Family Ownership, Firm's Financial Characteristics and Capital Structure: Evidence from Public Listed Companies in Malaysia

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ABSTRACT
Capital structure is identified as one of focal facet in corporate finance branch of learning. It provides comprehension on how firms choose to finance their operations and expansion. The objective of this study is to explore the determinants of capital structure of Malaysian public listed companies. The period of 2001-2006 was selected in this study, which reflected the post Asian financial crisis period. Firm's financial characteristics consist of size, growth, profitability, liquidity and ability to service debt. Family ownership which was identified as a unique feature in the Malaysian corporate sector was used to measure the effect of corporate governance in capital structure decision. Using panel data approach, this study infers that the role of ownership structure in the form of family ownership though is not significantly related to capital structure, its inclusion in the empirical equation changes the significance of other variables. Except for growth, all other financial characteristics have significant relationships with capital structure.

Introduction

Capital structure, one of the most studied aspects in modern corporate finance school of thought, is an important decision for management to ensure the financial health of firm to be in good condition. The information on capital structure is essential for every stakeholders of a firm to make their decisions pertaining to the firm. Suitable capital structure is not only imperative for maximization of interest of every stakeholders of an organization, but also crucial for the organization to compete effectively and efficiently in its operating environment (Simerly & Li, 1999). Fallacious choice of capital structure would not only lead to its financial distress, but also ultimately drag the organization into insolvency (Eriotis et al., 2007). Studying firm's capital structure is important as it plays

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important role in creating value for the firm via the effect of tax, information asymmetry, and agency cost (Tang & Jang, 2007). Besides that, financial theory also has been used by firms to choose the best composition of capital structure that enhances the firms' value (Eriotis et al., 2007). Therefore, study on capital structure would provide valuable insights on how strategic decision of firms in implementing investments would affect its value, which in return, used to determine its position in the market.

Modigliani and Miller (1958) initiated the most significant study on this topic, which was followed with various studies that have been conducted in diverse dimensions of capital structure. Despite its theoretical appeal and vast exploration, researchers in financial management have not achieved consensus on capital structure and its optimality. It was only the ways to achieve short-term capital structure objective were able to be identified in most of these studies (Simerly & Li, 1999). It was pointed out that there is clear evidence of lack of consensus in identifying other determinants of capital structure (Delcoure, 2007).

Fast advancement of agency theory with emphasis on bankruptcy costs and agency cost has contributed the argument that corporate governance has important role in capital structure (Seifert & Gonenc, 2008). Among newly identified determinants that influence capital structure, corporate governance has been identified as one of decisive factor that affects firm's capital structure decision (Delcoure, 2007). For this purpose, ownership structure is commonly used as proxy for corporate governance (Booth et al., 2001; Zou & Xiao, 2006).

Prior to 1997 financial crisis, Malaysian firms were noted to be highly leveraged in view of their close relationship with local banking and financial institutions where bank-based borrowings were dominating the capital structure of these firms (Tam and Tan, 2007). Hence, capital structure of most of Malaysian firms was more aligned to debt financing as options of equity financing were very much less considered. This showed owner of the firms were making investment decision based on connections and links with the banks (Suto, 2003). This relates to weak path in corporate governance practices among Malaysian firms. Besides high risk capital structure, this factor also contributed to bad corporate investment decisions, rapid diversification and risky financing practices (Samad, 2004). For example, in November 1997, United Engineers Malaysia (a government-linked corporation) acquired 32.6% of its financially troubled holding company, Renong, at a premium price that was deemed as an act of bailout which suggest weak corporate governance practices (Mitton, 2002).

After nearly ten years of the Asian financial crisis, the affected countries have rebound and back on track with decent economy fundamentals. Post-crisis period exhibited better corporate governance policies implemented by the authorities to ensure firms choose best source of financing (Wei & Zhang, 2008). Hence, this study would enable to highlight the post crisis capital structure decision especially with the implementation of new corporate governance practices. Uniqueness of this study would be the enclosure of corporate governance link in the form of family ownership besides the usual financial characteristics variables. This would provide additional insight on how family ownership as prominent feature of the Malaysian corporate ownership affects the capital structure decisions.

