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Abstract

This study tests the determinants of capital structure for the firms listed in the Bursa Malaysia Securities Berhad (BMSB) market during the six year period from 2000 to 2005. The data derive from financial statements of 17 companies with numbers of observations totaling 102. We use dependent variable of debt ratio and is expressed by total debt divided by total assets while the independent variables are size, growth, liquidity and interest coverage ratio. Applying pooled OLS estimations, the result shows that the size, liquidity and interest coverage ratio is significantly negatively related to total debt. However, the study finds insignificant negative relation between capital structure and growth of the firm, expressed by the annual changes of earnings. Finally, the results of dummy variable show that there is significant different in capital structure among those firms that adopt more debt (more than 30 per cent of their total assets) and those who employ less leverage financing.

Keywords: Capital structure, firm characteristics, leverage financing, Bursa Malaysia.

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1. Introduction

Capital structure decisions are crucial for the financial wellbeing of the firm. Financial distress, liquidation and bankruptcy are the ultimate consequences lay ahead if any major misjudgment occurred following any financing decision of the firm's activity. Thus, firm with high leverage need to allocate an efficient mixture of capital that will finally reduce its cost. One of the strategies a firm should look into is to lower the weighted cost of capital. This will increase net economic return which eventually, increases the firm value. Hence, maximizing firm's value is the focal point for every financing decision made by the management of the company. The management of the firm operating in the very uncertain world has a tough task ahead in achieving the best capital structure. However the key to choose appropriate and acceptable level of financial leverage is still debatable by the top management of a firm. Many theories and empirical evidence in providing optimal capital structure exists in the real world. Yet, there is still cloudy area and with no specific guidelines to assist financial officers in attaining efficient mixture of debt and equity. Thus, only clues and calculated judgment plus some understanding of financial theory are possible tool to be applied in facilitating of how the financing mix does affect the firm's value and its stock price.

The first and foremost purpose of the present study is to determine the firm characteristics that affect capital structure. This will clarified the extent of optimal debt and equity used in financing the firms' activity in emerging market such as Malaysia. Thus, it is hoped that the present study will details and shed light on the Malaysian capital structure ambiguous area so that it can somehow lead the way for the financial manager in determine the right choices in capital structure's policy in the future.

The rest of the paper proceeds as follows. Section 2 is a review of various theories in capital structure. Section 3 describes the data, research methodology and the rationalize measurements of leverage choose to evaluate and analyze the determinants of capital structure. The empirical results and analysis are presented in Section 4, and the final section concludes the findings.

2. Literature Review

Theories of Capital Structure

Fifty years ago, Modigliani and Miller (1958) initiates the theory of capital structure in their influential seminal work on the effects of capital structure on the firm value. They demonstrate and finally conclude that the "capital structure is irrelevance" in a perfect financial market, considering no-tax case in the "pie model", which literally means that

firm's value, is independent of it financing or financial structure. They argue that the size of the pie does not depend on how it is sliced but depends only on the level and risk of its future cash flows. Modigliani and Miller (1963) even illustrate how firms should utilize 'all' debt financing because interest is deductible for tax purpose. This "tax shield" allows firms to pay lower taxes than they should if equity financing is used, thus attaining optimal capital structure through tax saving. Surprisingly, despite all the criticism and controversial issues arises from M&M proposition, empirical work by Hatfield, Cheng and Davidson (1994) support the M&M theorem.

As time moved and with recent development in corporate world, more researches have examined deeper the concept of capital structure. The trade-off theory of capital structure comes at a later stage which concerned about the corporate finance choices of firms is widely discussed. Its rationale is to describe the fact that firms are usually financed with some proportion of debt and equity. It proposed a principle that a firm's target leverage is driven by taxes shield, bankruptcy costs of debt and agency conflicts. Under trade-off theory, it affirms the advantages of using debt because the firm can gain tax shield with the usage of some proportion of debt in financing the company. Tax shield comes from the interest payment as a tax deductible item, which means that the higher the interest payment on debt employed, the lower the taxes will be paid by the firm. However, as companies decide to use more debt, it will put companies in the position of financial distress due to the possibility of the firm may be default in meeting its liabilities obligations. Financial distress will include bankruptcy and non bankruptcy cost. In conclusion, the trade-off theory suggests that optimal capital structure can be attained. However, firms should take appropriate actions in balancing between the tax benefits of higher debt and the greater possibility of financial distress costs while aiming to optimize its overall value. Early empirical evidence on the trade-off theory by Bradley, Jarrel and Kim (1984) reported mixed result. However, recent studies by Givoly, Hayn, Ofer and Sarig (1992), MacKie-Mason (1990) and Trezevent (1992) provides supporting evidence on trade-off theory

