

Capital Structure Effect on Firms Performance: Focusing on Consumers and Industrials Sectors on Malaysian Firms

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This study seeks to investigate the impact of capital structure on firm performance by analyzing the relationship between operating performance of Malaysian firms, measured by return on asset (ROA) and return on equity (ROE) with short-term debt (STD), long-term debt (LTD) and total debt (TD). Four variables found by most literature to have an influence on firm operating performance, namely, size, asset grow, sales grow and efficiency, are used as control variables. This study covers two major sectors in Malaysian equity market which are the consumers and industrials sectors. 58 firms were identified as the sample firms and financial data from the year 2005 through 2010 are used as observations for this study, resulting in a total numbers of observations of 358. A series of regression analysis were executed for each model. Lag values for the proxies were also used to replace the non lag values in order to ensure that any extended effect of capital structure on firm performance is also examined. The study finds that only STD and TD have significant relationship with ROA while ROE has significant on each of debt level. However, the analysis with lagged values shows that non of lagged values for STD, TD and LTD has significant relationship with performance.

1. Introduction

Capital structure decision is the mix of debt and equity that a company uses to finance its business (Damodaran, 2001). Hence, the relationship between capital structure decisions and firm value has been extensively investigated in the past few decades. Modigliani and Miller (1958) suggested that, in a world without friction, there is no difference between debt and equity financing as regards the value of the firms. Thus, financing decision add no value and are therefore of no concern to the managers. Evidence would suggest that this does not hold in reality. However, today, capital structure is one of the important financial decisions for any business organization. This decision is important because the organization need to maximize return to various organization' and also have an effect on the value of the firm.

Besides that, the impact from the decision will help the firm's ability to deal with its competitive environment. Furthermore, the capital structure of a firm is a mix of debt and equity that is used by a firm to enhance its operation. Thus, a firm's specific strategy should deal with the appropriate mix of debt and equity to finance the firm's assets.

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Capital structure decisions represent another important financial decision of a business organization apart from investment decisions. It is important since it involves a huge amount of money and has long-term implications on the firms. Though Miller and Modigliani (1958) have theoretically argued and proved that capital structure is irrelevant in a perfect market condition, characterized by the capital market with no taxes, no transaction costs and homogenous expectations, other works that assume several market imperfections on the contrary suggest that capital structure decisions are relevant since it can affect shareholders wealth. Modigliani and Miller (1963) in considering of the existence of corporate taxes suggested that firms should use as much debt capital as possible in order to maximize their value by maximizing the interest tax shield.

Other theories that have been advanced to explain the capital structure of firms include the pecking order theory, static tradeoff theory, and the agency cost theory. Pecking order theory suggests that firms will initially rely on internally generated funds, and then they will turn to debt if additional funds are needed and finally they will issue equity to cover any remaining. Thus, according to the pecking order hypothesis, firms that are profitable and therefore generate high earnings are expected to use less debt capital than those who do not generate high earnings. Hence, internal funds are used first, and when that is depleted, debt is issued, and when it is not sensible to issue any more debt, equity is issued (Myers and Majluf, 1984).

Agency costs are the costs that arise from the principal-stakeholder relationship, such as between shareholders or managers of the firm and debt-holders. Moreover, the given incentives to the firm will benefit shareholders at the expense of debt-holders. Thus, debt-holders need to restrict and monitor the firm's behaviour. Consequently, costly monitoring devices of contractual covenants are incorporated into debt agreements to protect the debt-holders. Hence, it should increase the cost of capital offered to the firm. Therefore, firms with relatively higher agency costs due to inherent conflicts between the firm and the debt-holders should have lower levels of outside debt financing and leverage.

Furthermore, according to Gleason et al. (2000), the utilization of different levels of debt and equity in the firm's capital structure is one such firm-specific strategy used by managers in the search for improved performance. Hence, most firms have strived to achieve an optimal capital structure in order to minimize the cost of capital or to maximize the firm value, thereby improving its competitive advantage in the marketplace through a mixture of debt and equity financing. Thus, selecting the right type of debt is an equally important issue as opting for an appropriate debt to equity ratio. However, as noted by Myer (2001), each theory works under its own assumptions and propositions, hence, none of the theories can give a complete picture of the practice of capital structure.

Ross (1977), Heinkel (1982) and Noe (1988) suggest that increasing leverage, by acquiring debt should have positive implications for firm value and performance. Furthermore, this result is also supported by Hadlock and James (2002) where they concluded that companies prefer debt (loan) financing because they anticipate a higher

return. According to Champion (1999), the use of leverage is one way to improve the performance of the firm.

