THE COMPARISON OF CAPITAL STRUCTURE DETERMINANTS BETWEEN SMALL AND MEDIUM ENTERPRISES (SMEs) AND LARGE FIRMS IN MALAYSIA

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─Abstract─

The objective of the paper is to analyze the determinants of capital structure of firms, by comparing Small and Medium Enterprises (SMEs) and large firms. SMEs in Malaysia play a significant role in the national economy. However, contribution of Malaysian SMEs to economy is not up to the mark to selected benchmarking countries such as South Korea and Japan. One of major reasons is financial constraint. Given that the resource of financial assistance from government is limited, concentration has to be given to potential firms which are listed as Enterprise 50 (E50). E50 is a prestigious awards program to recognize the achievements of SMEs. Panel data analysis has been used to test the determinants of capital structure, indicated by the leverage ratio of the firms. The independent variables are asset tangibility, profitability, non-debt tax shield, liquidity, age and size. Evaluation is based on financial data of 285 firms consisting of 91 SMEs and 194 large firms for a period of 2004 till 2011. Trade Off and Pecking Order theory are discussed. The result shows that capital structure of SMEs and large firms are almost similar except in term of growth, liquidity and size. Growth is important for large firms. Liquidity is the critical factor for SMEs in determining short term debt, and size does matter to SMEs.

Key Words: *Capital Structure Determinants, SMEs, Panel Regression*

JEL Classification: G32

1. INTRODUCTION

The main motivation to conduct research related to Small and Medium Enterprises (SMEs) is on their significant economic contribution to the country. However, the development and expansion of sustainable SMEs is dependent on adequate financing and capitalization of the firms. Hence, to understand how firms finance their operations, it is necessary to examine the determinants of their financing or capital structure decisions. Capital structure has been defined as the combination of debt and equity used to finance the business operation (Brealey et al., 2012).

A capital structure decision reflects a wide range of management and company operation. Most of the previous studies focused on large listed firms due to the accessibility of data (Rajan and Zingales, 1995). Nevertheless, the scientific community has started to pay attention to SMEs as an object of the study. According to Ang (1991), it is important to conduct an empirical study on SMEs, as it is believe that the modern corporate finance theory was developed without small business in minds.

Therefore, the objective of this paper is to analyze the capital structure of SMEs in Malaysia by comparing the SMEs and large firms. The firms which have won Enterprise 50 (E50) awards have been chosen for the study. E50 is a prestigious annual awards program initiated by government of Malaysia since 1997 to recognize the achievements of SMEs. The rationale of choosing these firms is due to the fact that the number of SMEs is increasing every year, however the resource of financial assistance especially from the government is limited. Therefore, concentration has to be given to firms with a high potential to contribute to the national economic development (Shari and Endut, 1989). It is important to note that different countries have different definition of SMEs. This study used the standardized definition of SMEs set by the National SME Development Council of Malaysia (Malaysia, 2012).

2. THEORETICAL BACKGROUND AND HYPOTHESIS

2.1. Modigliani and Miller Theory (MM Theory)

MM theory assumes that there is a perfectly competitive market in which the company conducts its business without tax and without agency costs and all business related information are freely available (Modigliani and Miller, 1958).

Consequently, capital structure is irrelevant and the value of the firm depends on the asset's capability to generate profits. However, empirical evidence from the real business is different from the assumptions made by MM theory. In fact, Modigliani and Miller (1963) discuss the advantages of tax through debt financing. However, they still maintain the argument that capital structure has nothing to do with the value of the firm.

MM theory's arguments have triggered a further discussion and to deepen study on capital structure. The discussion developed further with an analysis of the tax shield through the income tax and its impact on the company and financial distress which occur due to the risk of bankruptcy (DeAngelo and Masulis, 1980). Capital structure is also influenced by non-debt tax shield, research and development expenses and advertising, and volatility of income (Bradley et al., 1984). Following the discourse on MM theory, two theories of capital structure emerged and often cited by researchers today, namely: (1) Trade-off Theory; and (2) Pecking Order Theory.