Agency cost is also an important issue in determining capital structure of a firm. It arises due to conflict of interest between shareholders and managers, or between shareholders and bondholders. Managers are given the authority by the shareholders to manage the firm, in assumption that managers will act in the interest of the firm's welfare and shareholders' benefits (Jensen and Meckling [1976]). Unfortunately, the opposite has happened in that conflicts arise when managers tend to act on their own interest that may be distorted from the firm's policy. They may make decision that will put firm at risk, which is differ from maximizing the value of the firm. Sometime, the managers are mainly interested in accomplished their own selfishness. They demand higher salaries, job security and other fringe benefits. Therefore, in tackling the conflict, owners should take prudent steps by periodic monitoring, supervising and controlling the workers and manager and normally is done by independent directors appointed by the board.

Debt is an effective tool to lessen the agency costs, and eventually optimal capital structure can be derived from the balance between the costs of debt against the benefits of debt. In viewing the conflicts between shareholders and bondholders, covenants will protect the bondholders' position so that they can mitigate the risk of default payment. However, the agency costs only arise when the risks of defaults payment exists. Even though the agency costs of debt is burdensome, but it is the solutions towards obtaining external funds at lower rate. The choice of capital structure brings signals to outside

investors the information of insiders. Ross (1977) assumes that managers (the insiders) know the true distribution of firm returns, but investors do not. If managers decide to add more debt into capital structure, investors interpret as a signal of high future cash flows and firm is committed towards its contractual obligation. Thus, this will shows higher level of confident the management has towards the firm's prospect in the near future. However, if managers decide to finance the firm by issuing new equity, it signals that management is lack of confident towards future prospect of the firm. Accordingly, he concludes that investors take larger levels of debt as a signal of higher quality and that profitability and leverage are thus positively related.

The Pecking Order theory was first initiated by Myers (1984) and Myers and Majluf (1984). The theory tries to capture the costs of asymmetric information and assumes management of the company knows more about the future prospects of the firms than do outsiders. It makes the announcement to issue debt or equity meaningful to outsiders as it is a signal of management prospects in the future. The market will give positive reaction if company starts to buyback it shares. To sum up, pecking order theory try to generate ideas that firm will use hierarchy of financing. Firstly, they will tend to use internal funds, otherwise, if not adequate, they will finance with external funds with debt. That will make equity for the last resort in financing the capital structure of the company.

International Evidence

Drobetz and Fix (2003), tests leverage predictions of the trade-off and pecking order models using Swiss data. At an aggregate level, leverage of Swiss firms is comparatively low, but the results depend crucially on the exact definition of leverage. Confirming the pecking order model but contradicting the trade-off model, more profitable firms use less leverage. Firms with more investment opportunities apply less leverage, which supports both the trade-off model and a complex version of the pecking order model. Leverage is very closely related to the tangibility of assets and the volatility of a firm's earnings. Finally, estimating a dynamic panel model, they find that Swiss firms tend to maintain target leverage ratio. Their findings are robust for several alternative estimation techniques.

Allen (1991) investigates the financial managers' perceptions of the broad determinants of listed Australian company capital structure decisions. The research method involves a series of field interviews undertaken with the company secretaries and senior financial personnel of 48 listed Australian companies. The results show that companies appear to follow a pecking order with respect to funding sources and also report policies of maintaining spare debt capacity.

Bevan and Danbolt (2004) analyze the determinants of the capital structure of 1,054 UK companies from 1991 to 1997, and the extent to which the influence of these determinants are affected by time-invariant firm-specific heterogeneity. Comparing the results of pooled OLS and fixed effects panel estimation, they find significant differences in the results. While their OLS results are generally consistent with prior literature, the results of their fixed effects panel estimation contradict many of the traditional theories of the determinants of corporate financial structure. This suggests that results of traditional studies may be biased owing to a failure to control for firm-specific, time-invariant heterogeneity.