Due to the lack of a consensus about what would qualify as optimal capital structure, it is pertinent to examine the effect of debt utilization on firms' performance. Several such studies were conducted in European countries and in the United States. They found contradictory results when Gleason (2000) supported a negative impact of leverage on the profitability of the firm while Roden and Lewellen (1995) found a significant positive association between profitability and total debt as a percentage of the total buyout-financing package in their study on leveraged buyouts. Thus, there is no universal theory about debt-equity choices and have different views regarding the financing option.

The contribution of this study was to help the manager of the companies to make good decisions on the proportions of their capital structure. If they have taken too much debt in the operations of the company, this can jeopardize the company's future, thus can make the companies go bankrupt. Hence, this will provide and add new knowledge to corporate managers as a benchmark in making their own decision on the company's performance.

To the author's knowledge there is a lack of similar research done on Malaysian companies especially on examination of lagged values towards the firm performance. Hence, this research will explore the extent to which debt influences firm performance. In addition, it is interesting to differentiate short- term debt, long- term debt and total debt effects since they have different risk and return profiles.

The rest of the paper is organized as follows: the next section provide a summary review of literature. Section three describes the methodology used for this study. Section four discusses the results of the findings and section five concludes the discussion.

2. Literature Review

2.1 Theoretical Literature

Research on the theory of capital structure was pioneered by the seminal work of Modigliani and Miller (1958). They found that the value of a firm is not affected by its financing mix when the study of financing choices initially received little attention. Modigliani and Miller concluded to the broadly known theory of "capital structure irrelevance" where the financial leverage does not affect the firm's market value under perfect market condition.

M&M demonstrated that if a company's investment policy is taken as given, then in a perfect world where there is no tax and transaction cost associated with raising money or going bankrupt, and disclosure of all information is credible, capital structure does not affect value. This position has been supported by others such as Hamada (1969) and Stiglitz (1974). However, their theory was based on restrictive assumptions and it is inconsistent with the real world, where firms generally employ only moderate amounts

of debt (Campello, 2006). M&M Irrelevant theory has been criticized on the grounds that their theory assumes rational economic behavior and perfect market conditions where according to Chaganti *et.al* (1995), it has limited applicability to small firms only.

After their initial presentation stating that capital structure is irrelevant to firm value, Modigliani and Miller (1963) revised their position by incorporating tax benefits as determinants of capital structure. In this new dimension, the essential characteristics of taxation are the recognition of interest as tax deductible expenditure. To strengthen this argument, M&M explain that a firm that honours its tax obligation benefits from partially offsetting interest called tax shield in the form of payment of lower taxes. Thus, they state that firms are able to maximize their value by employing more debt due to the tax shield benefits associated with debt use. Interest on debt is considered as a tax allowable expenses. According to Miller (1977), the value of firms depends on the relative level of each tax rate.

M&M theory was criticized of some weaknesses and irrelevance assumptions of the real world. Nevertheless it provides the foundation for other theories that are suggested by other researchers with the consideration of other market imperfections. The M&M theory has been expanded by Myers and Majluf (1984) where suggests that firms will initially rely on internally generated funds, no existence of information asymmetric and profitability firms will generate high earnings are expected to use less debt capital. In addition, expanding from M&M theory, Jensen and Meckling (1976) had developed agency theory where agency costs are defined as the sum of the monitoring expenditures by the principal, bonding costs by the agent, and a residual loss. The existence of agency problem will arise due to the conflicts either between managers and shareholders (agency cost of equity) or between shareholders and debt holders (agency costs of debt). Thus, a reliable tool to control agency cost can be the use of debt capital. Leverage will force managers to generate and pay out cash, simply because interest payments and compulsory. Interest payments will reduce the amount of remaining cash flows. Thus, debt can be viewed as a smart device to reduce the agency costs.

2.2 Empirical Literature

Study evidence by Kinsman and Newman (1998) suggested that, in general, higher levels of debt are correlated with lower firm performance based on the relationship between three measures of debt level. By using current debt as the measure of indebtedness, the finding indicates that current short term debt was negatively correlated with earnings but positively with long term debt. However, overall results demonstrate an inverse correlation between debt and firm performance. This result is consistent with the findings by Majumdar and Chibber (1999) when regression results showed that debt equity ratio is negatively and significantly related with performance. Hence, this study found a negative relationship which is not in accordance with agency theory as commonly accepted in Western economies. In addition, size is found to be positively related to performance. In India suppliers of debt are government-owned financial institutions, hence the application of agency theory, as applied to contemporary governance issues in the West, have to be re-assessed in light of state ownership of financial intuitions. Thus, privatization of state-owned Indian financial institutions is suggested as a fundamental policy change which may ensure that debt-holders can

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exercise a disciplining influence upon Indian managers and ensure superior corporate performance.