1. Review of Literature

1.1 Theory of Capital Structure

An essential matter in corporate finance involves understanding how firms choose their financing choices and it is apparent that there is no consensus on theories that explains a firm's perfect capital structure (Seifert & Gonenc, 2008). Modigliani and Miller (1958) initiated the first study on capital structure which concludes that capital structure is immaterial in a corporate world without taxes, transaction costs or other market imperfections. As theory by Modigliani and Miller (1958) lack of practicality in its assumptions, the next generation of researchers explored into meticulous conception of capital structure that made possible to emergence of other prominent theories in capital structure.

1.1.1 Modigliani-Miller Theorem

This pioneer study was designed by Modigliani and Miller (1958) on assumption that there is existence of market perfection in capital market. Therefore, the market operates without transaction costs, bankruptcy costs and information is available for everyone in the market. Modigliani and Miller (1958), in other words, asserted that financing decisions of firms are undertaken with identical interest rate and without tax. As a result, cost of equity is same for firms which are, both, leveraged and non-leveraged. For the non-leveraged firm, premium is included for financial risk. Ultimately, these assumptions are pointing out that value of the firm is independent to its capital structure.

1.1.2 Trade-Off Theory

Modigliani and Miller (1958) argument that capital structure does not exist in perfect market is irrelevant as in real world, imperfections in market is apparent. This weakness is addressed in trade off theory. It is based on firm's choice of source of financing after equating the cost and benefits of each of the source, i.e. marginal costs and marginal benefits (Frank & Goyal, 2003). The balancing of both aspects determines the optimal capital structure (Seifert & Gonenc, 2008). The tradeoff theory states that a taxable corporation should increase its debt level until its tax advantages of borrowing against the costs of financial distress is balanced. Debt level is expected to be increased to the limit where marginal value of tax shield is equal or lesser to present value of possible financial distress costs (Delcoure, 2007).

The theory, deemed static, designed under presumption that optimal capital structure is achieved when advantage of the tax shield benefits of debt is equal to increased likelihood of incurring debt-related bankruptcy costs (Beattie et al., 2006). Thus, firm's debt position should be at the level where the tax advantages of additional debt are equal or more of the costs of possible financial distress (Myres, 2001). However, debt financing is exposed to default risk that points towards probability of bankruptcy. Hence, firm should weigh these two aspects in deciding its optimal capital structure level.

1.1.3 Pecking Order Theory

In pecking order theory (Myers, 1984) the asymmetric information element is included. The pecking order hypothesis describes a hierarchy of financial choices for a firm, which starts from internally generated financing to debt and lastly outside equity (Seifert & Gonenc, 2008). Pecking order theory suggest that management would prefer equity financing in favor of debt financing in view of information asymmetry condition and benefit of reduced

transactions costs. Based on this theory, highly profitable firms will tend to use internal funding, whereas firms with low profitability tend to use external financing. In the context of internal finance, the theory indicated internal fund such as retained earnings is preferred and as for external financing, debt is chosen over equity (Tang & Jang, 2007). The theory can be related to few aspects like agency costs, taxes, transaction costs and information asymmetries (Seifert & Gonenc, 2008).

The theory asserts opposite relationship between profitability and debt usage (Tang & Jang, 2007). If a firm use of external financing would indicate that the firm is not profitable, its stock price may be adversely affected. This related to information asymmetric where the managers usually have more information on the firm. Therefore, they would issue new shares when it is believed that the stock price is fairly or overly priced only.

Information asymmetric also occurs when external financing signals the firm's red profitability, which may affect the share price. Hence, new shares would be issued only when stock price of the firm is deemed favorable. This may again be wrongly interpreted as the firm is not profitable and sourcing for external financing. Therefore, debt would be used first instead of new stock issuance for financing requirement. Large cash reserves and availability of financial slack are resultants of this type of corporate practice (Seifert & Gonenc, 2008).