Titman and Wessels (1988) investigate determinants of capital structure choice using data from United States from 1974 to 1982. They reported that debt levels are negatively related to the "uniqueness" of a firm's line of business. This evidence is consistent with the implications of Titman (1984) that firms can potentially impose high costs on their customers, workers, and suppliers in the event of liquidation have lower debt ratios. They conclude that transaction costs may be an important determinant of capital structure choice.

Malaysian Evidence

Pandey (2004) examines the relationship between capital structure and market structure using data from 208 Malaysian companies for the period from 1994 to 2000. It provides new insights into the way in which capital structure and market power and capital structure and profitability are related. Capital structure and market power, as measured by Tobin's Q, are shown to have a cubic relationship, due to the complex interaction of market conditions, agency problems and bankruptcy costs. The study finds a saucer-shaped relation between capital structure and profitability, due to the interplay of agency costs, costs of external financing and debt tax shield.

An empirical study analyzing the corporate finance and governance structure in Malaysia before and after the financial crisis of 1997, utilizing the agency cost approach is done by Sato (2002). The researcher link the corporate governance mechanism with the role of banks and corporate ownership structure taking into account the institutional framework and historical background of the Malaysian financial system. Based on the data for 375 non-financial KLSE listed companies during fiscal years 1995-99, the empirical result shows that the commitment of banks to finance corporate debt as well as lending obviously increased debt ratios. Ownership concentration mitigates conflict between managers and owners. Foreign ownership also contributed to a reduction in the agency costs of equity financing. However, increasing ownership by native Malays (Bumiputera), both the direct and indirect holding of corporate shares, played no significant role in disciplining corporate management. Finally, high dependency on debt led to excessive corporate investment before the crisis. These results imply that the concentration of risks on the banking sector and social policy advocating the dispersion of corporate ownership weakened the corporate governance mechanism, thereby exacerbating the distress of Malaysia's corporate sector during the financial crisis.

Pratomo and Ismail (2006), study the Islamic bank performance and capital structure based on 15 Malaysia Islamic Banks' Annual Report from 1997 until 2004. They consider the choice between debt and equity financing that has been directed to seek the optimal capital structure. Under the agency costs hypothesis, a high leverage tends to have an optimal capital structure and therefore it leads to produce a good performance, while the Modigliani-Miller theorem proves that it has no effect on the value of the firm. The importance of these issues has only motivated researches to examine the presence of agency costs in the non-financial firms. In financial firms, agency costs may also be particularly large because banks are by their very nature informationally opaque – holding private information on their loan customers and other credit counterparties. In addition, regulators that set minimums for equity capital and other types of regulatory capital in order to deter excessive risk taking and perhaps affecting agency cost hypothesis of Islamic Banks in Malaysia, under which high leverage firm tends to reduce agency costs. They set the profit efficiency of a bank as an

indicator of reducing agency costs and the ratio equity of a bank as an indicator of leverage. Their findings are consistent with the agency hypothesis. The higher leverage or a lower equity capital ratio is associated with higher profit efficiency.

3. Data and Methodology

The sample data use in the study is for the six year period from 2000 through 2005. The year 2000 is the start of the recovery year for Malaysian economy after the turbulent year of financial crisis in 1997. In order to avoid any distortion of the effects from the recent and current listing, the present study imposes two criteria on the sample so that it will not distort the results. The two criteria to be fulfilled by all companies included in the sample are that they must be listed in 1999 and none of them is expelled during the period of the study. The data used in the study are constructed from the financial statement of listed Malaysian firms derived from DATASTREAM database. Altogether, 20 companies are listed in 1999 for Main Board and Second Board (BMSB); however, after considering any missing data, only 17 companies with 102 numbers of observations are available for further analysis. The sample companies reflect, as mentioned above, the 85 per cent of the listed companies on the BMSB in 1999. Therefore, the sample studied comprises a major fraction of the listed firms in BMSB during the six-year-period of study.

