CAPITAL STRUCTURE AND THE DETERMINANTS OF THE BANKING SECTOR: THE CASE OF MALAYSIA

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ABSTRACT

This paper examines the determinants of capital structure of commercial banks in Malaysia. The determinants include asset structure, growth, size, risk, profitability and tax shield, liquidity and efficiency. All the nine local commercial banks are considered in this study over the period 1998 to 2007. Econometrics methodology incorporates both time series and cross-sectional data to perform regression analyses that include the pooled effect, fixed effect and random effect methods. The findings indicate that the explanatory power of the determinants tends to differ on total leverage, long term leverage and short term leverage. Almost all the determinants are correlated with the banks' long-term leverage. It is evident that pecking order theory seems to be more applicable for the banking institutions.

Keywords—banks; capital structure; determinants

INTRODUCTION

Capital is a critical resource for all firms and capital structure accounts for corporate financing behavior [1]. Capital structure refers to the relative mix of debt and equity capital. Debt capital is an alternative source of funding to equity capital financing. Planning a firm's capital structure is a major part and a continual process of the firm that needs to be undertaken in the promotion, growth and mature stage of the firm's life cycle. [2] started the debate on whether capital structure decisions are important, and the consequent impact on the firm's cost of capital. Since then, many theories and research have been developed and carried out to explain the way in which a firm chooses its capital structure.

Firms create wealth by making successful investment decisions which generate positive net cash flows. On the other hand, capital structure decision or financing decision determines the balance or relative amount of debt and equity to finance a firm [3]. The understanding of firm characteristics is also essentially important to manage capital structure [4].

A. Overview of Local Commercial Banks in Malaysia

The current local anchor banks became nine in 2006 after Bumiputra-Commerce Bank Berhad merged with Southern Bank Berhad to form CIMB Bank Berhad. The nine anchor banks in Malaysia comprise of Affin Bank Berhad, Alliance Bank Malaysia Berhad, Ambank (M) Berhad, CIMB Bank Berhad, Eon Bank, Hong Leong Bank Berhad, Malayan Banking Berhad (Maybank), Public Bank Berhad and RHB Bank Berhad. Local commercial banks which are underlying on personal banking and business banking categories are governed by the Banking and Finance Institutions Act 1989.

RATIONALE OF THE STUDY

It is of great interest for many researchers to further explore the behaviourals or responses of banks with regard to their handling of debt levels. Unlike the

non-financial corporations, banks are expected to have different expectations in managing their debts as their major role is to connect the suppliers and demanders of funds in the financial markets. This empirical study is therefore able to offer more insights on the determinants of capital structure of banks. Specifically, signification of the determinants can be analysed in three dimensions, that include short term, long term and total debts.

OBJECTIVE OF THE STUDY

This study continues the effort of many researchers to further explore the capital structure issues in the financial sector. Hence, this study makes an attempt to examine the determinants of capital structure of local commercial banks in Malaysia.

LITERATURE REVIEW

Asset structure is argued to have a negative relationship with total leverage and short-term leverage, but it has the positive relationship with long-term leverage. Asset structure is the extent of the firm's assets that comprise of tangible asset (fixed asset) that can cause firms to have a liquidation value [5]. [6], [7] indicated that asset structure has a significant positive relationship with leverage. Their results showed that tangible assets are more valuable to creditor and consistent with the greater value of tangible assets as collateral. Their findings support the argument put forth by [8], [9] that firms with greater amounts of collateral value in their assets, (which usually are fixed assets as opposed to short term assets), tend to issue more debt to take advantage of the low cost. The low cost is experienced mainly due to the lenders perceiving their investments to be of lower risk as there is the added protection from the collateralized assets. Meanwhile, growth has a positive relationship with total leverage and short-term leverage, but has the negative relationship with the long-term leverage. Applying the pecking order theory, the growing firms will place a greater demand on their internally generated funds. Consequently, firms with higher greater growth will tend to look to external funds to finance the growth [5]. [10], [11], [6] found that growth had a negative relationship with leverage. Growth leads to higher agency costs, thus negative relationship is expected between growth and debt [12], [7]. These findings also consistent with other related studies by [13], [9], [14].

