term debt ratio.
Risk	H _{1f}	Risk is negatively related to long-term debt ratio.
	H _{2f}	Risk is negatively related to short-term debt ratio.

4. RESULTS: Long Term Debt

According to Table 2, the descriptive statistics are displayed with respect to both dependent and independent variables. Most of the SMEs have a relatively low debt ratio, as shown by the mean total debt ratio of 43 percent (29 percent (SDR) + 14 percent (LDR)). The mean for Long term debt of the sample firms is 14 percent and 29 percent for Short term debt of total equities and liabilities. This highlights the importance of Short term debt over Long term debt in financing Mauritian SMEs. Normally, Long term debt is difficult to obtain from lending institutions because of collateral. As such, Short term debts are more often used by SMEs. This is consistent with empirical evidence. The average age is approximately 10 years and varies between 8 to 15 years. The mean size of SMEs is around 3 million and 500 thousand rupees (inverse of log: 10^x times 6.54). Asset structure has a mean of 0.33. This implies that on average, fixed asset accounts for 33 percent of total assets, which indeed proves a point. Thus small firms do not really have many assets to use as collateral when having recourse to long term debt. As far as profitability is concerned, the mean profitability over the period amounts to -0.5 percent which follows a decreasing trend. As for the average growth rate, it accounts for 8.5 percent whilst firm risk shows a mean value of 0.19.

Table 2: Descriptive Statistics

Variable	Mean	Standard Deviation	Minimum	Maximum
LDR	0.140188	0.162772	0.001707	0.565419
SDR	0.292399	0.138512	0.017842	0.633483
Sg	0.846266	2.149586	0.002532	10.71425
Prof	-0.005501	0.300961	-1.630958	0.815306
As	0.328624	0.291096	0.003124	1.397705
Size	6.540699	0.672255	5.091512	8.483709
Age	9.72	1.975831	8	15
Risk	0.190466	0.155759	0.031719	0.62702

In order to examine the possible degree of multicollinearity amongst the variables, a correlation matrix has been computed in Table 3. It can be noted that Long term debt has a positive correlation with asset structure, sales growth and size whilst Short term debt exhibits a positive association with age and size only. Normally multicollinearity would have been detected if the correlation matrix would have displayed a correlation of greater than 80% (0.8).

Table 3: Correlation among independent variables

Variable	Ldr	Sdr	Age	Size	As	Prof	Sg	Risk
Ldr	1							
Sdr	-0.657	1						
Age	-0.197	0.2473	1					
Size	0.0034	0.0975	0.0631	1				
As	0.3437	-0.507	-0.073	-0.1437	1			
Prof	-0.108	-0.048	0.1411	0.1395	0.0229	1		
Sg	0.4533	-0.429	-0.081	-0.2042	0.4848	-0.2077	1	
Risk	-0.254	-0.065	-0.126	0.0455	0.0875	-0.0156	-0.12	1

Table 4 and 5 shows the econometrics results for the whole sample. In order to identify which methodology is appropriate, we compared the pooled estimates and random effect estimate, the Lagrangian Multiplier Test is performed. With a large chi-square test, indicative of a low p-value, we reject the null that the pooled estimate is appropriate. Second, to compare the random effect estimates with the fixed effect estimates, the Hausman test is performed. If the model is correctly specified and if the individual effects are uncorrelated with the independent variables, the fixed effect and random effect should not be different.

Table 4: Hausman specification Test

Variables	(b) Fixed	(B) Random	(b-B) difference	sqrt(diag(V _{b-V_B})) S.E
	Coefficients			
Age	-0.0157276	-0.0157391	0.0000115	0.0009754
Size	0.0325446	0.0313983	0.0011463	0.0042716
As	0.1227165	0.1221692	0.0005473	0.0130223
Prof	-0.0226923	-0.0226093	-0.000083	0.012047
Sg	0.0243599	0.0240613	0.0002986	0.0013699
Risk	-0.2777874	-0.2779829	0.0001955	0.0121639

A high chi-square value is indicative of the appropriateness of either the fixed effect or the random effect. With a large chi-squared, we reject the null hypothesis in favor of the random group effect model. The Hausman test produces a chi-square of 0.9999. Hence, the random effect model is the appropriate model to use, as Prob > chi2 is indeed greater than 0.05. Table 5 shows the results after correcting for Autocorrelation and Heteroskedasticity and detects no autocorrelation. Profitability is insignificant at 5 percent level.