Variables and What it Measures

It is quite common to define capital structure in terms of long-term debt ratio, especially in US. However, in a few countries, mostly in the emerging markets, companies use both short-term and long-term debt in financing their assets, including current assets. This common practice is also adopted by companies in developed countries. Thus, it is more appropriate to define capital structure as total debt ratio (TDR), in representing companies operates in Malaysia, one of the emerging countries in the world. The debt ratio is defined as the ratio of total debt divided by the total assets of the firm. In equation, it can be expressed as below:

$$\text{Debt Ratio (DR)} = \frac{\text{Total Debt}}{\text{Total Assets}}$$

Total debt contains both long-term and short-term liabilities. Total assets include all fixed assets and current assets. The debt ratio is employed to explain the amount of leverage being used by a company. A high percentage means that the company is too dependent on the leverage to finance its activity while low percentage represents otherwise. In general, the higher the ratio, the riskier the company position to be in default payment and subject to face financial distress and eventually bankruptcy.

Size of the firm is use as our second variable. Size can be justified as a potential explanatory variable of cross-sectional differences in leverage. Leverage increases with size because larger firms are better diversified in term of risk and gain better profitability compared to smaller firms. Larger firms are less likely to face possibility of financial distress and have lower expected bankruptcy costs. Thus, larger firms have lower

probability of default in meeting its liabilities obligations. As a result, lenders are more assured to give out loans to bigger firms. Besides that, these firms apply for larger amount of debt capital compare to smaller one. Therefore, larger firms can reduce its transaction costs incorporated with long-term debt and tend to get lower interest rate. Barclay & Smith (1995) figured out that large firms compared to small firms, are stable to carry a higher level of long-term debt because they can afford the high fixed costs of long-term debt. Since size is already proved as determinants of capital structure in the firms, we expect significant positive relationship between debt ratio and size of the firm. Size is proxied by sales (variable: ($SIZE_{i,t}$) and is being used by many authors include Eriotis, Vasilou and Neokosmidi (2007); Rajan and Zingales (1995); Sheel (1994); Lasfer 1995; Berger, Ofek & Yermack (1997). Previous studies show evidences supporting positive relationship between size and financial leverage level. [see Wald (1999); Marsh (1982); Bennet and Donnelly (1993); Warner (1977), Ang, Chua and Mc Connell (1982)].

The other dependent variable used is growth of the firm proxies by the annual change of net income (variable: $Growth_{i,t}$). The result is anticipate to be negative relationship between leverage and growth as indicates by Myers (1977); Eriotis, Vasilou and Neokosmidi (2007); and Myers and Majluf (1984). The equation is expressed as followings:

Annual Change in Net Income
e.g; Net Income$_{2001}$ – Net Income$_{2000}$

Since we previously considered short-term debt as a part of the debt ratio component, the study suggest liquidity ratio as another independent variable for this paper. Short-term debt employed by firms is expected to give big impact towards debt ratio. Moreover, liquidity of the firm is indicated by the short-term debt coverage. Thus, the study needs to take into consideration the relationship between the liquidity of the firm and its capital structure. Quick or acid test ratio (variable: $LIQ_{i,t}$), is used to represent liquidity ratio which calculated by current assets minus inventories divided by current liabilities. It is expressed as follows:

$$\text{Quick Ratio} = \frac{\text{Current Asset – Inventories}}{\text{Current Liabilities}}$$

The higher the ratios will indicates better position of liquidity a company has. High liquidity will ensure that the firm can meet its short-term obligation. We anticipate that there will be a negative relation between liquidity and the debt ratio. The fact that when a firm uses more current assets, it will means that it can generate internal inflows which can then use to finance its operating and investments activities. Therefore, if the negative relation is confirmed, there is an implication that firms finance their activities following the financing pattern implied by the "pecking order" theory.

Interest coverage ratio is another variable to be considered in this study. Following Eriotis, Vasilou and Neokosmidi (2007), the equation is expressed as net income before taxes divided by interest payment (variable: $INCOV_{i,t}$). The ratios can be calculated as expressed below:

$$\text{Interest Coverage Ratio} = \frac{\text{Net Income Before Tax}}{\text{Interest Payment}}$$

Harris and Raviv (1990) suggest that interest coverage ratio has negative correlation with leverage. They conclude that an increase in debt will increase default probability. Therefore, interest coverage ratio will acts as a proxy of default probability which means that a lower interest coverage ratio indicates a higher debt ratio.