Besides in information asymmetric, easy access to internal fund and lesser transaction costs are reasons for utilization of internal fund first before debt financing (Chen, 2004). It is also argued that profitable firms borrow less for the reason that they have their own internal fund to be use first (Myres, 2001). The theory also does not back optimal capital structure as it is believed to be dynamic over time (Romano et al., 2001). Nevertheless, in long run, firms are expected to identify their capital structure that is consistent with tradeoff models of capital structure choice (Hovakimian et al., 2001).

1.1.4 Agency Cost Theory

Tang and Jang (2007) reviewed Jensen and Meckling (1976) that agency cost theory induces positive relationship between level of debt and shareholders' value. There are two forms of agency conflicts; manager-shareholders and creditors-shareholders, where the conflict between manager and shareholders is about fulfilling the respective parties' individual interest. For example, managers in profitable firms use equity financing given the availability of free cash flow. Hence, the managers are not committed to debt-repayment. This would potentially reduce the shareholders value (Tang & Jang, 2007). Thus, debt financing is identified as tool to ensure that managers increase shareholders' value instead of making money for themselves (Chen, 2004).

1.1.5 Signaling Hypothesis Model

Signaling hypothesis model states that high-value firms are able to use more debt financing because debt has its dead weight costs, which make less valuable companies more likely to fall into bankruptcy – hence predicts that the firms with the best earnings and growth prospects will employ the most leverage. This model states the firm with higher value would use more debt as it has less probability of being insolvent – hence suggesting that firms with high growth rate and large size would resort in debt financing (Chen, 2004). However, alternative argument states negative relationship between growth and leverage in view of the fact that growth opportunities cannot be collaterized (Lang et al., 1996).

1.2 Determinants of Capital Structure

It is always the level of capital structure that maximizes the value of the firm that is regarded as optimal capital structure (Eriotis et al., 2007). However, existence of optimal capital structure level still remains vague with no proper methodology specified to ascertain the said level of capital structure based on individual firm's financial standing. Consequent to those theories, there were continuous studies made in relation to factors that determine the capital structure of firms.

1.2.1 Financial Characteristics and Capital Structure

Financial characteristics of the firm are expected to be the main determinants of capital structure. Firm-specific factors like firm size, risk, growth, tangibility and profitability has been tested widely across various nations and noted to be significant and consistent with capital structure theories (Jong et al., 2008).

Size of firm is one most common variable used to be tested as explanatory factor for capital structure. Trade-off theory lays down that large firms are expected to have a higher debt capacity given the fact that large firms tend to be well diversified and has lesser probability to be financially distressed which may lead to insolvency and bankruptcy cost (Nivorozhkin, 2005). As a firm becomes more diversified, the exposure to higher transactional costs and bankruptcy cost reduces (Chen, 2004). Hence, these firms are expected to have more inclination towards debt financing. This was concurred in past studies by Gaud et al. (2005); Arslan and Karan (2006); Huang and Song (2006); Delcoure, (2007) and Mitton (2008). Therefore, the hypothesis would be as follows:-

H_{1A}: *There is positive relationship between size of firm and debt ratio*

Pecking order theory suggests firms will use retained earnings before taking up debt and external equity (Huang and Song, 2006). Thus, firms would keep debt financing as last choice resulting in negative relationship between growth of firm and debt ratio. Agency cost also plays important effect on financial decision for high growth firm. Equity financing would be sought to undertake new projects instead of debt financing by firms with high growth opportunities as a mechanism to minimize agency costs (Jong et al., 2008). Firms with high-growth opportunity resort for debt as last option, hence leverage is expected to be negatively related with growth (Huang & Song, 2006). As in trade-off theory, firms with good growth opportunities has less probability to borrow based on growth opportunities as it cannot be used as collateral in borrowing – hence would resort for equity financing (Gaud et al., 2005). Asset substitution effect may cause high growth firms to capitalize from debt holders to shareholders, hence firms to rely on equity financing more (Chen, 2004). Upward stock price movement is usually associated with improved growth opportunities, which at the end would result in lower debt ratio (Hovakimian et al., 2001). Fattouh et al. (2005) and Delcoure (2007) have also concluded in their respective studies that growth is negatively related with leverage. As a result, the hypothesis is developed as follows: -