Gleason *et. al* (2000) had examined the relationship between performance and leverage by using return on asset. The result indicates that total debt has a significant, negative influence on performance. Thus, there are two implications can be drawn from the result. First, even in the presence of control variables, capital structure has a significant influence on capital structure. Second, the negative coefficient indicates that retailers, in general, use more debt in their capital structure than would be appropriate. Thus, this overleveraging negatively affects firm performance. Third, capital structure is not the only determinant of performance when the retailer size showed a positive and significant relationship. Hence, firm size also influences performance, with larger retailers earning higher return on asset compared to smaller retailers. This result supported by Agarwal *et. al* (2001) when debt has a negative influence on profitability. Thus, the benefits of increased access to capital, and monitoring of firms by banks do not seem to be realized in either higher profitability or stronger growth. However, profitability of the firm is positively influence by sales and growth in sales. This result is parallel with Hammes and Chen (2004) when debt ratio is negatively related to ROA. However, size is positively related to performance.

Studied by Mesquita and Lara (2003) found long term debt is not significantly related to ROE and it has negative sign, showing potential inverse relationship. Result of short term debt presented positive sign thus, this also suggest that short term debt become a common practice among the most profitable companies. Furthermore, short run fund arises due the easiness of sourcing the fund from financial institutions. Further, Philips and Sipahioglu (2004) had examined on the relationship between capital structure and corporate performance and found that there is no significant relationship between debt level and financial performance. It is clear from the descriptive statistics that the sample includes organizations operating with relatively high levels of debt, which are not associated with higher levels of performance. This result is contrasts with earlier research Modigliani and Miller (1963). Within the sample, it indicates that borrowing does not necessarily lead to higher performance as stated in asymmetric information theory, but could actually contribute to low performance as stated in agency theory. This analysis suggests that the firms with higher levels of debt in their capital structure do not perform better than firms with lower levels of debt.

According to Abor (2005) had performed an empirical study on the twenty two sampled firms which were listed in the Ghana and found short term debt has significantly positive relationship with ROE. He argues that short term debt to be less expensive leading to an increase in profit levels. The results also show profitability increases with size and sales growth. For long term debt, the result shows a significantly negative relationship. Thus, it implies that an increase in the long term debt is associated with decrease in profitability due to more expensive. For total debt, the result shows a significantly positive relationship. This implies that, an increase in the debt position is associated with an increase in profitability thus; the higher the debt will be the higher profitability. Both, the result also show positive relationship between firm size and sales growth. This supports the findings of Hadlock and James (2002) where profitable firms use more debt.

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On the other hand, Carpentier (2006), had found a contrast result. The findings had found no evidence of a significant relationship between the change in debt and change in value. Besides that, the only significant coefficient is profitability and size, which are positively related to changes in value in each sample. However, growth is insignificant to changes in value. However, Abor (2007), found significantly negative relationship between all the measures of capital structure and firm performance (ROA) in the case of Ghana. In the South African sample the result between short term debt and return on asset is statistically significant positive relationship. Thus, it indicates that short term debt is seemed to be relatively less costly. Hence, increasing short term debt is due to low interest rate and could result in high profit levels. For long term debt and total debt, the result show significantly negative association with ROA. Thus, it indicated long term debt has higher cost and this can lead low return on asset. Thus, this finding supports the previous empirical studies by Abor (2005). Besides that, firm size has significant positive effect while sales growth has significantly negative relationship on ROA (Abor, 2007).

Madan (2007) examined the role of financing decision in the overall performance of companies. The study concluded that while leverage seems to be working well for few categories of companies, it is affecting some others negatively. Thus, firms that have been moderately geared have been able to generate a good return on equity. Companies that are moderately geared, in the range of gearing ratio of 50 percent until 85 percent, have been able to generate a good ROE. Hence, low-geared companies and very highly geared companies need to work on improving their ROE by either increasing or reducing their debt-equity mix respectively. Supporting by Zeitun and Tian (2007), a firm's capital structure was found to have a significant on the firm's performance measures in both accounting, ROA and ROE. This support the Myers (1977) argument, that firms with high short term debt to total asset have a high growth rate and high performance. The results show that high performance is associated with a high tax rate indicates that profitable firms pay a high tax rate. Furthermore, firm size was found to have a positive impact on a firm's performance as large firms have a low bankruptcy costs.

Furthermore, Chen *et. al* (2008), found result of efficiency showed negative changes in performance. The coefficient on size shows that larger firm has less positive changes in return on assets and the change in leverage is positively associated with the change in return on equity. Study by Jermias (2008), showed that leverage and performance is significantly negative, and firm size also negatively and significantly related to performance. The results indicate that competitive intensity and business strategy do affect the leverage performance relationship such that it is less negative for cost leaders than for product differentiations. The results are consistent with the view that debt financing and debt covenants not only offer cost leaders the benefit of tax advantages, but also accord increased efficiency due to constraints imposed by debt holders.