Many studies have suggested that there is a positive relationship between leverage and firm size. [15], [16], [17], [18], [19], [20] state that firm size should be positive impact on supply of debt and leverage. This is because larger firms are supposed to be less susceptible to bankruptcy as larger firms tend to be more diversified (business activities and income stream). Large firms hence are expected to experience lower volatility of earnings. In essence, the larger the firms, the higher the total and short-term leverage [5]. All forms of debt with the exception of long-term borrowings have a significant positive correlation with size. Larger and profitable firm with higher liquidity ratios might support a relatively higher debt ratio due to its greater ability to meet interest obligations [21].

[8], [9] pointed out the existence of a negative relationship between profitability and leverage. This is consistent with pecking order theory which argues that internal funding is preferable to external funding and that higher profitability will increase retained earning and reduces debt [6], [7], [11]. Banks have an incentive to employ more debt capital given that interest charges are tax deductible. Thus, successive tax increase would be associated with increasing debt capital. Therefore, his findings on total leverage and short-term leverage are consistent with the traditional capital structure theory on tax shield [5]. The increasing contingent claims does not fit the model of past due loans and show a negative relationship between tax shield and leverage [22][1].

[1] Firm initially prefers to use available internal finance to finance new projects. If this source proves insufficient the firm may then amend its dividend policy to generate additional internal fund and finally firm may only resort to external financing if the source proves inadequate to firm.

[8] S. C. Myers, "The capital structure puzzle," *The journal of finance,* vol. 39, pp. 574-592, 1984.

Firms that have higher operating risk, tend to face a greater chance to default and thus, they are exposed to the agency and bankruptcy cost. Total and long-term leverage have a negative relationship with the level of risk while the short-term leverage has a positive relationship with the risk [21]. If banks have high non performing loans, therefore, they face higher risk, and thus, have smaller capacity to face fixed interest commitments. This then causes them to lower their borrowings. Total leverage and long-term leverage have a negative relationship with the liquidity while the short-term leverage has the negative relationship with the liquidity. Banks that have higher liquidity ratios might support a relatively higher debt ratio due to its greater ability to meet interest obligations [21].

All forms of debts have a negative and highly significant correlation with efficiency. This shows that efficient banks with high interest margins will rely less on outside debt financing but may require short-term debts [21]. [2] were the first to raise issue of capital structure irrelevance in a prefect market. According to Modigliani-Miller (MM) theory, the tax exemption of interest payments is an important tax shield for debt financing. Besides that, depreciation is another major source of tax shield. This theory suggests that there are some other taxes such as income tax that can have effect on a firm's capital structure also. They argued that, under certain conditions, the choice between debt and equity does not affect firm value and hence, the decision is 'irrelevant'. These conditions included assumptions about the absence of taxes, negligible transaction costs in the capital market, and information asymmetry between various market players [23]. MM model relied upon two basic assumptions which included investment and financing decision being independent and that the value of the firm is unaffected by the type or the types of capital employed in its capital structure. Thus, they took taxation under consideration and using the tax deductibility of interest argument, proposed that firms should employ as much debt as possible to achieve the optimal capital structure. Pecking order theory explains on corporate financing decisions. There is trade-off between equity and debt in finance industry and no optimum debt level for a firm. Firms prefer internal sources better than external sources.1 In addition, higher return of capital tends to lead to greater exposure to the risk associated with the information asymmetries for the various financing choices. Thus, the firm will prefer retained earnings financing to debt, short-term debt over long-term debt and debt over equity. According to [8] managers have superior information than investors concerning the value of the firm under alternative investment strategies. In other word, they derive a pecking order theory of capital structure under asymmetric information. [2]

Developing further on non-debt tax shield, [25] argue that there exist several forms of non-debt tax shields, for e.g. depreciation expenses or capital allowances and investment tax credits. This then reduces a firm's capacity of debt tax benefit. Non-debt tax shields hence has a negative relationship on a firm's optimal debt level, that is firms with large non-debt tax shields tend to have relatively less debt in their capital structure.