H_{1B}: *There is negative relationship between growth of firm and debt ratio*

Profitability of companies has a uniform negative and significant effect on leverage across all countries considered, which is in line with the pecking-order theory of finance (Nivorozhkin, 2005). Pecking order theory states that profitable firms would tend to use internal funds to finance their expansions (Tang & Jang, 2007). Additionally, the profitable firms choose to commit debt for the same reason that their future profits would be subject to terms and conditions by the lenders –thus resulting in inverse relation between profitability and leverage (Deesomsak et al., 2004). As an alternative argument, to avoid

incurring excessive tax, tax-based models recommends profitable firms should borrow more and incur interest cost, instead (Huang and Song, 2006). Nevertheless, this is again has to be weighed against the expected bankruptcy costs. Study by (Deesomsak et al., 2004) revealed that Malaysian firms prefer to use internal sources of funding when profits are high, hence showing negative and significant relationship with leverage. Study by Gaud et al. (2005), Chen (2004) and Booth et al. (2001) also revealed statistically significant negative relationship between profitability and leverage. With this, the hypothesis would structures as the following:-

H_{1C}: There is negative relationship between profitability of firm and debt ratio

The liquidity level of the firm is the ratio of current assets to current liabilities. It indicates the ability of the firm to pay creditors in the short-term (Manos et al., 2007). Liquidity are expected to have negative relationship as firms tend to use the extra cash to finance their investment instead of incurring interest costs (Deesomsak et al., 2004). Additional debt would deteriorate the current ratio furthers and makes the firm's financial standing weak (Eriotis et al., 2007). Similarly, increases in cash refer to increase in current assets that result in high current ratio. Hence this shows higher liquidity available to finance growth as argued in pecking order theory (Hovakimian et al., 2001). The hypothesis would be as follows: -

H_{1D}: There is negative relationship between liquidity level and debt ratio

In assessing the credit application by firms, banking and financial institutions give paramount importance to ability of firm to service debt obligations, which is reflected in the firm's interest coverage ratio. Similar to the liquidity measure, the interest coverage also expected to have negative relationship with debt ratio. Past studies that have tested this relationship are Harris and Raviv (1990), Eriotis et al. (2007) and Manos et al. (2007) who found that there is a negative relation between the debt ratio of the firms and interest coverage ratio. Hence, the hypothesis developed would be as follows: -

H_{1E}: There is negative relationship between interest coverage and debt ratio

1.2.2 Family Ownership and Capital Structure

Ownership concentration is able to minimize agency conflicts of firms and maximizes firms' value via capital structure decisions (Driffield, 2007). Hence, it is important to recognize how ownership structure is influencing the capital structure of public listed firms in Malaysia. According to Tam and Tan (2007), listed companies in Malaysia are still within the control of the promoters who still has close relationship with the management of these companies. In relation to family owned companies, they defined that family encompasses both individual and family investors, who shares same organizational motivations. Agency cost literature argues that large shareholders should have enhanced incentives and capabilities to monitor managerial behavior closely. At most times, the owners themselves act as managers. Thus, there is less need for debt to function as disciplining tool for managers. Therefore, shareholdings of family ownership are expected to be negatively correlated with leverage (Zou & Xiao, 2006). Family legacy and concentration of family wealth in the business also causes family-owned to have less appetite for debt financing (King & Santor, 2008). This also supports the argument of negative relationship between family-owned firms and leverage. This brings to hypothesis as follows:

H_{2A}: There is negative relationship between family-owned structure and debt ratio