Min Tsung Cheng (2009) studied the relative effects of debt and equity financing on the operating performance. Findings in this study show that apart from high cash flow firm, debt finance and debt financing have significantly negative consequence for operating performance. Hence, these findings suggest that it is dangerous for firms to rely or depend entirely on either debt or equity for raising capital but it is much safer and better

to raise finance by both methods, with each working together, at the same time. Thus, this finding suggests firms to try whenever possible to raise finance by using both methods simultaneously, with the advantages of the one method offsetting the difficulties of the other and vice versa. This support the findings by Krivogorsky *et.al* (2009) when the findings had found a negative association between debt to equity and performance hence confirming prior research findings that companies with high debt to equity ratios are usually perceived as being risky investments and possibly affecting wealth transfer from debt holders to share holders. This finding also consistent with Ebaid (2009) when STD and TD had give impact negatively on firm's performance measured by ROA. For measurement ROE, capital structure STD, LTD, TD has no significant impact on firm's performance.

The latest study on 60 Chinese real estate listed companies has been reviewed by Wang *et. al* (2010) had proved that the results provide support to agency theories of corporate leverage, especially the theory that leverage has a disciplining role for firms with low-growth opportunities. Based findings, firms with low growth opportunities and high growth opportunities has a negative relation between a debt financing while firms with mid growth opportunities has a positive relation with operating performance. In the other hand, findings by San and Heng (2011) indicate that ROA and ROE has no relationship with large, medium and small constructions companies. The result for ROE is same with Saeedi and Mahmoodi (2011) but not for ROA who found it is associated with STD, LTD and TD.

The arguments amongst other researchers has centered on the determination of the capital structure and the quantum of debt usage in relation to equity has demanded this study be done on companies' financing decisions on the proportion of their capital structure. Thus, this paper attempts to seek the extent of debt usage and differentiate which debt level give effects to the operating performance.

3. Research Methodology

Methodology had been adopted to achieve the objectives, which is analyzing the changes in debt level towards affecting firm performance. The explanatory variables consist of short-term debt, long-term debt and total debt while the control variables consist of the size, growth in sales, growth in assets and efficiency. The data for the study are selected figures from the financial statements of the 58 listed firms on the Main Market of Bursa Malaysia. Besides that, this study also limited the sample when focus only on the two largest sectors, namely consumer products and industrial products with 358 observations. Multiple regressions had been used to get the findings. The sample period for the study, as noted earlier, is 6 years, ranging from 2005 through 2010.

3.1 Variables of the Study

Based on the literature and empirical evidence, the effect of debt on corporate performance can be explained by using ROA and ROE in order to see the performance of firms. Thus, in the study of performance, measurement of ROA is based on researcher Mathur *et. al* (2001) and Abor (2007), where ROA is calculated as "net profit

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divided by total assets” whereas for ROE, it is calculated as “earnings before interest and tax divided by equity”, following Abor (2005).

According to Champion (1999), the use of debt or leverage is a way to improve performance of the firm. Besides that, Abor (2007) found that there is a positive relationship between short-term debt and return on assets in South Africa. He argued that this is attributed to the fact that short-term debt is cheaper than the long-term debt. Mesquita and Lara (2003) also found similar results in their study on Brazilian companies. Therefore, this study hypothesizes that there is a positive relationship between short-term debt and return on assets and return on equity. Following Abor (2005), Kyereboah and Coleman (2007), and Abor (2007) short-term debt is calculated as “short term debt divided by total capital”.

Based on study by Mesquita and Lara (2003) and Abor (2005), found a negative relationship between the ratio of long-term debt to total assets and return on equity. This is explained by the fact that long-term debts are relatively more expensive and hence result in low profitability. Hence, in this study long-term debt is hypothesized to have a negative relationship with long-term debts. Following Abor (2005) and Kyereboah and Coleman (2007) long-term debt is calculated as “long term debt divided by total capital”.

Gleason *et.al* (2000), found total debt to be negatively related to return on assets and this result is consistent with Min-Tsung Chen (2009) who found that the anticipated debt ratio has significantly negative effects on operating performance. Besides that, Johnny Jermias (2008) also had found a negative relationship between financial leverage and return on equity. Thus, a negative relationship is hypothesized between total debts and profitability. Consistent with short-term debt and long-term debt measure, total debt is calculated by dividing total debt by total capital.