Finally, the study distinguishes firm that maintain more than 30 per cent debt in its capital structure policy compared to the market as a whole. This is a measurement to isolate and figure out difference characteristics employed by those firms which represented by dummy variable, (variable: $DUMMYDR_{i,t}$). Therefore, to classify the differences made, dummy is set equal to one for firms which debt is more than 30 percent, while zero for firms that maintain debt less than 30 percent. The dummy variable is expected to provide estimation for the model used in order to describe the behavior of Malaysian market as a whole. It is anticipated to give information about the extra amount of leverage that those firms used as compared to the market as a whole.

4. The Model

In order to run the further analysis towards variables proposed as mention above, the study combines cross-sectional with time series data to become pooling data and formulate the characteristics of the market by employing pooling methods. The models enable the researchers to consider any kind of effect that cross-sectional may have since the models for the panel data are known as a powerful research tools to use. A general model that allows the researcher to empirically estimate the relation exists between dependent and independent variables with great flexibility formulate and distinguish the differences in the behavior of the cross-section elements that is theoretically expressed as below:

$$y_{it} = x'_{it}\beta + z'_{it}a + \varepsilon_{it}$$

where y_{it} is the dependent variable, x_i the matrix with the independent variables and z_i a matrix which comprise of a constant term and/ or a set of individual or specific group variable that depends on the sample, which may be observed or unobserved.

Furthermore, if in case where the original model of the matrix z includes only a constant term, the model can be estimated as a classical linear model. It will provide the researcher with unbiased coefficient matrix. Therefore, the method to execute the analysis is the pooled least square.

In this study, the hypothesis that will be tested is the total debt which can be view as a function of the size of the firm, its ability to meet its short term liabilities, the interest coverage ratio, the growth of the firm and the proportion of the extra debt equity less than 30 percent of the total assets as the dummy variable. We apply the pool data procedure in order to estimate the characteristics that will affect capital structure of Malaysian firms. The model specifications are as follows:

$$DR_{i,t} = \beta_0 + \beta_1 SIZE_{i,t} + \beta_2 LIQ_{i,t} + \beta_3 INCOV_{i,t} + \beta_4 GROWTH_{i,t} + \beta_5 DUMMYDR_{i,t} + \varepsilon_{i,t}$$

where:

$DR_{i,t}$ = the debt ratio of the firm i at time t,
$SIZE_{i,t}$ = the size of the firm i at time t,
$LIQ_{i,t}$ = the quick ratio of the firm i at time t,
$INCOV_{i,t}$ = the interest coverage ratio of the firm i at time t,
$GROWTH_{i,t}$ = the percentage change in earnings of the firm i at time t,
$DUMMYDR_{i,t}$ = the dummy variable for $DR_{i,t}$ *at time t-1 greater than 30 percent,*
$\varepsilon_{i,t}$ = the error term

4. Empirical Results

Descriptive Statistics

The descriptive statistics of all variables are reported in Table 1. The results of dependent variable, which is Debt Ratio (DR), exhibits the mean of Debt Ratio of all firms analyzed is 0.152866, with the variation of individual data set vary from the mean of 0.116394. The distribution of debt ratios shows that it is positively skewed and the kurtosis of -1.097 which represents the flatter tails of debt ratio's population. The independent variables denoted by SIZE, GROWTH, LIQUIDITY and INCOV (Interest coverage ratio) have means value of 12.11281, 0.487071, 2.3176 and 41.066318, respectively.