2. Methodolody

2.1 Model Specification

Dependent variable in this study is capital structure, which is measured by debt ratio. The independent variables, which are the explanatory variables, are classified into two main groups. The first independent variable is financial characteristics of the firm. This variable is measured by the firm's size, growth, profitability, liquidity and interest coverage. The second independent variable is ownership structure of the firm measured by family ownership. Hence, the model to be used in this study is as follows: -

$$\text{Debt Rati o} = f\ \{SIZE_I, GROW_I, PROF_I, LIQD_I, ATSD_I, FAMO_I,\} + \alpha_I + \epsilon_I \qquad (1)$$

where;

$$SIZE_I \quad = \text{ size of firm}$$

$$GROW_I = \text{ growth of firm}$$

$$PROF_I \quad = \text{ profitability of firm}$$

$$LIQD_I \quad = \text{ liquidity of firm}$$

$$ATSD_I \quad = \text{ ability to service debt}$$

$$FAMO_I = \text{ family-owned firm}$$

$$\alpha_I \qquad = \text{ beta}$$

$$\epsilon_I \qquad = \text{ error terms}$$

This study uses data retrieved from Datastream and Annual Reports of Malaysian public listed companies for the period from 2001 to 2006 Periods after year 2000 considered as stable after Asian financial crisis as significant restructuring of the economy has taken place prior to this period (Chang & Shin, 2007). Lim et al. (2008) reviewed study on Malaysia by Cheong et al. (2007) that classified post-crisis period as January 2001 onwards. Unit of analysis would be public listed companies.

In this study, firms listed on Industrial Products portfolio of the Main Board of Bursa Malaysia are selected as sample. Industrial Product portfolio is selected as sample given its prominence contribution to Malaysia economy. Based on Bank Negara Report, Industrial portfolio consists mainly by firms that are involved in manufacturing activities, which contributes 30.3% of the Malaysia's GDP or equivalent to RM152,390 million in year 2007. During the 1997 financial crisis, industrial sector was also badly hit. In February 1998, the industrial and manufacturing output contracted by 3.4% and 4.3% respectively in the first quarter of 1999 (Ariff & Yanti, 1999). As firms in these industries are listed on Industrial Product sector, it would be more relevant to study the capital structure of firms in this portfolio. Industrial Product portfolio in Main Board is comprised of 152 firms.

All the variables with its proxy for measurement and past empirical studies are summarized below.

Table 1. Variables Descriptions

Variable	Proxy for Measurement	Past Studies
Size of Firm (SIZE)	Logarithm of Total Assets	Huang and Song (2006) Delcoure (2007) Mitton (2008)
Growth (GROW)	Sales Growth	Chen (2004) Fattouh et al. (2005) Gaud et al. (2005)
Profitability (PROF)	$\frac{EBIT}{Total\ Assets}$	Booth et al. (2001) Zou and Xiao (2006) Jong et al. (2008)
Liquidity (LIQD)	$\frac{Current\ Assets}{Current\ Liabilities}$	Deesomsak et al. (2004) Eriotis et al. (2007) Manos, et al. (2007)
Ability to Service Debt (ATSD)	$\frac{EBIT}{Interest\ Expenses}$	Harris and Raviv (1990) Deesomsak et al. (2004) Eriotis et al. (2007)
Family Owned (FAMO)	More than 5% owned by individual and/or family members	Zou and Xiao (2006) King and Santor (2008)

In order to obtain the data on family ownership of the firm, annual reports of all targeted firms were downloaded from Bursa Malaysia website. The said information is available under Shareholders Statistics section in every Annual Report. The substantial shareholders are determined from the Substantial Shareholders sub-section, where in this section firms are regulated to list name and percentage of shareholdings of shareholders who has more than 5% interest in the firm (Tam & Tan, 2007). 5% cut-off is used in to determine substantial ownership as most of previous studies has used 5% given its clarity purposes (Zuo & Xiao, 2006). Using a dummy variable, family ownership is recognized if substantial shareholders are family members that cumulatively owned more than 5% interest in the firm.