Companies can reduce leverage when they are mature and profitable but this is not conclusive. Financial success is correlated with the changes in the debts [26]. Signaling hypothesis showed that pecking order theory is quite relevant for financial managers and static trade-off theory is the need to balance gains and costs of debt financing as stated by [8]. In order to achieve optimal capital structure, static trade-off theory argues that firms will choose the equity and debt financing to balance the costs and benefits of debt. According to the static trade-off theory, firms are usually choosing their level of debt financing by trading off these bankruptcy costs and agency costs of debt against tax benefit of debt. In particular, a firm that is trying to maximize the value for its shareholders will equalize the marginal cost of debt that results from these bankruptcy costs with the marginal benefit of debt that results from tax benefits.

[2] Information asymmetries exist before debt issuance and extend through repayment, creating adverse selection and moral hazard problems that raise the interest rates charged by lenders stated by [24] S. A. Johnson, "The effect of bank debt on optimal capital structure," *Financial Management*, pp. 47-56, 1998.

The tax benefits are created as the interest payments associated with debt are tax deductible while payment associated with equity such as dividends are appropriated from profit. The issuing of debts increase the financial distress and associate cost of firms. According to signaling theory, investors know the operation of firms and try to interpret the decision making of firms [27]. [28] explain how agency theory may be applied to determine an optimal capital structure of the firm which minimizes total agency costs of debt and equity. [3]

METHODS AND PROCEDURES

This study is specially designed to examine the factors that determine the capital structure of the banking institutions in Malaysia. The factors tested in this paper are as follows; asset structure, growth, size, risk, profitability and tax shield, liquidity and efficiency. All the nine local banks in Malaysia: Maybank, Public Bank, Alliance Bank, Affin Bank, Ambank, CIMB Bank, Eon Bank, Hong Leong Bank and RHB Bank were taken into consideration and the data were collected over a period of ten years (1998-2007). The data were obtained from Bankscope and Osiris (financial databases). The entire population of local commercial banks were considered for the study.

A. Hypotheses

The following hypotheses are proposed;

Hypothesis 1:
Total leverage is significantly impacted by the determinants of capital structure.

Hypothesis 2:
Long-term leverage is significantly impacted by the determinants of capital structure.

Hypothesis 3:
Short-term leverage is significantly impacted by the determinants of capital structure.

Specifically, a set of non-directional hypotheses involving each of the determinants of capital structure can constructed to predict total leverage, long term leverage and short term leverage. The hypotheses are as follows;

H1: There is a significant relationship between asset structure and debt.

H2: There is a significant relationship between growth and debt.

H3: There is a significant relationship between size and debt.

H4: There is a significant relationship between profitability and debt.

H5: There is a significant relationship between non-debt tax shield and debt.

H6: There is a significant relationship between risk and debt.

H7: There is a significant relationship between liquidity and debt.

B. Econometrics Methodology

a) Panel Data Modeling: Panel data incorporate both time series and cross-sectional data. Panel data analysis allows identification of parameters without making any restrictive assumptions [29]. Panel data have space and as well as time dimensions [30]. Baltagi clarifies that when firms are considered over time, panel data tend to include heterogeneity; more informative data, more variability, less collinearity (among variables), more degrees of freedom, more efficiency; dynamics of change; larger sample size and thus, bias is minimized.

Let us say all variables have cross-sectional units

[3] They noted three components of the agency costs of debt which are adverse incentive effects associated with highly levered firms, monitoring costs generated by theses incentive effects and bankruptcy cost. [28] M. C. Jensen and W. H. Meckling, *Theory of the firm: Managerial behavior, agency costs, and ownership structure:* Springer, 1979.

(referring companies- i.e. banks), thus, i = 1,2,3,…N and time period, thus, t = 1,2,3,…T. Therefore, the standard linear model is as follows;

$y_{it} = \beta_0 + x_{it}\beta + \varepsilon_{it}$; x_{it} are the predictors and β_0 and β represent intercept and slope coefficients are identical for all firms and time periods, ε_{it} is the error term and y_{it} is the dependent variable. In addition, panel data model assumes; $\varepsilon_{it} = a_i + \mu_{it}$ and μ_{it} denotes that homoskedasticity is assumed and not correlated over time a_i is time variant and homoskedasticity is assumed across firms. The above model is also regarded as **random effect model** [29], [30].