Table 1: Descriptive Statistics

Variables	Mean	Std. Deviation	Skewness	Kurtosis	Min.	Max.
DEBT RATIO (DR)	0.152866	0.116394	0.397	-1.097	0	0.4109
SIZE	12.11281	1.1077591	-0.227	-0.992	9.6913	13.9224
GROWTH	0.487071	8.643405	-0.85	-1.917	-11.1115	10.9521
LIQUIDITY (QR)	2.4176	6.31516	7.683	63.328	0.16	57.92
INCOV. RATIO	41.066318	122.2476	6.899	52.361	-22.92	1054.7225

Notes: Dependent Variable: DR

In order to isolate and figure out difference characteristics employed by those firms analyzed, the dummy variable of the debt ratios (DUMMYVAR) is taken into consideration. About 89.20% out of 17 sampled Malaysian firms with 102 numbers of observations for 6 year period use less than 30% debt in financing their activities. Meanwhile, the remaining firms or 10.80% firms use more than 30% debt. In addition, 13 out of 17 sampled Malaysian firms are completely maintaining the usage of debt financing less than 30% for 6 year period of 2000 to 2005. Whereas only 4 companies,

namely White Horse, Abric, Minply Holdings and Permaju Industries, are for a few years during the 6 years period of study use more than 30% debt ratio in financing its activities. Therefore, the result implies that most of Malaysian firms prefer to safeguard their control over companies by financing its operations with more equities compared to the usage of debt that exposed them to the fixed obligations toward creditors that have first claimant in the event of bankruptcy.

Regression

The study investigates the impact of independent variables on the dependent variable using OLS regression. Table 2 shows a significant negative impact of three independent variables (SIZE, LIQ and INCOV) on the debt ratio except for the GROWTH that have insignificant negative impact on debt ratio.

Table 2: The Effect of Independent Variables on the Dependent Variable

Variable	Coefficient	Std. error	*t*-statistic	Sig.
C	.678	.116	5.848*	.000
SIZE	-.041	.010	-4.334*	.000
GROWTH	1.18E-0.005	.001	.010	.992
LIQ	-.007	.002	-4.325*	.000
INCOV	.000	.000	-2.612*	.010
Weighted statistics				
R^2	.309	Mean dependent var.	.152866	
Adjusted R^2	.281	SD dependent var.	.1163940	
SE. of regression	.0987141	Sum squared resid.	.945	
***F*-statistic**	10.855	Durbin-Watson stat.	2.177	

Notes: Dependent variable; Debt Ratio (DR). * Significant at 5% level

Table 3 reports the regression results similar to that of table 2 but this time taken into consideration the dummy variable which differentiates between firms that maintain a debt ratio above 30 per cent with those firms that maintain less than 30 percent debt ratios. The results signifies that there is a significance differentiation in the capital structure characteristics employed by the firms that maintain a larger portion of debt ratio above than 30 per cent compared to those firm that maintain lower debt ratio of less than 30 per cent. The result also reveals that liquidity of a firm proxy by quick ratio is having the most significant effect on the debt ratios due to highest *t*-statistics of 3.946 compared to other independent variables.

On the basis the findings for both effects of independent variable either with or without dummy variable towards debt ratio, it illustrates one important point in that explanatory variables such as liquidity of the firm and interest coverage ratio are conformed with those of previous such as Eriotis, Vasilou and Neokosmidi (2007) and Harris and Raviv (1990). The negative relation of liquidity on the debt ratio of the firm is confirmed in that firms finance their activities following financing pattern as suggested by the "pecking order" theory.

Table 3: The Effect of Independent Variables on the Dependent Variable

Variable	Coefficient	Std. error	*t*-statistic	Sig.
C	.468	.103	4.543*	.000
SIZE	-.026	.008	-3.093*	.003
GROWTH	.000	.001	-.414	.680
LIQ	-.005	.001	-3.946*	.000
INCOV	.000	.000	-2.681*	.009
DUMMYDR	.180	.028	6.421*	.000
Weighted statistics				
R^2	.517	Mean dependent var.	.152866	
Adjusted R^2	.492	SD dependent var.	.1163940	
SE. of regression	.0829930	Sum squared resid.	.661	
***F*-statistic**	20.531			

Notes: Dependent variable; Debt Ratio (DR). * Significant at 5% level

5. Conclusions

For the past half century, the topic on capital structure has attracted intense debate in the financial management arena. The basic question always raised is whether there is a unique combination of debt and equity capital maximizes firm value, and if so, what factors determine a firm's optimal capital structure. While, most of the literature seeks the nature of relations between the capital structure and the firm specific characteristics in developed economies and developing countries, unfortunately, Malaysia as an emerging market, has actively been the subject of research in this field.