In this study, four control variables had been used that are size, growth and efficiency. Following Abor (2007), size is measured by the log of the total assets. This measure is also similar to that used by Kyereboah and Coleman (2007), Gongmeng Chen *et. al* (2008) and Victoria Krivogorsky *et. al* (2009). For growth in sales, based on study by Abor (2005), growth is measured by sales growth, which is consistent with Rajshree Agarwal *et. al* (2000) while for growth in asset, following Carpentier (2006), growth is measured by the annual growth rate of total assets. For efficiency, according to Mathur *et. al* (2001), efficiency is measured by total asset turnover, where it is figured by sales over total assets.

Although the conflict among researchers about the debt usage but this study still attempts to seek the extent of debt usage, which differentiate debt level effect to firm performance. Besides that, the stressed also had been given to examine the lagged values effect towards firm performance where it is an improvement from the previous study.

3.2 Models

The models adopted in the study are as shown in the mathematical Equations 1 to Equations 4.

Return on asset

Equation 1:

$$\text{Performance}_{i,t} = \beta_0 + \beta_1 \text{STD}_{i,t} + \beta_2 \text{LTD}_{i,t} + \beta_3 \text{SIZE}_{i,t} + \beta_4 \text{SG}_{i,t} + \beta_5 \text{AG}_{i,t} + \beta_6 \text{EFF}_{i,t} + \varepsilon_{i,t}$$

Equation 2:

$$\text{Performance}_{i,t} = \beta_0 + \beta_1 \text{TD}_{i,t} + \beta_2 \text{SIZE}_{i,t} + \beta_3 \text{SG}_{i,t} + \beta_4 \text{AG}_{i,t} + \beta_5 \text{EFF}_{i,t} + \varepsilon_{i,t}$$

Return on equity

Equation 1:

$$\text{Performance}_{i,t} = \beta_0 + \beta_1 \text{STD}_{i,t} + \beta_2 \text{LTD}_{i,t} + \beta_3 \text{SIZE}_{i,t} + \beta_4 \text{SG}_{i,t} + \beta_5 \text{AG}_{i,t} + \beta_6 \text{EFF}_{i,t} + \varepsilon_{i,t}$$

Equation 2:

$$\text{Performance}_{i,t} = \beta_0 + \beta_1 \text{TD}_{i,t} + \beta_2 \text{SIZE}_{i,t} + \beta_3 \text{SG}_{i,t} + \beta_4 \text{AG}_{i,t} + \beta_5 \text{EFF}_{i,t} + \varepsilon_{i,t}$$

4. Result Discussions

Table 1 provides a summary of the descriptive statistics for the dependent and independent variables for the sample of firms. It shows that return on assets (ROA) for the sample has an average value 0.037 and a standard deviation of 0.139. The highest ROA is 0.386 and the lowest ROA is -1.885. The average return on equity (ROE) is 0.119 with a standard deviation of 0.255. The range of value for ROE is from -1.620 to 2.467.

Short-term debt (STD) which is measured by the ratio of short-term debt to total capital has an average value of 0.263. Its standard deviation of STD is 0.397, while the maximum STD is 3.325 while the lowest STD is -2.593. The average long-term debt (LTD), measured by the ratio of long term debt to total capital, is 0.094, and its standard deviation is also 1.119. The range of value LTD is from -0.014 to 0.533. The total debt to total capital (TD) has a mean 0.356. The highest TD is 3.352 percent while the lowest TD is -2.606. For size (SIZE), measured by Ln (Total Asset), the mean reported is 5.580 and the range is from a low 4.432 to the highest 7.178. The standard deviation for size is 0.481.

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The mean of assets growth (AGROW) is 0.106 and also has a standard deviation of 0.497. The value ranges from -0.655 to 6.380. For sales growth (SGROW), the average is 0.221 and standard deviation is 1.879. The highest value of SGROW is 26.754 and the lowest value is -0.940. Efficiency (EFF), measured by sales over total assets has a mean value of 1.00, standard deviation of 0.736, maximum value of 6.691 and the minimum value of 0.024.

Table 1: Summary Descriptive Statistics

	Mean	Min.	Max.	Std. Dev.
ROE	0.119	-1.620	2.467	0.255
ROA	0.037	-1.885	0.386	1.39
STD	0.263	-2.593	3.325	0.397
LTD	0.094	-0.014	0.533	1.119
TD	0.356	-2.606	3.352	0.429
SIZE	5.580	4.432	7.178	0.481
AGROW	0.106	-0.655	6.38	0.497
SGROW	0.221	-0.94	26.754	1.879
EFF	1.004	0.024	6.691	0.736

Pearson correlation analysis shows the results as in Table 2. In this study, it studies nine interval-level variables and estimates the relationships among all of them. Correlation analyses provide early sign that STD, TD, AGROW, SGROW and EFF is significantly related to ROE (corr=-0.430, p-value=0.000; corr=-0.391, p-value=0.000; corr=0.176, p-value=0.000; corr=0.174, p-value=0.000; corr=0.184, p-value=0.000 ;) while for ROA, only SIZE, AGROW, SGROW and EFF is significantly and positively related on each other's (corr=0.180, p-value=0.000; corr=0.251, p-value=0.000; corr=0.163, p-value=0.001; corr=0.166, p-value=0.001).