According to Table 5, Age has a negative relationship with Long Term debt, which is indeed in conformity to the Hypothesis. Yet the negative relationship could imply that older firms do not have good track records in terms of financial worthiness. As such, they might not be in a position to take a long term loan. They are not able to access debt financing more easily than listed firms who do have a proper credit history. The positive association between size and Long term debt confirms the hypothesis mention above. It also shows a significant result implying that as the firm keeps on expanding, in terms of assets and diversification, it is going to have a rather easier access to Long term debt. Smaller firms find it quite difficult to have access to long term debt since it is more costly as a result of information asymmetry with lenders and owner managers.

Table 5: Test for Autocorrelation and Heteroskedasticity

Ldr	Coefficient	Standard Error	T	P>/t/	95% Confidence Interval	
Age	-.0159539	.0050307	- 3.17	0.002	-.025814	-.0060939
Size	.0286484	.014871	1.93	0.054	-.0004982	.0577951
As	.1371579	.0404505	3.39	0.001	.0578765	.2164393
Prof	-.0231291	.0343387	-0.67	.501	-.0904317	.0441735
Sg	.0218508	.0055444	3.94	0.000	.010984	.0327175
Risk	-.2856854	.0640105	-4.46	0.000	-.4111436	-.1602272
Cons	.098145	.1107642	0.89	0.376	-.1189489	.3152389

The results for asset structure shows that it is statistically significant at 10 percent for Long Term debts. They also denote a positive relationship. The reasons could be that small firms are perceived to be risky ventures and as such, they are often required to provide more valuable collateral when applying for Long term debt financing. Since asset substitution effect is stronger within small firms, the owner has greater discretion leading to higher monitoring costs by banks and other suppliers of Long term debt financing. This leads these institutions to require more valuable collateral that just a mere financial statement. The result shows an insignificant relationship thus rejecting the hypothesis. Had it been otherwise, the Pecking Order hypothesis would have been confirmed meaning that less profitable SMEs would more likely have recourse to Long term debt. Unfortunately the p-value shows a different result. It says that whether there is an increase in profit or a decrease, there would be no effect on debt financing. Small firms do not consider profitability as a factor when deciding upon Long term debt. This could be due to various reasons.

First it could be that small firms in general tend to focus more on their asset structure or their growth when they need to take a long term loan. As banks normally demand solid collateral before granting a loan and they also prefer stable growth as opposed to high profitability when granting loan. Therefore small firms would rather concentrate in increasing their turnover, fixed assets and total assets rather than paying attention to whether they are making profit or loss. A second reason could be the ambiguous trend of profitability. The data collected showed an awkward trend, in the sense that some firms were running at losses for several years whilst others made profit for two to three years then delved in losses the year after and the year coming, they started to prosper again. Others start with profit but ended in losses. As such much firms presented this kind of profitability. But most of the firms face considerable amount of losses for several years. This could also explain the insignificant result generated by the software.

Growth has a positive association with debt. As theory predicted as well as empirical findings, in the case of small firms, high growth firms are expected to be having easy access to Long term debt since, as it has been specified, banks would normally prefer stable growth rather than high returns, which is why these firms generally tend to prefer stable growth. Risk is negatively related to long term debt, implying that firms taking higher risks have normally less capacity to sustain this level of financial risk. They therefore use less debt. It thus confirms the hypothesis as the p value is indeed significant.

Results for Short Term Debt

Table 6: Hausman specification Test

Sdr	(b) Fixed	(B) Random	(b-B) difference	sqrt(diag(V _{b-V} B)) S.E
	Coefficients			
Age	.0150293	.0148612	.000168	.0008051
Size	-.0026246	-.0005222	-.0021023	.0035444
As	-.1597598	-.1679245	.0081647	.0108172
Prof	-.0641703	-.0583214	-.0058489	.0100113
Sg	-.0183236	-.0175343	-.0007893	.0011351
Risk	-.0392576	-.0371209	-.0021367	.0100347

With a large chi-squared, we reject the null hypothesis in favor of the random group effect model. The Hausman test produces a chi-square of 0.9942. Hence, the random effect model is the appropriate model to use, as Prob > chi2 is indeed greater than 0.05. The next step involves a test for Autocorrelation and Heteroskedasticity and as shown in Table 7, it corrects for both and detects no autocorrelation.