In the case of **fixed effect model**, includes an individual firm-specific intercept term in the model as given below; $y_{it} = a_i + x_{it}\beta + \mu_{it}$; y_{it} is the regressand, a_i (i = 1,2.3,…N) are fixed unknown constants that are estimated along with β and μ_{it} is assumed to be i.i.d over individuals and time. The overall intercept term β_0 is dropped. In addition, Hausman Test and Redundant Fixed Effect Test were specially adopted in determining the most appropriate model (either pooled effect, fixed effect or random effect model) as presented in the findings section.

C. Measures

Three multiple regression models were adopted to examine the determinants of total leverage, long term leverage and short term leverage. Each dependent variable was tested using the above hypotheses using the econometrics methodology. Three regression models were considered representing three dependent variables; total leverage, long term leverage and short term leverage. As the analysis involved both cross-sectional and time series data, the adoption of the pooled, fixed and random effects were then applied for robust discussions. The details of the models and measures are as follows; General form of panel data: Yi,t = α + βXi,t + ëi,t ; i = cross-sectional dimension, t= time-series dimension, Yi,t= dependent variable, Xi,t= independent variable, ë= error term.

Models

$$TL_{i,t} = \beta_0 + \beta_1 AS_{i,t} + \beta_2 GROW_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 PROF_{i,t} + \beta_5 TAXS_{i,t} + \beta_6 RISK_{i,t} + \beta_7 LIQ_{i,t} + \beta_8 EFF_{i,t} + ë \quad \text{.....Eq 1}$$

$$LTL_{i,t} = \beta_0 + \beta_1 AS_{i,t} + \beta_2 GROW_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 PROF_{i,t} + \beta_5 TAXS_{i,t} + \beta_6 RISK_{i,t} + \beta_7 LIQ_{i,t} + \beta_8 EFF_{i,t} + ë \quad \text{.....Eq 2}$$

$$STL_{i,t} = \beta_0 + \beta_1 AS_{i,t} + \beta_2 GROW_{i,t} + \beta_3 SIZE_{i,t} + \beta_4 PROF_{i,t} + \beta_5 TAXS_{i,t} + \beta_6 RISK_{i,t} + \beta_7 LIQ_{i,t} + \beta_8 EFF_{i,t} + ë \quad \text{.....Eq 3}$$

$TL_{i,t}$ (Total Leverage) = Total Debt / Total Asset,
$LTL_{i,t}$ (Long-term Leverage) = Long–term debt / Total Asset,
$STL_{i,t}$ (Short-term Leverage) = Short term debt / Total Asset,
Asset Structure (AS) = Fixed Assets / Total Assets,
Growth (GROW) = % change in total assets,
Size (SIZE) = Logarithm of total assets,
Profitability (PROF) = Operating Income / Total assets,
Tax Shield (TAXS) = Depreciation & Amortization / Total Assets,
Risk (RISK) = Standard deviation of profit before tax,
Liquidity (LIQ) = Liquid Assets / Total Assets,
Efficiency (EFF) = Net Interest Revenue / Total Assets
[5], [31],[32], [12], [3], [33], [34], [35], [36], [37], [38], [24], [21].

FINDINGS AND DISCUSSIONS

TABLE I provides a summary of the descriptive statistics of the dependent variables (total leverage, short-term leverage and long-term leverage) and independent variables (asset structure, growth, size, profitability, tax shield, risk, liquidity and efficiency). The mean, median, maximum and minimum of each variable are shown in the table.