The analysis also shows that there is significant correlation between several independent variables such as between SIZE and TD (corr=0.164, p-value=0.001) indicating possible multicollinearity problem.

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Table 2: Pearson Correlation Matrix among the Variables

	ROE	ROA	STD	LTD
ROE	1.000			
ROA	-0.002 (0.484)	1.000		
STD	-0.430** (0.000)	-0.047 (0.188)	1.000	
LTD	0.016 (0.385)	-0.044 (0.201)	0.129** (0.007)	1.000
TD	-0.391 (0.000)	-0.054 (0.155)	0.961** (0.000)	0.397 (0.000)
SIZE	0.004 (0.471)	0.180** (0.000)	0.133** (0.006)	0.147** (0.003)
AGROW	0.176** (0.000)	0.251** (0.000)	0.089* (0.046)	-0.062 (0.271)
SGROW	0.174** (0.000)	0.163** (0.001)	-0.030 (0.285)	0.006 (0.455)
EFF	0.184** (0.000)	0.166** (0.001)	0.352* (0.000)	-0.047 (0.190)

	TD	SIZE	AGROW	SGROW
TD	1.000			
SIZE	0.164** (0.001)	1.000		
AGROW	-0.016 (0.384)	-0.033 (0.264)	1.000	
SGROW	-0.026 (0.312)	0.185** (0.000)	0.512** (0.000)	1.000
EFF	0.314** (0.000)	0.185** (0.000)	-0.002 (0.484)	0.052 (0.163)

**Correlation is significant at 0.01 levels

*Correlation is significant at 0.05 levels

4.1 Regression Analysis

A series of regression analyses were executed and the results are summarized in table 3 and table 4 as follows:

Table 3: Output for Regression Analysis with ROE as the dependent variable

	Model 1 Coefficient (p-value)	Model 2 Coefficient (p-value)	Model 3 Coefficient (p-value)	Model 4 Coefficient (p-value)	Model 5 Coefficient (p-value)	Model 6 Coefficient (p-value)
Constant	0.073	0.034	0.137	0.148	0.176	0.146
STD	-0.366* (0.000)					
STD _{t-1}			-0.058 (0.080)			
STD _{t-2}					0.002 (0.958)	
LTD	0.211* (0.026)					
LTD _{t-1}			-0.005 (0.966)			
LTD _{t-2}					-0.130 (0.245)	
TD		-0.294* (0.000)				
TD _{t-1}				-0.052 (0.087)		
TD _{t-2}						-0.013 (0.680)
SIZE	-0.004 (0.879)	0.012 (0.635)	-0.014 (0.617)	-0.016 (0.575)	-0.021 (0.449)	-0.017 (0.536)
AGROW	0.051* (0.049)	0.065* (0.015)	0.066* (0.031)	0.067* (0.029)	0.067* (0.030)	0.065* (0.035)
SGROW	0.011 (0.094)	0.011 (0.133)	0.013 (0.117)	0.013 (0.109)	0.013 (0.126)	0.013 (0.107)
EFF	0.134* (0.000)	0.115* (0.000)	0.065* (0.000)	0.066* (0.000)	0.063* (0.000)	0.063* (0.000)
R ²	0.340	0.281	0.060	0.068	0.061	0.061
DW STAT	2.000	2.056	1.901	2.062	1.979	1.980
F-STAT	31.601 (0.000)	28.901 (0.000)	16.118 (0.000)	6.212 (0.000)	4.877 (0.000)	5.611 (0.000)

*Significant at the 0.05 level

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Table 4: Output for Regression Analysis with ROA as the dependent variable