2.2 Data Analysis

Panel (data) analysis was used in this study given its ability to estimate the relationship between debt ratio and determinants of capital structure. Panel data analysis has three approaches, i.e. independently pooled panels, fixed effect models and random effect models. The choice of approach to be used differs according to objective of the study. In this study, fixed effect model is used given the objective of this study to determine the relationship between variables of firms over a period of five years. Fixed effect model is divided into two sub-models, i.e. cross-effect model and time-effect model. In cross-effect model, the firm differences are controlled, whereas in time-effect model, time differences are controlled. Another model that has been used is the two way-effect model, which controls both firm and time differences.

3. Results

Preliminary analysis is first undertaken for dependent and first independent variable, which are firm-specific financial characteristics. In the analysis, all three types of leverages, i.e. overall leverage, long-term leverage and short-term leverage were calculated. However, the result showed that differences between all three leverage were insignificant. Hence, only ratio of overall leverage was used in final estimation.

Correlation analysis is undertaken to ensure that there is no multicollinearity among variables tested. Firstly, correlation between the dependent and independent variables for firm-specific financial characteristics were determined. From Table 2, the output of analysis showed that there was low correlation between debt and firm-specific financial characteristics variables. The lowest value is observed in growth and followed by ability to service debt, size and liquidity. Thus, it is noticeable that there is no issue of multicollinearity among the variables, both dependent and independent in the empirical model.

Table 2. Results of Correlation Analysis & Descriptive Analysis

Panel I: Correlation Analysis						
	DEBT	SIZE	PROF	LIQD	GROW	ATSD
DEBT	1	-0.0187	-0.4452	-0.1618	0.00378	-0.0481
SIZE		1	0.0979	-0.1457	0.0179	-0.0280
PROFIT			1	0.2391	-0.0650	0.1147
LIQUIDITY				1	0.0049	0.0344
GROWTH					1	-0.0107
ABILITY						1

Panel II: Descriptive analysis						
	DEBT	SIZE	PROF	LIQD	GROW	ATSD
Mean	0.2719	12.7110	0.0498	3.1394	1.6472	2.6629
Std. Dev.	0.6540	1.2992	0.1408	5.4455	29.098	30.816
No of firms = 107			Family-owned firms = 75			

The analysis started by using the three models or procedures of panel analysis that were mentioned in earlier chapter. Inferring from the outcome of the analysis as shown in Table 3, the best procedure that was chosen to be used to estimate the empirical model is cross-effect procedure.

The existence of valid model is apparent in all three procedures as F-statistic suggests that all models are valid at 1% significant level. However, other criteria were taken into consideration to underline the suitability of cross-effect procedure. Among three procedures, cross-effect and two-way effect had higher explanatory power which is above 40% compared to time-effect that had only merely 20% explanatory power. Thus, nearly 40% of the debt ratio has been significantly explained by the five independent variables in cross-effect and two-way effect.

Secondly, standard error of regression was used to evaluate in order to obtain best procedure. The standard error of regression demonstrated that both procedures had same value. Thirdly, Schwarz Information Criteria (SIC) was used, where cross-effect procedure noted to have the lowest – hence the better one compared to two-way effect. The Durbin-Watson Test value of 2.05 indicated that there is no autocorrelation as it is in the range of 1.50 to 2.50. In precise, it was deduced that cross-effect model is the most suitable model to be used to estimate the empirical model in this study.

Table 3. Estimated Panel Analysis

Panel I: Estimated Model

	Pooled	Time-Effect	Cross-Effect	Two-Way Effect
CONSTAN	0.2601	0.2471	1.1882	1.1403**
SIZE	0.0057	0.0067	-0.0692*	-0.0654
	(0.3984)	(0.4661)	(-1.8246)	(-1.5684)
GROW	-0.0003	-0.0003	-0.0003	-0.0003
	(-0.6079)	(-0.6340)	(-0.5981)	(-0.6253)
PROF	-1.2235***	-1.2355***	-0.9737***	-0.9926***
	(-10.3207)	(-10.3684)	(-9.3403)	(-9.4558)
LIQD	-0.0041	-0.0039	0.0034	0.0037
	(-1.3142)	(-1.2594)	(1.3338)	(1.4211)
ATSD	0.0462	0.0569	-0.0382	-0.0503
	(0.0978)	(0.1204)	(-0.0732)	(-0.0956)