TABLE I: Descriptive Statistics For The Dependent Variables And Independent Variables

Variable	Mean	Median	Minimum	Maximum
Leverage	0.9210	0.9219	0.8562	0.9714
Short-term Leverage	0.8357	0.8321	0.7683	0.9117
Long-term Leverage	0.0852	0.0852	0.0266	0.1709
Asset Structure	0.0085	0.0074	0.0027	0.0209
Growth	0.1337	0.0831	-0.1515	2.1108
Size	4.6563	4.6348	3.9600	5.4094
Profitability	0.0092	0.0100	-0.0477	0.0279
Tax Shield	0.0002	0.0000	0.0000	0.0025
Risk	318.9815	239.5204	40.2537	1154.3066
Liquidity	0.2197	0.2049	0.1164	0.4224
Efficiency	0.0255	0.0256	0.0112	0.0380

Figure 1 shows the total, short term and long leverage of the local commercial banks in Malaysia over the period 1998 to 2007. Long term leverage of the banks seemed to vary from year to year. Though generally they showed an upward trend towards 2007, however, Affin, Ambank and CIMB registered a downward trend in their long term leverage.

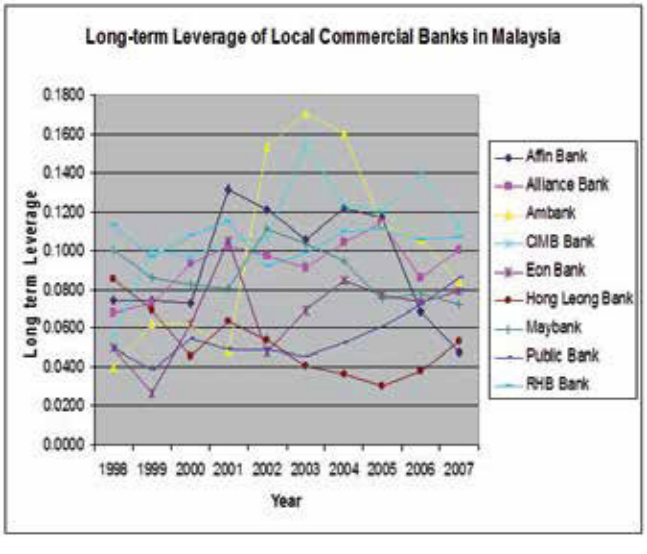

Figure 1: Long Term Leverage of Local Commercial Banks in Malaysia

In terms of risk (changes in profit before tax), generally, banks managed to stabilize their earnings after the 1997 financial crisis (Figure 2). However, Maybank, Public banks and CIMB registered a drastic increase in relation to their risk profile related to earnings as shown in Figure 2. Nonetheless, starting from year 2000, the banking industry started experiencing a more stable earnings. Efficiency measure (proxy of interest revenue of total asset) indicated that there was a downward trend in the banking industry till 2007 (Figure 3).