This paper aim is to examine the determinants of the capital structure for the firms listed in 1999 on the Bursa Malaysia Securities Berhad (BMSB) market during the six year period from 2000 - 2005. The data derive from financial statements of 17 companies with numbers of observations totaling 102. The dependent variable is debt ratio as expressed by total debt divided by total assets while the independent variables are size, growth, liquidity and interest coverage ratio. Base on the result, the size, measures by the sales figure is negatively related to total debt, suggesting that larger firms is less dependent on leverage financing compared to smaller firm. The reason could be that

larger firm employ equity financing or use it's retain earnings as a major source in its capital structure.

Similarly, the results between liquidity of the firms and its debt ratio show significant negative relationship. Liquidity of the firms is measured using quick ratio, showing the ability of the firm to deal with its short term liabilities. Firm with high liquidity tend to use less debt and provides an indication that firms generally finance their activities by following "pecking order" theory. Firm with high liquidity is able to generate high cash inflows and in turn, can employ the excess cash inflow to finance their operations and investment activities. Therefore, they use less debt compared to those firm that have low liquidity as suggested in "pecking order" theory. As for low liquidity firms, they tend to go for debt in financing their activities.

Besides that, the results of relationship between debt and interest coverage ratio which is expressed as net income before taxes divided by interest payment support the findings of previous studies. Firms that maintain high interest coverage ratio tend to employ less debt and this implies the ability of the firms to generate high earnings. Thus, negative relationship infers that firms probably use these earnings to finance their activities and use less leverage in its capital structure. Therefore, it implies that firms are following the pecking order financing.

However, the study finds insignificant negative relation between capital structure and growth of the firm, expressed by the annual changes of earnings. Finally, dummy variable shows that there is differentiation in capital structure among those firms that adopt more debt (more than 30 per cent of their total assets) and those employ less leverage financing.

In conclusion, the results almost consistent with previous study except for the findings of negative relation between size of Malaysian firm and its capital structure which denies the previous findings in other countries. Thus, the present findings represent unique characteristics of Malaysian firms' capital structure.

References

Allen, D.E. 1991, "The determinants of the capital structure of listed Australian companies: The financial manager's perspective", *Australian Journal of Management,* 16, 2.

Ang, J., Chua, J and McConnell, J. 1982, "The administrative costs of corporate bankruptcy: A note", *Journal of Finance,* 37, 219-26.

Bailey, R.E. 2007, "Corporate finance: The Modigliani-Miller theorems", *Economics of Financial Markets.*

Bancel, F. and Mittoo, U.R. 2002, "The determinants of capital structure choice: A survey of European firms", Working paper, Asper School of Business, University of Manitoba, Canada.

Bradley, M., Jarrel, G.A, and Kim, E.H., 1984, "On the existence of an optimal capital structure: Theory and evidence", *Journal of Finance,* 39, 857-878.

Bennet, M. and Donnelly, R. 1993, "The determinants of capital structure: some UK evidence", *British Accounting Review,*. 15, pp. 61-89.

Berens, J.L. and Cuny, C.J. 1995, "The capital structure puzzle revisited", *The Review of Financial Studies,* Winter,l. 8, 4, pp. 1185-1208.

Berger, P.G, Ofek, E.8c Yermacj, D.L. 1997, "Managerial entrenchment and capital structure decisions", *Journal of Finance,* 52(4): 1411-38.

Bevan, A.A. and Danbolt, J. 2004, "Testing for inconsistencies in the estimation of UK capital structure determinants", *Applied Financial Economics,* 14(1):pp. 55-66.

DeAngelo, H., Masulis, R.W., 1980, "Optimal capital structure under corporate and personal taxation", *Journal of Financial Economics*, 8, 3-30.

Drobetz, W and Fix, R (2003), "What are the determinants of the capital structure? Some evidence for Switzerland", Working Paper No.4/03, Department of Finance, University of Basel.

Eriotis, N., Vasilou, D. and Neokosmidi, Z.V., 2007, "How firm characteristics affect capital structure: an empirical study", *Managerial Finance*, 33, 5, pp. 321-331.