	Model 1 Coefficient (p-value)	Model 2 Coefficient (p-value)	Model 3 Coefficient (p-value)	Model 4 Coefficient (p-value)	Model 5 Coefficient (p-value)	Model 6 Coefficient (p-value)
Constant	-0.253	-0.249	-0.252	-0.235	-0.242	-0.246
STD	-0.038* (0.045)					
STD _{t-1}			-0.004 (0.832)			
STD _{t-2}					0.020 (0.254)	
LTD	-0.078 (0.189)					
LTD _{t-1}			0.078 (0.196)			
LTD _{t-2}					0.004 (0.950)	
TD		-0.042* (0.014)				
TD _{t-1}				0.005 (0.759)		
TD _{t-2}						0.018 (0.259)
SIZE	0.048* (0.001)	0.047* (0.002)	0.045* (0.003)	0.043* (0.004)	0.043* (0.004)	0.043* (0.004)
AGROW	0.063* (0.000)	0.062* (0.000)	0.060* (0.000)	0.062* (0.000)	0.062* (0.000)	0.062* (0.000)
SGROW	0.003 (0.481)	0.003 (0.472)	0.003 (0.469)	0.003 (0.421)	0.004 (0.411)	0.004 (0.398)
EFF	0.032* (0.002)	0.033* (0.001)	0.024 (0.014)	0.026 (0.009)	0.027 (0.006)	0.027 (0.006)
R ²	0.114	0.044	0.043	0.100	0.101	0.116
DW STAT	1.962	1.965	1.941	1.981	1.984	1.984
F-STAT	8.677 (0.000)	10.311 (0.000)	11.750 (0.000)	8.947 (0.000)	7.670 (0.000)	9.213 (0.000)

*Significant at the 0.05 level

F-test is used to test the hypothesis that the variation in the independent variable explained a significant portion of the variation in the dependent variable in the overall model. The F-tests as shown in Table 3 and 4 indicate that all the models are significant in explaining the firm's performance, however, the explanatory power of the models as shown by the adjusted R-square value is very low, ranging from only 4% to 34%.

The main findings of this study are also shown in Table 3 and Table 4. After controlling for size, growth and efficiencies effect on performance, short term debt, long term debt and total debt is found by the t-test, to be only significantly related to ROE but not ROA. For ROA, short term debt and total debt only found to be significant. It can be concluded that long-term debt has a significant positive relationship with ROE but not ROA, which means the leverage has effect on shareholders return. This finding is consistent with Myers and Majluf's (1984) theory, which states that there is a positive relationship between the long-term debt levels and the profitability of a company. This finding of debt level is also supported by Abor (2005), Wang (2010) for TD and Mesquita and Lara (2003) for STD. Studied by Grossman and Hart (1986) who argue that higher levels of debt in the firm's capital structure will be directly associated with higher performance levels. However, this finding is contradicted with Saeedi and Mahmoodi (2011), and Ebaid (2009) when all debt level result is not significant. Moreover, San and Heng (2011), and Mesquita and Lara (2003) who found long-term debt is not significant with ROE.

For ROA, the result is constant with Saeedi and Mahmoodi (2011), Ebaid (2009), Abor (2007) and Tian (2007) when STD and TD have significant relationship with ROA. This result also consistent with Marthur *et. al* (2001) for STD. Those results are in conformity with the conclusions of Fama and French (1998) and Miller (1977). On the other hand, San and Heng (2011) found no significant between ROA with all debt level. Moreover, the result of LTD is consistent with Ebaid (2009) when also found no significant relationship with ROA. However, result for LTD is contradicted with Saeedi and Mahmoodi (2011), Tian (2007) and Abor (2007) when they found a significant relationship. Besides that, study by Philip and Sipahioglu (2004) when found no significant relationship with debt.

The study also made a noble contribution in terms of investigating the length of leverage effect on performance. The effect of leverage usage on performance is shown to be both immediate and short term in nature since both firm performance measures are not significantly related to the lagged value of long term debt (LTD_{t-1} and LTD_{t-2})

The study also shows that there is significant relationship between both performance measures and other capital structure indicators, namely short term debt and total debt. In the case of short term debt and total debt, the result consistent with the findings by Abor (2007) which concluded in the case of South Africa, the results exhibited a statistically significant negative relationship between STD and TD with ROA. Besides that, the finding of STD and TD is constant with Ebaid (2009) when the results indicate significant negative relationship. Additionally ROE results also consistent with the finding by Abor (2005) and Ebaid (2009). However, STD_{t-1} , STD_{t-2} , TD_{t-1} , TD_{t-2} have insignificant relationship with both performance hence it can be concluded the last year and two previous years debt did not have an effect on current performance.

In addition to the main findings on capital structure effects on firm performance, this study also shows that ROA of Malaysian listed companies is affected by firm size, asset growth, efficiency but not sales growth as found by Abor (2007). For ROE, only asset growth and efficiency are effected on the firm performance. The finding however is consistent with Pandey (2001) who also found sales growth is insignificant. However,

the contradict result by Carpentier (2006) when asset growth to be insignificant. Thus, it can be concluded sales growth do not make much contribution as a control variables in this study.