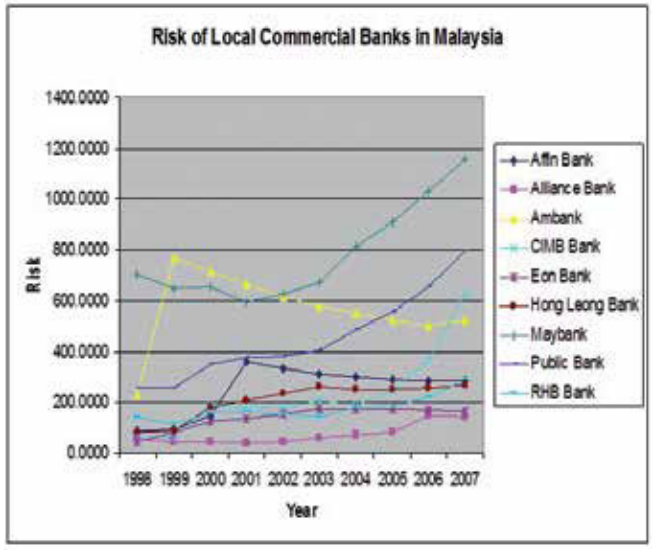

Figure 2: Risk Profile of Local Commercial Banks in Malaysia

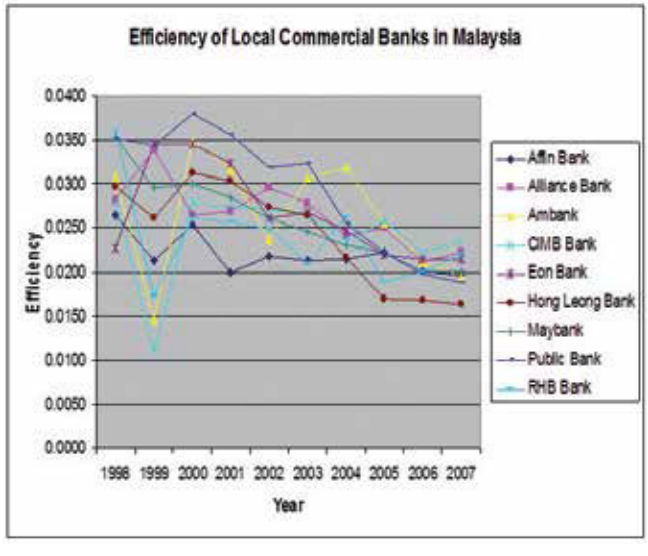

Figure 3: Efficiency of Local Commercial Banks in Malaysia

TABLE II: Bivariate Correlation Matrix (Pooled Data)

Variables	1	2	3	4	5	6	7	8	9	10	11
1.Total leverage	1	**0.2435***	**0.3848****	**-0.4615****	0.1030	0.0139	**-0.4865****	-0.0453	0.1629	**0.2106***	**-0.4066****
2.S-Term leverage		1	**-0.8015****	**-0.3990****	0.0066	-0.1158	-0.0940	-0.1022	0.0397	**0.5913****	-0.1235
3.L-Term leverage			1	0.0951	0.0573	0.1188	**-0.2106***	0.0693	0.0626	**-0.4329****	-0.1333
4.Asset structure				1	-0.0722	-0.1612	0.0172	-0.0407	-0.0583	**-0.2667***	**0.2773****
5.Growth					1	0.1401	0.0178	-0.0871	-0.0648	0.0721	**-0.3026****
6.Size						1	**0.3266****	-0.0027	**0.6675****	-0.0174	**-0.2234***
7.Profit							1	0.0493	0.1353	-0.0795	**0.3718****
8.Tax shield								1	0.0375	-0.0107	-0.1681
9.Risk									1	0.0332	-0.0911
10.Liqiudity										1	**-0.2691***
11.Efficiency											**1**

*** p < 0.05, ** p < 0.01**

TABLE II above shows bivariate correlation results involving all the variables considered for modeling. The significant correlation between total leverage, short-term leverage and long-term leverage (at 0.01 significance level) indicate consistency of the data series and measures used in the study. Asset structure registered a significant negative correlation with total leverage and short-term leverage (-0.4615 and -0.3990 respectively) at 0.01. Significant correlations were also recorded among the determinants of capital structure at 0.05 and 0.01 significance level (in bold).