Panel II: Model Criteria

	Pooled	Time-Effect	Cross-Effect	Two-Way Effect
R^2	0.2023	0.2060	0.4934	0.4966
Adjusted-R^2	0.1942	0.1914	0.4085	0.4085
S.E. of Reg.	0.3505	0.3510	0.2442	0.2442
F-Stat	25.0069***	14.1006***	8.1682***	7.9130***
	[0.0000]	[0.0000]	[0.0000]	[0.0000]
SIC	0.8036	0.8487	1.1296	1.1690
D-W Stat	0.9399	0.9329	2.0478	2.0485

*Note: Asterisks *, ** and *** denote significant at 10%, 5 % and 1% critical values, respectively.*
Figure in ( ) stands for t-value and in [ ] represents p-value

Ownership structure is the second independent variable included as focal point of this study. However, out of 107 firms included as sample, 70% of the firms are family-owned. This has caused inclusion of other structure i.e. state-owned and foreign-owned variables providing insignificant result on the model. Hence, only family-owned proxy by a dummy variable is included in the final empirical model of this study.

The cross-effect procedure is maintained to test the ownership structure variable. From Table 3, goodness of fit as measured by R^2 and adjusted-R^2 shows more than 60% of dependent variables are explained by the independent variable. Standard error of regression is low and Durbin-Watson value is within acceptable range. The model is valid as reflected in F test.

Basing on data from Model Criteria of Panel II from Table 3 and Table 4, it is obvious that dependent variables are better explained by the independent variable which is measured by comparing goodness of fit test. The R^2 and adjusted-R^2 of the second model in higher, i.e. more than 60%, compared to the first one which explained only 40% of the independent variables.

The second model that used both firm financial characteristics and ownership structure is a better model compared to the one that used only firm financial characteristics. Thus, in this study, empirical model which has both firm financial characteristics and ownership structure would be used. From this model which is derived after inclusion of FAMO, it is apparent that SIZE, which was negatively related with DEBT at 1% significant level earlier changed to positive relationship with DEBT at 10% significant level. This is in accordance to the past literature review i.e. Gaud et al. (2005); Arslan and Karan (2006); Huang and Song (2006); Delcoure, (2007) and Mitton (2008). Influence of family ownership in the form of negotiation for lower transaction cost incurred by large firm was possibly among the reasons for the positive relationship between SIZE and DEBT after inclusion of FAMO. Hence, this study supports the hypothesis that there is positive relationship between size of firm and debt ratio.

Relationship of DEBT and GROW remain insignificant. Therefore, this study rejects the hypothesis that there is negative relationship between growth of firm and debt ratio. The practical inference that could be made from this result is that the time horizon used for this study. The post year 2000 has been a rough period for business fraternity in the region (Tam & Tan, 2007). Negative effect from September 11 attack, Afghanistan and Iraq invasion and SARS epidemic might directly and indirectly affected the business sentiment which procrastinated with growth rate of individual firms (Mitton, 2002; Deesomsak et al., 2004). Thus, limited growth opportunities had failed to have significant effect on debt of local firms.

It is apparent that PROF remains with negative relationship at 1% significant level as estimated earlier without the FAMO variable. Thus, this study accepts the hypothesis that there is negative relationship between profitability of firm and debt ratio. It is consistent with studies by Booth et al. (2001), Chen (2004), Gaud et al. (2005) and Deesomsak et. al, 2004. Aftermath of the crisis, many public listed firms tightened their belt in terms of borrowings. This may additionally explain the negative relationship between debt and profitability of firms used in this study.

