

## Capital Structure and the Firm Determinants: Evidence from Small and Medium Enterprises (SMEs) in Malaysia

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**Abstract**-We examine the determinants of capital structure of small and medium enterprises (SMEs) by utilizing the data of 15,323 companies only for the year 2007 covering the northern area of Peninsular Malaysia such as the state of Perak, Penang, Kedah and Perlis. By conducting cross-sectional data analysis, we found that the determinants factor such as size, profitability and tangible asset is significantly related to long term debt. Size and tangible assets have a persistent and consistent negative and significant relationship with long term debt. Further, profitability is found to be significantly and positively related to long term debt. However, the study found that the liquidity has no impact on long term debt in SMEs.

**Keywords:** Capital Structure, SMEs, Long-term debt

### I. INTRODUCTION

The small and medium enterprises (SMEs) play a vital role in the development of the Malaysian government's economic growth. According to Dr Zeti Akhtar Aziz, Governor of the Central Bank of Malaysia, in her speech during the 7<sup>th</sup> Conference of Asia-Pacific Economic Cooperation (APEC) Financial Institutions Dealing with SMEs on July 16, 2010, she urged the important of development of the SMEs can be as the driver of the economic growth process directly would achieve a more balanced growth. She also mentioned about the contribution of SMEs to Malaysian economy, which is the SMEs constitute 99% of all businesses, 57% of total employment, 35% of gross domestic product (GDP) and 20% of total exports.

Based on these economic indicators, we can say that the SMEs as important contributors to the growth of the Malaysian economy and this experience have been agreed by Hamilton and Harper [8]. Therefore, we would like to investigate further the way of SMEs choose their financing preference or how they manage their capital structure in order to run their businesses and remain being competitive advantage locally and globally.

The optimal capital structure theories as explained by Modigliani and Miller [14] to discuss on the capital structure or financing preferences that is focusing only on large listed firms. Therefore, there are an issues have been raised by the previous researchers whether that findings are valid to be used for other firms mainly small firm such as SMEs and this issues have been received limited attention [1].

Thus, this article intends to investigate the relationship between firm characteristic determinants (size, profitability, liquidity and tangibility) with long-term debt of SMEs in the northern corridor of Economic Region (NCER) in Malaysia. There are nine sectoral classifications made in this study. This paper is structured as follows: Section II provides the background of SMEs in Malaysia. Section III reviews the previous studies on the determinants of capital structure and the data collection, methodology and empirical models used in analyzing the data is described in Section IV. Section V discusses the findings of the study and finally, Section VI concludes and explains the limitation of the research.

### II. SMEs IN MALAYSIA

The Small Medium Enterprises (SMEs) in Malaysia can be classified into activity, turnover, and size and the SMEs is the major sources of employment. Generally, the term of an enterprise itself is considered as SME with regards to the annual sales turnover or number of full-time workers. Table 1 explains in details the SME's definition in Malaysia basically categorized based on the sales turnover and total number of full-time employees [10].

TABLE I. DEFINITION OF SMEs BASED ON SALES TURNOVER AND NUMBER OF FULL-TIME EMPLOYEES IN MALAYSIA

Category	Micro-enterprise	Small enterprise	Medium Enterprise
1. Manufacturing, manufacturing-related services and agro-based industries	Sales turnover of less than RM250K / fewer than 5 full-time employees	Sales turnover between RM250K and RM10 Mil / between 5 to 50 full-time employees	Sales turnover between RM10 Mil and RM25 Mil / between 51 and 150 full-time employees
2. Services, primary agriculture and information and communication technology (ICT)	Sales turnover of less than RM200K / fewer than 5 full-time employees	Sales turnover between RM200K and RM1 Mil / between 5 and 19 full-time employees	Sales turnover between RM1 Mil and RM5 Mil / between 20 and 50 full-time employees

(Source: SMIDEC [20])

According to Dr Zeti [22], the Malaysian government has established the National SME Development Council (NSDC) in 2004 to formulate broad policies and strategies which its aims in creating and enabling environment for SMEs

development across all sectors. In order to achieve this mission, SMEs development programs under three broad strategic thrusts of strengthening the enabling infrastructure, enhancing SMES capacity and capability and enhancing access to financing was introduced and organized by the SME Corporation Malaysia in October 2009. Therefore, 354 programs with financial commitment of RM6.02 billion are being employed to build up high performance and resilient SMEs in Malaysia.

The SMEs can be a competitive advantage in emerging market because it has greater flexibility and ability to adjust to changes in the market and it has a potential to raise productivity and performance. In addition, the government and financial sectors (banks) give full support in the development of SMEs locally and globally. Due to these advantages, we have initiated to evaluate the determinants which influence the SMEs to decide their optimal capital structure in running their businesses.