2.2. Trade-off Theory (TOT)

TOT agrees with MM theory that capital structure has nothing to do with the capital structure in a perfect capital market. However, TOT claimed that the existence of corporate tax and bankruptcy risk due to capital market imperfections affect the capital structure and thus the value of the company. Consequently, the optimal capital structure exists in the consideration of trade-off between the tax and the possibility of bankruptcy (Kraus and Litzenberger, 1973). Through consideration of trade-off, the company will borrow up to the point, where the tax savings from the additional debt is equal to the cost of financing in the event of financial difficulties. TOT assumes that the company will maneuver the benefits of debt by looking at the efficient market and symmetric information. Optimal capital structure is achieved when the tax savings are more than the cost of financial difficulties. TOT expects managers will think in the framework of the trade-off between tax savings and financial difficulties in determining the capital structure.

2.3. Pecking Order Theory (POT)

Myers and Majluf (1984) state that if a firm has a high level of profit, then the debt levels are low due to the excess sources of internal funds. Optimal capital

structure does not exist in the POT. Hence, the firm determines the source of capital according to sequence of hierarchy. The firm will choose to use internal sources of financing. Internal funds will be generated from the retain profit. If an external source of financing is required, then the firm will choose debt financing. Equity financing will be the last resort. POT does not indicate the target of optimal capital structure, however will show the preferences of financing.

2.4. Determinants of Capital Structure

Capital structure is affected by firm-specific characteristics which are represented by the different theoretical assumptions. This paper examines the capital structure as a Dependent Variable (DV). The DV is the leverage (LEV) or Total Debt Ratio (TDR) measured by Total Debts to Total Assets. Independent Variable (IV) or the determinants of capital structure that has been identified are: (1) asset tangibility; (2) profitability; (3) growth; (4) non debt tax shield (NDTS); (5) liquidity; (6) age; and (7) size. The hypotheses are summarized in Table 1.

Table 1: Hypothesis to be tested

DETERMINANTS	HYPOTHESIS RELATIONSHIP WITH LEVERAGE
Asset Tangibility (TANG)	+
Profitability (PRO)	-
Growth (GRO)	+
Non Debt Tax Shield (NDTS)	-
Liquidity (LIQ)	+
Age (AGE)	+
Size (SIZE)	+

Some authors argued that to get better understanding on leverage, Long Term Debt Ratio (LDR) measured by Long Term Debt to Total Assets and Short Term Debt Ratio (SDR) measured by Short Term Debt to Total Assets should be evaluated separately. Therefore, the extended hypothesis of the relationship between these variables with IV can be summarized in Table 2.

Table 2: Summary of hypothesis according to Long and Short Term Debt Ratio

DETERMINANTS	HYPOTHESIS		AUTHORS
	LDR	SDR	
TANG	+	-	(Chittenden et al., 1996; López-Gracia and Sogorb-Mira, 2008; Abor, 2008; Ramlall, 2009)
PRO	-	-	
GRO	-	+	
NDTS	-	-	(Chittenden et al., 1996; López-Gracia and Sogorb-Mira, 2008; Ramlall, 2009)

LIQ	-	-	(Ramlall, 2009)
AGE	+	+	(Chittenden et al., 1996; López-Gracia and
SIZE	+	-	Sogorb-Mira, 2008; Ramlall, 2009)

3. METHODOLOGY

Data were obtained from the Companies Commission of Malaysia. From 1998 until 2010, a total of 600 firms have been awarded the E50. However, only 285 firms have adequate financial information that can be used for analysis. The unbalanced panel data is for the period of 2004 to 2011. 2008 has been used as a reference year in categorizing the company according to their size, since this is the latest data available for all the 285 firms. Based on sales, 91 firms are categorized as SMES and the remaining 194 as large firms.