Givoly, D., Hayn, C., Ofer, A.R and Sarig, O., 1992, "Taxes and capital structure: Evidence from firms' response in the Tax Reform Act of 1986", *Review of Financial Studies",*5, 331-355.

Groth, J.C and Anderson, R.C. 1997, "Capital structure: Perspectives for managers", Management Decision 35/7 (1997) 552-561, MCB University Press.

Harris, M. and Raviv, A. 1990, "Capital structure and the informational role of debt", *The Journal of Finance,* 45, pp. 321-49.

Harris, M. and Raviv, A. 1991, "The theory of capital structure", *The Journal of Finance*, 46, 1, pp. 297-355.

Harvey, C.R.,Lins, K.V, and Roper, A.H, 2004, "The effect of capital structure when expected agency costs are extreme", *Journal of Financial Economics,* 74 pp. 3-30.

Hatfield, G.B, Cheng, L.T.W and Davidson, W.N. 1994, "The determination of optimal capital structure: the effect of firm and industry debt ratios on market value", *Journal of Financial and Strategic Decisions,* . 7, 3.

Jensen, M.C. & Meckling, W.H. 1976, "Theory of the firm: managerial behavior, agency costs and capital structure", *Journal of Financial Economics,* 3: 306-65.

Lasfer, M.A. 1995, "Agency costs, taxes and debt: UK evidence", *European Financial Management,* 1(3): 265-85.

Mackie-Mason, J.K., 1990, "Do taxes affect corporate financing decisions?" *Journal of Finance,* 45, 1471-1493.

Marsh, P., 1982, "The choice between equity and debt: An empirical study", *Journal of Finance,* 37, 121-44.

Miller, M.H., 1977, "Debt and taxes", *Journal of Finance,* 32, 261-275.

Miller, M.H. 1988, "The Modigliani-Miller propositions after thirty years", *Journal of Economic Perspectives,* 2, 4, pp. 99-120.

Modigliani, F. & Miller, M.H. 1963, "Corporate income taxes and the cost of capital: a correction", *American Economic Review*, 53, June, pp. 443-53.

Modigliani, F. & Miller, M.H.1958, "The cost of capital, corporate finance and the theory of investment", *American Economic Review,* 48, pp. 261-97.

Myers, S.C. 1984, "The capital structure *puzzle*", *Journal of Finance,* . 39 (3): pp. 575-92.

Myers, S.C. and Majluf, N.S. 1984, "Corporate financing and investment decisions when firms have information that investors do not have", *Journal of Financial Economics*, 13, pp. 187-221.

Pandey, I.M. 2004, "Capital Structure, profitability and market structure: evidence from Malaysia", *Asia Pacific Journal of Economics & Business,* 8, 2. pp.

Pratomo, W.A, Ismail, A.G (2006), "Islamic bank performance and capital structure", *MPRA Paper*, No. 6012, posted 29. November 2007/06:24.

Rajan, R.G and Zingales, L. 1995, "What do we know about capital structure? Some evidence from international data", *Journal of Finance*, 50, pp.1421-60.

Ross, S., 1977, "The determination of financial structure: The incentive signaling approach", *Bell Journal of Economics,* 8, 23-40.

Sato, M. 2002, " Capital structure and investment behavior of Malaysian firms in the 1990s – a study of corporate governance before the crisis", *CEI Working Paper Series* No. 2001-9, Institute of Economic Research, Hitotsubashi University, Japan.

Tang, C.H., Jang, S. 2007, "Revisit to the determinants of capital structure: A comparison between lodging firms and software firms", *Hospitality Management,* 26, pp. 175-187.

Titman, S and Wessels, R. 1988, "The determinants of capital structure choice", *The Journal of Finance*, 43, 1, pp. 1-19.

Trezevant, R., 1992, "Debt financing and tax status: Tests of the substitution effect and the tax exhaustion hypothesis using firms' responses to the Economic Recovery Tax Act of 1981", *Journal of Finance,* 47, 1557-1568.

Wald, J.K. 1999, "How firm characteristics affect capital structure: an international comparison", *Journal of Financial Research,* 22(2): 161-87.

Warner, J. 1977, "Bankruptcy costs: some evidence", *Journal of Finance*, Vol. 32, pp. 337-47.