### III. LITERATURE REVIEW

The theory of capital structure was initiated by Modigliani and Miller since 1958 discussing on the effect of capital structure on the firm value by concluding their work that the “capital structure is irrelevance” which means that the firm value was not influenced by the financial structure. Modigliani and Miller [15] also explain about the tax shield when firms can pay lower taxes if equity financing and encourage firms to use all debt financing for tax purposes because interest is deductible. Therefore, firms can attain optimal capital structure by practicing this tax saving activities and firms with higher profitability would choose to have high debt to gain tax benefits. However, Myers [16] and Myers and Majluf [17] in their hypothesis of pecking order or asymmetric information, claim that firms prefer internal financing to debt to equity. Therefore, firms with higher profitability will use higher retained earnings and less debt and this is consistent with the study done by Abor and Biekpe [1] in Ghana. They find there is a significantly negative relationship between profitability (as calculated by profit before tax to total asset) with long term debt.

Cosh and Hughes [4] explain that SME owners try to use and meet their financing needs based on a pecking order theory as follows: firstly, using their "own" money (personal savings and retained earnings); secondly, short-term borrowings; thirdly, longer term debt; and finally least preferred of all, from the introduction of new equity investors that represents the maximum intrusion. In the nutshell, the pecking order theory suggests that the relationship between leverage and profitability will be negatively correlated because the more profitable the firm, the less need it has to borrow either long-term or short-term.

Rajan and Zingales [19] construe that large firm are likely to be more diversified and are expected to employ higher amount of debt than small firms. This statement has also been supported by other studies which say that smaller firms tend to use less long term debt and more short term debt due to shareholder-lenders conflict [1][13][21].

In term of liquidity, Manos, Murinde and Green [12] indicate that liquidity ratio reflects firms’ ability to pay creditors in the short term. It is expected that liquidity and leverage to have a negative relationship as firms tend to use the extra cash to finance their investment instead of incurring interest costs [5]. Additional debt would deteriorate the current ratio further and makes the firm’s financial standing weak [6].

However, the different theories of capital structure contributed different attributes which can lead the companies to make a decision on how they can choose for the debt financing. Tangible assets also play a vital role and act as collateral and provide security to lenders in the event of financial distress. According to Jensen and Meckling [9], collaterality is very important and act as the protection to lenders from moral hazard problem when there is a conflict between shareholder and lenders. Abor and Biekpe [1] find there is a significantly positive relationship between asset structure (as measured by fixed asset divided by total asset) and long term debt. In addition, other previous empirical studies also find a positive relationship between tangibility and long term debt, however negative relationship between tangibility and short term debt [18][2][21].

### IV. METHODOLOGY

This study assumed a direct relationship between firm characteristic determinants (independent variables) and long term debt (dependent variable). The relationship is tested based on the following empirical model and this model also employed by the previous studies such as Abor and Biekpe [1], Hall et al. [7], and Cassar and Holmes [3].

$$LDEBT_i = \beta_0 + \beta_1 SIZE_i + \beta_2 PROFIT_i + \beta_3 LIQUIDITY_i + \beta_4 TANGIBLE_i + \varepsilon_i$$

where:

LDEBT	= long-term debt
SIZE	= total asset
PROFIT	= return on assets before tax
LIQUIDITY	= current assets divided by current liabilities
TANGIBLE	= fixed asset divided by total assets
$\varepsilon$	= random error
$\beta_i$	= parameters to be estimated

In this study, we conduct cross-sectional data analysis after controlling all the important exogenous factors such as state, then by using ordinary least square (OLS) technique, we run the analysis. The data are mainly taken from Companies Commission of Malaysia (CCM). Originally, there are 16,550 SME companies in the list. However, after deleting all missing information, we are left with only 15,323 companies. The data are only for the year 2007 covering SMEs in the northern area of Peninsular Malaysia such as the state of Perak, Penang, Kedah and Perlis.

We have also developed 4 models to determine which model is more superior or appropriate (goodness of fits) for this study. Model 1 and Model 3 based on the data at level and log form respectively, however in Model 2 (level) and

Model 4 (log form), we included dummy variable for nine sectoral classifications. Basically, Model 1 and Model 2 is used as an indicator of confirming the direction sign between independent and dependent variables. Further, the findings of Model 4 were found to be more superior and results of analysis in Model 4 are used for further discussion of the study.

## V. RESULTS AND DISCUSSIONS

Table 2 reported the descriptive statistics of all variables in the study. Long term debt as dependent variable has a mean value of 1,664,671. Meanwhile, the independent variables as denoted by SIZE, PROFIT, LIQUIDITY and TANG exhibit mean value of 12,256,915, -0.1795, 20.02328, and 0.283 respectively.

TABLE II. DESCRIPTIVE ANALYSIS

	LDEBT	SIZE	PROFIT	LIQUIDITY	TANG
Mean	1664671.0	12256915	-0.1795	20.02328	0.282558
Median	18333.00	1481737.	0.0296	1.083539	0.210966
Max	2.06E+09	7.37E+09	2539.500	187972.9	1.000000
Min	0.000000	0.000000	-3947.279	0.000000	0.000000
Obs.	15323	15323	15323	15323	15323

We have conducted a correlation analysis by using the data at level and also in a log form in order to investigate the possible degree of multi-collinearity among the variables as shown in Table 3 and Table 4. The results of correlation analysis remain the same indicating all variables are not related to each other or there is no multi-collinearity problems exist among the variables used in this study.