TABLE III: Regression Results On Pooled Effect, Fixed Effect And Random Effect

Variables	Total Leverage (Model 1)			Long-term Leverage (Model 2)			Short-term Leverage (Model 3)		
	Pooled	Fixed	Random	Pooled	Fixed	Random	Pooled	Fixed	Random
Constant	**0.9872*****	**0.7898*****	**0.9872*****	0.0776	**-0.3893*****	**0.0776***	**0.9097*****	**1.1791*****	**0.9097*****
Asset Structure	**-1.9356***** **(-5.0119)**	-0.9312 (-1.5276)	**-1.9356***** **(-5.9624)**	0.2855 0.3841	**3.7576***** **(4.2188)**	0.2855 (0.6019)	**-2.2203***** **(-3.5936)**	**-4.6879***** **(-5.2349)**	**-2.2203***** **(-4.6557)**
Growth	0.0058 (0.8793)	**0.0104*** **(1.7369)**	0.0058 (1.0461)	0.0058 0.4554	**0.0165*** **(1.8938)**	0.0058 (0.7136)	1.68E-05 (0.0016)	-0.0062 (-0.7011)	1.68E-05 0.0021
Size	-0.0085 (-1.1942)	**0.0277**** **(2.0930)**	-0.0085 (-1.4207)	0.0175 1.2736	**0.0905***** **(4.6828)**	**0.0175**** **1.9956**	**-0.0260**** **(-2.2778)**	**-0.0628***** **(-3.2326)**	**-0.0260***** **-2.9509**
Profitability	**-0.7772***** **(-4.2706)**	**-0.6780***** **(-3.9722)**	**-0.7772***** **(-5.0805)**	-0.8210 -2.3442	**-0.4332*** **(-1.7270)**	**-0.8210***** **(-3.6731)**	0.0438 (0.1505)	-0.2540 (-0.9771)	0.0438 (0.1950)
Tax Shield	-2.8248 (-0.8249)	-0.3057 (-0.0963)	-2.8248 (-0.9814)	4.5567 0.6914	**13.7939***** **(2.9738)**	4.5565 (1.0834)	-7.3812 (-1.3474)	**-14.1007***** **(-3.0236)**	**-7.3812*** **(-1.7456)**
Risk	**2.22E-05***** **(2.6440)**	1.61E-05 (1.1235)	**2.22E-05***** **3.1454**	-2.13E-06 -0.1315	**3.59E-05*** **(1.7136)**	-2.13E-06 (-0.2061)	**2.43E-05*** **(1.8099)**	-1.98E-05 -0.9386	**2.43E-05**** **(2.3448)**
Liquidity	0.0042 (0.1532)	0.0109 (0.3655)	0.0042 (0.1822)	**-0.2478***** **-4.7158**	**-0.1561***** **(-3.5930)**	**-0.2478***** **(-7.3892)**	**0.2519***** **(5.7664)**	**0.1669***** **3.8199**	**0.2519***** **7.4707**
Efficiency	-0.4405 (-1.1867)	0.3011 (0.7154)	-0.4405 (-1.4118)	-0.5856 -0.8201	**1.7054***** **(2.7736)**	-0.5857 (-1.2850)	0.1443 (0.2430)	**-1.4050*** **-2.2727**	0.1443 (0.3149)
Adjusted R^2 (%)	45.97	61.82	45.97	23.91	69.01	23.91	41.92	65.39	41.92
Redundant FE/ RE		**40.6178*****			**90.1950*****			**55.9690*****	
Hausman Test			**41.6368*****			**125.8650*****			**62.9568*****
F-Test	**10.4637*****	**10.0068*****	**10.4637*****	**4.4960*****	**13.3857*****	**4.4960*****	**9.0282*****	**11.5117*****	**9.0283*****

*** sig at 0.10, ** sig at 0.05, *** sig at 0.01, t-test results are given in parentheses**

TABLE III shows the regression results of the three models (as given by Eq 1, 2 and 3) that examine the determinants of capital structure using the total leverage, long term leverage and short term leverage as dependant variables. Each model was derived based on the pooled effect (PE), fixed effect (FE) and random effect (RE) methods. The Hausman and Redundant FE/RE tests were employed to test the applicability of the FE and RE methods. Thus, the RE method is to be rejected in favour of the FE method at significance level 0.01 and this applies to all the three models as given in TABLE III.

Based on the results in TABLE III, long term borrowing is found to have a significant positive relationship with the banks' tangible assets. This is consistent with the findings for non financial firms by [6], [7], indicates that leverage of firms is positively related with asset structure. Growth is seen to have a low level of significance in relation to the total leverage and long term leverage (at 0.10) of the banks. However, the negative relationship result appears to differ from the argument in the literature in the case of non-financial firms by [11], [12], [6]. Thus, agency cost is expected to be mitigated by the increase in total and long term debts.

Bank size is found to be positively correlated with long term borrowings but negatively correlated with short term borrowings. Understandably, larger banks are able to diversify their risk and thus, are less likely to face financial distress. Therefore, we expect a positive relationship between bank size and their debts. However, larger banks tend to reduce their short term leverage and this could be due to cost effectiveness of borrowing. Also, the negative correlation between profitability and total and long term leverage reinforces the adoption of pecking order theory by the banking institutions at significance level 0.10.