3.1. Model Specification

The model is derived on the basis of previous studies such as Titman and Wessels (1988):

$$LEV_{it} = \beta 0 + \beta 1TANG_{it} + \beta 2PRO_{it}i + \beta 3GRO_{it} + \beta 4NDTS_{it} + \beta 5LIQ_{it} + \beta 6AGE_{it} + \beta 7SIZE_{it} + U_{it}$$

Where $_{it}$ denotes the ratio of the firm *i* at time *t*. The operational definition for each variable is following Asmawi and Faridah (2012), summarized in Table 3.

Table 3: Operational definition

Variables	Operational Definition
Leverage (LEV) for LDR	Long Term Debt/Equity
LEV for SDR	Short Term Debt/Equity
Asset Tangibility (TANG)	Fixed Assets/Total Assets
Profitability (PRO)	Return on Assets
Growth (GRO)	Investment/ Total Assets
Non Debt Tax Shield (NDTS)	Depreciation/Total Assets
Liquidity (LIQUIDITY)	(Current Assets - Current Liabilities)/Revenues
Age (AGE)	From the date of incorporation until 2008
Size (SIZE)	Log of Sales

3.2. Panel Data Analysis

Panel data analysis is based on the data containing time series observations of the subjects. Subjects can be ranged from country, firm, and individual. In other word, panel data analysis is a combination of time series and cross sectional data analysis. Therefore, the quality and quantity of data has been enhanced and the

effectiveness of estimator has been improved (Forgues and Derumez, 2001). The data in this study was tested using GRETLE software, a free, general-purpose package for applied econometrics (Baiocchi & Distaso, 2003).

Before running the regression, multicollinearity problem was assessed using Pearson correlation method (Belsley et al., 1980). The analysis has adopted Random Effects (RE) model of panel data. To decide whether to use RE or Fixed Effect (FE) model, we need to test for whether the RE estimator is not biased (Kennedy, 2003:312). The RE model is recommended whenever it is unbiased i.e. whenever its composite error is uncorrelated with the explanatory variable. Therefore, to qualify, the Hausman specification test has to be done. The RE estimator is unbiased only if the null is true. The Hausman test tests the null by testing if the RE and FE estimators are insignificantly different from one another.

To check for heteroscedasticity present, Breusch-Pagan test has been carried out. The Breusch-Pagan test is designed to detect any linear form of heteroscedasticity. It tests whether the estimated variance of the residuals from a regression are dependent on the values of the independent variables. The data for this study has passed the test whereby the null hypothesis i.e. variance of the unit-specific error equal to zero (Baltagi, 2005; Hsiao, 2003).

4. RESULT

4.1. Descriptive Statistic

Table 4 presents the descriptive statistics. In term of long term debt the proportion between the group are about the same, however large firms appear to have the higher short-term debt ratios (0.103 for long-term and 11.710 for short-term debts), whereby SMEs (0.114 for long-term and 1.550 for short-term).

Table 4: Descriptive statistic dependent and explanatory variables

Variables	Mean		SD		Observation	
	SME	Large	SME	Large	SME	Large
LDR	0.114	0.103	0.161	0.137	728	1552
SDR	1.550	11.710	14.401	266.090	728	1552
TANG	0.347	0.311	0.249	0.211	728	1552
PRO	-0.178	-2.439	3.051	53.714	728	1552
GRO	0.037	0.030	0.132	0.0758	728	1552
NDTS	0.251	2.554	3.069	53.728	728	1552
LIQ	-3.313	1.187	46.170	23.562	728	1552
AGE	17.538	22.958	7.084	7.737	728	1552

SIZE	6.756	7.733	0.630	0.579	728	1552

In term of fixed assets in their total assets, SMEs recorded asset structure of 34.7% and large firms at 31.1%. As far as profitability is concerned, both group reported a loss particularly for the large firms. With respect to growth, intangible assets represent over 3% of total assets value for both groups. In term of liquidity, large firms have the sufficiency of 118% to meet it short term obligation. In contrast, SME indicated insufficient of working capital at 331%. The average ages of SMEs are 17 years and large firms 22 years. The mean of the natural logarithm of total assets over the period 2004-2011 indicates that the size of SMEs was approximately RM67.5 million for SMEs and RM77.3 million for large firms.