Table 4.Estimated Panel Analysis- The Impact of Family-Owned Firm

Panel I: Estimated Model	
	Cross-Effect
CONSTANT	0.0598
SIZE	0.0195***
	(3.8537)
GROW	-0.0001
	(-1.8352)
PROF	0.7695***
	(-14.9317)
LIQD	-0.0135***
	(-3.2842)
ATSD	-0.0451***
	(-6.1927)
FAMO	-0.0037
	(0.8999)

Panel II: Model Criteria			
R^2	0.6408	S.E. of regression	0.2261
Adjusted R^2	0.6339	Durbin-Watson stat	2.0253
F-statistic	64.6381 (0.0000)		

Note

- *Asterisks *, ** and *** denote significant at 10%, 5 % and 1% critical values, respectively.*
- *Figure in ( ) stands for t-value and in [ ] represents p-value*

Interesting point of this study is the indirect impact of FAMO on DEBT via LIQD and ATSD. These two variables were estimated with negative relationship with DEBT at 1% significant level after the inclusion of FAMO variable in the empirical equation. Explanation to these changes in the relationship can be associated with influence of family ownership. Controlling stake by family would result in no separation of ownership and control in these firms. Hence, the shareholders themselves would act as the managers – causing the absence of agency cost problem. Borrowing would not be preferred if the firms' liquidity level is good as the owners probably intends to avoid high interest expense. With this, in this study, the hypothesis that state there is negative relationship between liquidity level and debt ratio is accepted. This is in line with the argument by Deesomsak et. al. (2004). Similarly, the hypothesis that there is negative relationship between interest coverage and debt ratio is also accepted which was also indicated by Harris and Raviv (1990), Eriotis et al. (2007) and Manos et al. (2007).

FAMO has negative relationship with DEBT as reckoned in literature review. However, this was not proven at any significant level. This could be related to the fact that bank's lending practices has changed drastically after the 1997 financial crisis, where character or

name lending is no more an element in bank's credit decisions. Importance is given to financial standing, past track record in banking relationship and feasibility of the purpose of lending. Hence, family ownership of firm possibly has no direct impact on the firm's capital structure, though the relationship is presumed to be negative.

Conclusion and Direction for Future Research

This study had shed some light on prevalent capital structure trend of public listed companies in Malaysia. One of last study conducted pertaining same purpose in Malaysia had concluded ownership structure ownership concentration mitigated conflict between managers and owners (Suto, 2003). However, in this study, family ownership structure had little direct significance on capital structure. Nevertheless, it had affected the other independent variables, namely liquidity and ability to service debt, to have significant effect on capital structure. Hence, concentrated ownership has effect on the way the companies decide on their financing methods to be aligned with prudent and sensible reasoning. This is important as pre-crisis period was plagued with negligent practice that led to collapse of large conglomerates.

The result of this study together with that of Suto (2003), Zuo and Xiao (2006) and King and Santor (2008) had similar supposition that concentrated ownership, in this case family ownership, had direct or indirect effect on capital structure decisions of firms. This shows that corporate governance dimension in terms of ownership structure is also one of the factors that affect capital structure of local public listed companies. This can be inferred as improvement compared to the situation before 1997 financial crisis, where corporate governance was considered as weak link in corporate environment (Tam and Tan 2007). Thus, this study is important in understanding the change in trend of local public listed companies in their financing behavior.

As for other studies, this one also carries its limitations. Firstly, the sample chosen is only from Industrial Product sector of Main Board of Bursa Malaysia. Secondly, ownership structure for this study was only confined to family-owned, instead of state-owned and foreign-owned. This was because the Industrial Product sector of Main Board of Bursa Malaysia has less representation from state-owned and foreign-owned. Therefore, the effect of having owners from these institutions in decision pertaining to capital structure was not able to be identified. In determining the ownership structure, dummy variables were used to differentiate the type of ownership. Due to limitation in data and access to information, the exact percentage of the ownership was not being able to be included in the study. Finally, some other independent variables identified in recent literature were not able to be included in this study such as tax-effect and stock price movement. Main reasons for this were inadequate access to the data and complication is compiling these data. Thus, certain interesting elements were not being able to be highlighted.

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