Table 7: Test for Autocorrelation and Heteroskedasticity

Sdr	Coefficient	Standard Error	T	P>/t/	95% Confidence Interval	
Age	.0157046	.0041385	3.79	0.000	.0075933	.0238159
Size	-.0000807	.0121848	-0.01	0.995	-.0239624	.0238011
As	-.1859595	.0335309	-5.55	0.000	-.2516789	-.1202402
Prof	-.0713983	.0276539	-2.58	0.010	-.125599	-.0171976
Sg	-.0154464	.0045792	-3.37	0.001	-.0244215	-.0064714
Risk	-.0100562	.0525825	-0.19	0.848	-.1131161	.0930037
Cons	.218349	.0909636	2.40	0.016	.0400635	.3966344

Age of the firm denotes a positive relationship in relation to Short term debt. This implies that younger firms are not often being offered credit facilities so easily. It could be because they are new and do not have enough knowledge about the market. Creditors thus find it riskier. Whereas older firms have experience and knowledge and creditors would more likely prefer to grant credit facilities to them rather than trusting a new firm. Size of the firm observes a negative relationship with short term debt but the p value is insignificant. This implies that when taking short term debt, size does not have an important role to play. Banks would not refrain from granting a small amount of loan to firms simply because they are small in size. Other factors will need to be considered.

The asset structure which is indeed a very important determinant in debt financing, as banks usually looks for collateral before granting any facility. As such, asset structure has a negative association with Short term debt. This means small firms tend to rely on short term debt for financing since the necessity to provide collateral is not as important as in the case of Long term debt. Surprisingly profitability denoted a significant p value. The significantly negative relation obtained between profitability and Short term debt confirms the hypothesis that less profitable SMEs are more likely to require Short term debt financing than more profitable ones. Hence, this observation is consistent with the Pecking Order arguments. This maybe because small firms have easier access to short term debt and thus loss-making firms would normally tend to rely more on credit facilities and also short term loans for financing new investments.

Sales growth denotes a negative relationship with Short term debt and is statistically significant. This implies that as firms continue to take more short term debt, they would gradually start to experience a fall in their growth. This is due to the fact that an increase in number of creditors might prove to be bad for the reputation of the firm since too much credit facilities can lead to a fall in growth. Furthermore, since small firms find it easier to borrow money on a short term basis, they would tend to borrow as much as they can. Yet this can lead to fall in the level of growth as the cost of borrowing might turn higher. Risk denotes a negative relationship with short term debt but then it is also accompanied by an insignificant p-value. It can thus be concluded that risk factors are not considered as an important determinant when taking short term loans. Banks furthermore, are rather more concerned when granting long term loan.

5. CONCLUSION

This study examined the determinants of financial leverage of SMEs in Mauritius. The results describes that short-term debt constitutes a relatively high proportion of total debt of Mauritian SMEs. Furthermore, the positive associations between the debt ratios and both Asset Structure and Growth are very crucial in influencing SMEs' access to debt finance. Normally, when applying for external debt finance, newer and smaller firms are often discriminated against. The positive association between asset structure and long-term debt ratio implies that asset tangibility or collateral plays an important role in SMEs' access to long-term debt finance. Moreover, SMEs with lower portions of fixed assets in their total assets are likely to face difficulty in having access to long-term debt capital because of their inability to produce the required collateral. Hence, the ability to provide collateral still remains an important factor for SMEs in accessing long-term credit in Mauritius. Yet, the negative relationship observed between asset structure and short-term debt ratio means that SMEs in Mauritius try to finance their fixed assets with long-term, and their current assets with short-term debt. Therefore, it supports the asset maturity matching principle in SMEs.

The results clearly does not support the POH in the sense that SMEs profitability is negatively related to Long term debt due to the irrational trend of profitability. As such, it supports the fact that due to the financial intertwining of owners and their businesses, there may be confusion in relation to the use of the terms equity and debt, which is characteristic of many small firms (Ang, 1992). On the other hand for Short term debt, it proves the point. This is because SMEs would have a preference for inside financing over outside debt financing, as the cost of outside financing is greater for the firm. Since Mauritian SMEs do not have access to the public equity, the theoretical predictions that seem to explain their capital structure is the “constrained” POH by Holmes and Kent (1991) and a “modified” POH by Ang (1991). This means SMEs will initially rely on retained earnings, if they are unable to do this, they will seek debt financing.

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