Firm size however is found to be insignificant related to ROE in the negative direction. The finding is contradicted with Abor (2005) where size has a positive and significant relationship. The results of data analysis conclude that short term debt and total debt only have significant relationship with ROA while for ROE; capital structure indicators are significant in explaining firm operating performance

5. Conclusion

This section concludes the overall study. The objective of the study is to examine capital structure effects on firm performance among public-listed companies in Malaysia. Theoretical literature of capital structures, specifically the Modigliani-Miller theorem, tradeoff theory and pecking order theory were reviewed to provide a sufficient understanding of how capital structure could affect firm performance. Extensive amount of related empirical literature was reviewed to identify the proxies and measurements for capital structure and financial performance and several control variables to be the relationship. As a result, in this study return on asset (ROA) and return on equity (ROE) were used as the measures for firm performance. Capital structure is represented by short term debt (STD), long term debt (LTD) and total debt (TD). Four variables found by most literature to have an influence on firm performance, namely, size, asset grow, sales grow and efficiency, are used in this study as control variables.

This study covers two major sectors which are consumers and industrials sectors 58 firms were identified as the sample firms starting from year 2005 through 2010 with total number observations of 358.

Two general pooled regression models are utilized, one with ROA as the dependent variable and the other one as ROE as the dependent variable, to assess the effect of debt on firm performance. A series of regression analysis were executed for each model, where either one of the capital structure proxies is included in each analysis and lag values for the proxies were used to replace the non lag value in order to achieve the best fitted relationship between capital structure and firm performance.

The study finds that only short term debt and total debt has significant relationship with ROA while ROE, all capital structure indicators has significant relationship. Lagged values for the capital structure variables were also tested in case the effect on performance is long term in nature. The analysis with lagged values also shows that non of lagged values for total debt, short term debt and long term debt has significant relationship with performance. The study also shows that all the models tested have a very low explanatory power on firm performance.

The significant relationship between short-term debt, long-term debt and total debt with ROE is consistent with the findings of Abor (2005) and, Mesquita and Lara (2003) for short-term debt. This suggest that short-term debt tends to be less expensive and therefore increasing short-term debt with a relatively low interest rate will lead to an

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increase in profit levels. However, this finding has contradicted result with Saeedi and Mahmoodi (2011) when they found ROE has no significant effect on STD, LTD and TD.

However, past last year and two previous years of debt level is not significantly associated with ROE, implies that capital structure has no immediate or long term effect on returns to shareholders

The positive significant relationship between long-term debts with ROA is consistent with the findings of Philips and Sipahioglu (2004) and Grossman and Hart (1986), which indicate that higher levels of debt in the firm's capital structure will be directly associated with higher performance levels. The higher performance level might be contributed by tax shield of interest and disciplinary role imposed by higher long term debt which reduces agency cost. However the effect is short term in nature since the lagged long term debt variables do not significantly influence ROA. This finding implies that the management of the firm can use long term debt decision to increase the return on the firm.

On the other, the finding that ROE is not significantly associated with all the capital structure variable, whether it is a current long term debt level, or past long term debt level, implies that capital structure has no immediate or long term effect on returns to shareholders. Even though returns to the firm as whole increase with the increase in long term debt level this does not contribute to higher return to equity holders. Drawing in Hutchinson' (1995) argument, a possible reason for such finding is that earning power of the firms' assets is less than the average interest cost of debt to the firm.

This study therefore suggests that investors who concern for ROE should be indifferent to any level of debt used by the firms since the level of debt does not affect the firms' ROE. Besides that, the explanatory power of firm size, asset growth and efficiency in explaining ROA and ROE, which is very much lower than found in studies in other countries indicates that the performance of Malaysian listed companies is not very much influenced by the internal firm characteristic factor but might be influenced more by the external related factors. Hence it can be concluded that fundamental analysis of the firm size, growth and efficiency have little role to play in guiding investors' choice of firms with good operating performance. All in all, this study give a better picture to show the importance of capital structure in influencing firm operating performance from shareholders' perspective (ROE) even though higher use of debt significantly increase the performance from the total firms perspective (ROA).

Although this study focuses on the variables that were repeatedly used by other researchers to explain firm operating performance, however found low explanatory power of these variables. Thus, suggestion for further researchers should seek other firm characteristics variables such as Tobin'q and gross profit margin that might provide better explanation of firm operating performance before we would suggest that fundamental analysis of a firm is of little value to investors. Furthermore, this study uses annual data over the year 2005 until year 2010. For a more accurate result, future research could use quarterly data instead of yearly data. It is also suggested that one can extend the analyzed time to cover the turbulent period at the beginning of the 1990's, as the longer time period would be more volatile. This will give a full

understanding of how debt works over the business cycle and affects the overall performance of the company. Moreover, this research focused only on the two major sectors, namely consumers and industrials sectors. Hence, to get a better picture for future studies, it can include more sectors such as construction, plantation, infrastructure and others in the research.

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