Meanwhile, the relevance of tax shield remains arguable for long term leverage as we expect to have a negative relationship between the two. Tax shield obtained from depreciation is expected to be a substitute to tax saving from borrowing, thus the larger the depreciation, the lower the debts will be. Such negative relationship was found between non debt tax shield and both total short term leverage. Perhaps, the service sector (banking) does not get optimal trade-off through the use of depreciation as fixed tangible assets are not the main component of the total assets for value creation. Instead, banks derive their profits from financial instruments, in the forms of loans to customers (long and short term) and investments in financial products. As a result, this phenomenon drives banking institutions to strive for greater tax saving via long term borrowing.

We expect borrowing to be a decreasing function of risk (earnings volatility). It seemed that risk factor could push banks for higher long term leverage. This could be argued that as banks' operations (size) increase, their risk diversification becomes more efficient and thus, they could go for higher debts. As for liquidity, it is very much emphasized for the short term leverage and conversely, greater liquidity would lower the long term leverage. Once again, this is in line with the matching principle as liquidity of banks refers to the short term assets and this should be matched by short term financing. Also, the banks assets comprise mainly of cash and near cash items (that is assets that must be easily converted to cash easily). Finally, banks' efficiency is essentially important for their long term leverage. Adjusted R squared is in the range of 60 to 70 per cent (FE method) and the F-test is very significant for the models at 0.01.

Admittedly, the most influential factors on total leverage of banks are profitability, followed by size and growth. The other factors were noted to be insignificant based on the FE method. On the other hand, when total leverage is decomposed into short term and long term leverage, the outcome is different. In the case of short term leverage, the important factors influencing the capital structure of banks are asset structure, liquidity, size and tax shield. For long term leverage, all factors were noted to be significant with the most significant factor is firmsize.

CONCLUSIONS

The empirical findings as presented above conclude that hypothesis testing on long term and short term leverage is partially supported, but strongly supported on the long term leverage though the directions of the hypotheses have differed. Obviously, growth and non-debt tax shield are expected to be negatively

correlated with debt level, thus these findings seem to be contradictory. The summary of the results are given in TABLE IV below.

TABLE IV: Summary Of The Regression Results

Dependent Variables / Coefficient & Significant relationship	Total Leverage	Short-term Leverage	Long-term Leverage
Positive correlated and significant relationship	Risk	Risk Liquidity	
Positive correlated and insignificant relationship	Growth Liquidity	Growth Profitability Efficiency	Asset structure Growth Size Tax shield
Negative correlated and significant relationship	Asset Structure Profitability	Asset structure Size	Profitability Liquidity
Negative correlated and insignificant relationship	Size Tax shield Efficiency	Tax shield	Risk Efficiency

It was noted that all the determinants of capital structure of the banks registered a significant impact on the long term leverage. These findings are essentially important in our discussion as the long term debt component is the magnifier of firm capital structure. Greater asset structure, tax shield and efficiency are regarded as the important requirements for increasing long term borrowing. Interestingly, greater liquidity helps banks to lower their long term leverage but however, it also appears as an important requirement for their short term leverage. It should be noted that banks are also pressured to hold sufficient fixed assets as collateral for their long term borrowing as any other non-financial firms. Specifically, banks' financing strategy can also be identified here. The negative correlation between profitability and borrowing is indicating that they still remain conservative where their internal funds are still the main source of financing (pecking order theory).

However, the banking institutions tend to show a different pattern of relationship with regard to tax shield and risk factor and their influence on borrowing. Clearly, tax shield from depreciation may not be a good substitute to tax saving from borrowing in the case of banking industry. Also, increasing risk resulting from volatility of earnings in the banking industry could be just a temporary effect for most banks and thus, higher borrowing will be anticipated for cost saving. Lastly, it should be noted that the most important factors affecting total leverage, long term leverage and short term leverage of Malaysian banks are profitability, size and asset structure.

LIMITATIONS

Some limitations must be addressed here, each variable is dictated by different measures as given in the literature and thus, may result in inconsistent results and interpretations. For instance, firm size can be measured by total asset, total sales, total market capitalization, etc). Different accounting policies and practices tend to result in different figures in the financial statements and therefore to have different implications. These differences however were not vividly shown or explained in the data set collected. In addition, inferential studies based on relatively smaller populations will be a great challenge for many researchers.

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