4.2. Regression

Table 5 presents the empirical results of regression analysis. The results of this study show significantly positive relationships between asset structure and long-term debt ratio among SMEs and large firms, but negative associations with short-term debt ratio among all the sample groups. It shows the importance of fixed assets as collateral in securing long-term debt. This means that firms with more fixed assets rely more on long term debt, while those with more current assets or fewer fixed assets depend more on short-term debt in financing their assets.

Table 5: Regression results

Variables	LDR		SDR	
	SME	**Large**	**SME**	**Large**
Constant	-0.133(-1.722)*	0.023(0.364)	1.010(5.369)***	0.537(5.645)***
TANG	0.192(5.752)***	0.216(9.205)***	-0.137(-1.705)*	-0.187(-5.373)***
PRO	0.023(0.976)	-0.037(-1.208)	0.211(3.682)***	-0.475(-11.368)***
GRO	0.023(0.347)	0.100(1.951)*	-0.115(-0.707)	-0.266(-3.712)***
NDTS	0.035(1.863)*	3.175(0.001)	0.616(13.715)***	0.040(14.219)***
LIQ	0.000(0.806)	3.075(0.218)	-0.004(-13.539)***	-0.000(-1.280)
AGE	-0.003(-1.939)*	-0.000(-0.794)	-0.004(-0.870)	-0.003(-2.237)**
SIZE	0.040(3.643)***	0.004(0.483)	-0.053(-2.018)**	0.012(1.046)
R-squared	0.639	0.491	0.876	0.707
F(95, 479) SME	8.950	5.310	35.714	13.320
F(200, 1100) Large				
Prob>F	0.000	0.000	0.000	0.000
Observation	575	1,301	575	1,301

Note:
Absolute value of t-statistics shown in parentheses: * statistical significance level at 5%; ** at 1%;

and *** at 0.1%.

Profitability is statistically significant only in the case of short-term debt, indicative of the fact that more lucrative firms resort to less usage of debt by relying more on internal funds. The growth variable is significant only for large firms. Negative relationship with the short term shows that, the large firms prefer debt financing for long term growth. In term of non-debt tax shield, both groups indicate important consideration on tax effects in their short term capital structure decisions. Long term debt of SMEs provide some limited evidence that tax considerations may become an important element in the longer term capital structure decisions in small businesses. Liquidity is very much important for SMEs particularly for the short term. The results reveal a statistically significant negative association between age and long-term debt ratio in the case of SMEs. In contrast, for a short term it is statistically significant for large firms. Nevertheless it shows that the number of years in business matters to secured financing. Finally, the size variable indicates the existence of scale effects in the gearing ratios for SMEs.

5. CONCLUSION

This study focuses on the determinants of the capital structure of firm in Malaysia by comparing the SMEs and large firms during the eight year period from 2004 - 2011. The firms which have won the Enterprise 50 awards have been chosen for the study. Overall, the determinants of capital structure between SMEs and large firms are almost similar except for growth, liquidity and size. The result shows that growth is important for large firms. Liquidity is the critical factor for SMEs in determining short term debt, and size does matter to SMEs. A firm's asset tangibility is the main capital structure determinants for SMEs and large firms. Profitability is critical determinant only for short term debt for both SMEs and large firms. Non debt tax shields also an important determinant but not for long term debt of large firms while age is an important factor for SMEs long term debt and large firm short term debt. In term of size, this factor is important for SMEs capital structure, however for large firms, industry type is significant in determining short term capital structure. Most of the results in this study are consistent with main theories in finance to explain capital structure within the firms i.e. The Pecking Order Theory and Trade-off Theory.

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