TABLE III. CORRELATION ANALYSIS – LONG-TERM DEBT (LEVEL)

	LDEBT	SIZE	PROFIT	LIQUIDITY
LDEBT	1			
SIZE	0.3213	1		
PROFIT	0.1257	0.4521	1	
LIQUIDITY	0.0007	0.0259	0.0396	1
TANG	0.0555	0.0512	0.0074	-0.0120

TABLE IV. CORRELATION ANALYSIS – LONG-TERM DEBT (LOG FORM)

	lnLTDEBT	lnSIZE	lnPROFIT	lnLIQUIDITY
lnLTDEBT	1			
lnSIZE	0.4863	1		
lnPROFIT	0.3495	0.0269	1	
lnLIQUIDITY	0.0087	0.1221	0.0223	1
lnTANG	0.0290	0.1004	-0.0037	-0.2887

Table 5 reported the regression results for Model 1, Model 2, Model 3 and Model 4. Model 2 and Model 4 have taken into consideration the dummy variable of nine sectoral classifications in SMEs as classified by the Malaysia Standard Industrial Classification 2000 (MSIC 2000)[11].

TABLE V. RESULTS OF ANALYSES – LONG-TERM DEBT MODEL

	Model 1	Model 2	Model 3	Model 4
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	Level		Logarithmic Form	
<b>Panel A: Estimated Model</b>				
	676.570***	321.638	-18.5851***	-18.6132***
C	(3.8143)	(0.6735)	(-4.6284)	(-4.3026)
SIZE	0.0864***	0.0862***	0.9651***	0.9766***
	(4.6649)	(4.4831)	(6.8999)	(6.9259)
PROF	-0.1275***	-0.1274***	1.2066***	-1.2530***
	(-8.8868)	(-8.8808)	(2.9705)	(3.0932)
LIQ	-104.54	-115.13	0.2292	0.2525
	(-0.2903)	(-0.3197)	(0.6295)	(0.6954)
TANG	1715.07	1653.31	3.9633***	3.9665***
	(1.2258)	(1.1812)	(4.9465)	(4.1554)
<i>Dummy Var:</i>				
	-	1.7948	-	-0.8983***
DS1		(0.1627)		(-5.6920)
		-5.7968		-0.5829*
DS2		(-0.2738)		(-1.9339)
		8.1608		0.1015
DS3		(0.1282)		(1.1083)
		4.6525		0.9809**
DS4		(1.3804)		(2.0446)
		-4.8240		0.0083
DS5		(-0.0006)		(0.0734)
		-7.9688		-0.0321
DS6		(-0.1407)		(-0.3985)
		4.4344		0.0113
DS7		(0.4824)		(0.0867)
		1.3120**		-0.4785***
DS8		(2.1063)		(-5.3765)
		1.7871**		0.1503
DS9		(2.0287)		(1.1911)
<b>Panel B: Model Criteria</b>				
Obs.	15323	15323	15323	15323
Adj. R <sup>2</sup>	0.3196	0.5199	0.6101	0.7142
AIC	3.6663	3.6663	5.1390	5.1337
F-stat	563.1689**	174.4486**	1856.586***	582.7466***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)

\*\*\*significant at 5% level

We have chosen the results of analyses in Model 4 for further discussion due to the more superior model as compared to others. The results signifies that the size is significantly positively related to long term debt and this findings is conformed with those of previous such as Rajan and Zingales [19] and Abot and Biekpe [1]. This results can further explained that the larger the firm the more diversified and these firms are also having lower risk as compared to smaller firms.

In relation to the profitability, there is a statistically significant negative relationship with the long term debt and it is confirmed in that SMEs finance their activities following the financing pattern as suggested by the pecking order theory [1]. This findings also indicate that the SMEs with less profitable are more likely to apply the external debt financing than SMEs with more profitable in the business.

The study also finds that the tangibility as measured by fixed asset divided by total assets has a positive and significant related to long term debt indicating that non-current assets are important and act as the protection to lenders from moral hazard problem [9]. This result is also consistent with the findings of Pindalo, Rodrigues, and de la Torre [18], Chittenden, Hall and Hutchinson [2] and Stohs and Mauer [21]. However, there is no significant evidence relationship is found between liquidity and long term debt.

## VI. CONCLUSION AND LIMITATIONS

This study investigates firm characteristic determinants of capital structure which is long term debt of SMEs in the northern corridor of Economic Region (NCER) in Malaysia. We have conducted the cross-sectional analysis of 15,323 SMES companies for only the year period of year 2007. The research findings of the study provide significant evidence that the larger the firm, the higher the SMEs to employ the amount of debt than small firms. Conversely, SMEs with higher profitability significantly to choose to finance less long term in their financing structure decision.

Moreover, we have observed in the data collection, more than half of 15,323 companies did not choose long term debt in their financial structure. In addition, the study also found that SMEs are intended to use more long term debts when the proportion of fixed asset in their companies is increased. The limitations can be addressed here are each variable is dictated by different measures used in previous studies which can lead inconsistent results and also the data period used is very short period. Thus, the findings of this study on the capital structure decision have important implications for policy makers and also entrepreneurs of SMEs in Malaysia.

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