THE LINKAGE BETWEEN POLITICAL PATRONAGE AND CAPITAL STRUCTURE: EVIDENCE IN MALAYSIA

BY

CHIN CHEE WEI
LAU JAE JIET
PETER CHRYSOLOGUS BOON YEW HANN
PHOON SAU HONG
TOO LAY HONG

A research project submitted in partial fulfillment of the requirement for the degree of

BACHELOR OF FINANCE (HONS)

UNIVERSITI TUNKU ABDUL RAHMAN

FACULTY OF BUSINESS AND FINANCE
DEPARTMENT OF FINANCE

AUGUST 2013

DECLARATION

We hereby declare that:

(1) This undergraduate research project is the end result of our own work and that due acknowledgement has been given in the references to ALL sources of information be they printed, electronic, or personal.

(2) No portion of this research project has been submitted in support of any application for any other degree or qualification of this or any other university, or other institutes of learning.

(3) Equal contribution has been made by each group member in completing the research project.

(4) The word count of this research report is _____12,183_____

Name of student:	Student ID:	Signature:
1. Chin Chee Wei	08ABB06275	_____
2. Lau Jae Jiet	09ABB03130	_____
3. Peter Chrysologus Boon Yew Hann	10ABB01097	_____
4. Phoon Sau Hong	10ABB00913	_____
5. Too Lay Hong	10ABB00713	_____

Date: _____

ACKNOWLEDGEMENTS

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LIST OF ABBREVIATIONS

BAFIA	Banking and Financial Institutions Act 1989
EPF	Employee Pension Fund
FCFT	Free Cash Flow Theory
FEM	Fixed- Effect Model
FNCL	Firms under Financial Sector
GLCs	Government- Linked Companies
GLICs	Government- Linked Investment Companies
GMM	Generalized Method of Moments
GOV	Government Ownership
GOV_DUMMY	Government Ownership Dummy
GOV_INC	Government Ownership Increased Dummy
KWAP	Kumpulan Wang Amanah Pencen
LM	Lagrange Multiplier
LTAT	Lembaga Tabung Angkatan Tentera
LTH	Lembaga Tabung Haji
MKD	Menteri Kewangan Diperbadankan
Non-PCON	Nonpolitically Connected
OBS	Observations
OLS	Ordinary Least Square
PCON	Politically Connected
PNB	Permodalan Nasional berhad
POT	Pecking Order Theory
REM	Random- Effect Model
ROA	Return on Assets
SIZE	Firm's Size
SME	Small and Medium Enterprise
TANASSET	Tangible Assets
TOT	Trade-off Theory
YD	Year Dummy

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PREFACE

This research is submitted as a part of the requirement to fulfill for the Bachelor of Finance (Hons) course. The title of this paper is "The Linkage between Political Patronage and Capital Structure: Evidence in Malaysia". It revolves around the determinants of the capital structure of firms in Malaysia.

Determining the optimal capital structure is a challenging task for the financial managers. A wrong decision made by the financial managers may cause financial distress of firms and bankruptcy subsequently. Although debt financing may have higher cost than equity financing, the debt financing is still widely used by most of the firms because of the advantage on the corporate income tax system.

The Malaysian government plays a role of patron to selected firms. It might be in the form of direct equity ownership of the firms, indirect connection with the firms through the GLICs. The potential of the linkage between the firm's leverage and political patronage is a very important issue. The past researches on this topic are too less and therefore more researches should be done to explore the relationship between the firm's leverage and political patronage.

ABSTRACT

The objective of this study is to examine the linkage between the political patronage and leverage of the firms in Malaysia by using pooled OLS model. The results showed that there is a significant positive relationship between the political patronage and firm's leverage. When there is an increase of government ownership compared with last period, there will be an increase at the firm's leverage too. Moreover, this result also suggests that the relationship between the political patronage and firm's leverage is still effective even though the firms are now free from the financial crisis effect.

Other than the political patronage, the researchers also include other variables such as size, profitability, tangible assets , financial sector dummy and year dummy. Size, tangible assets and financial sector dummy have a positive impact to the leverage whereas the profitability has a negative impact to the leverage.

CHAPTER 1: RESEARCH OVERVIEW

1.0   Introduction

First and foremost, the researchers would like to give an overview of the capital market in Malaysia. Malaysia is a country where businesses and investments are accessible and recognized internationally. The common misperception to Malaysia is that there are restrictions of capital flow in and out from this country. It may true if it is before the early 2000s. However, these restrictions have been removed after the financial crisis in order to attract more Foreign Direct Investment (FDI). Nowadays, investors are free to remit any amount of funds from Malaysia at any time. According to Diagram 1.1, Malaysia's capital market has increased a significant amount over the past 10 years, from RM717.5 billion in 2000 to RM2.0 trillion in 2010. From 2000-2010, stock markets have grown by 11.1% in average, annually while the bond markets have grown by 10.8% in average, annually. That is the reason why Malaysia's bond market is the third largest in Asia. Besides that, Malaysia has the largest number of listed companies in ASEAN, including the Main Market and Ace Market in Bursa Malaysia.

Malaysia also has the largest market capitalization in the sukuk market at the position of 64% of total sukuk outstanding in the world (Securities Commission Malaysia, 2011). Thus, Bursa Malaysia has become the world's largest exchange for listed sukuk. As the leading market for sukuk market, the primary objective is to generate income from the roll out of the projects, such as the integrated urban mass rapid transit system, which will require RM36.6 billion to run the project.

Malaysia's capital market regulatory framework is mainly controlled by the Securities Commission. It is supported by Bursa Malaysia who manages the affairs of listed companies. There are two types of regulatory framework adopted by the capital market in Malaysia; conventional system and Islamic system. Under the Islamic system, the Securities Commission is not the sole regulatory body for the framework, but there is another regulatory body called the Shariah Advisory

Council. "Shariah" can be defined and explained as the Islamic Laws that mainly holds and regulate the entire Islamic financial system's basis.

Figure 1.1 Comparison of Capital Market Size between the Year 2000 and 2010
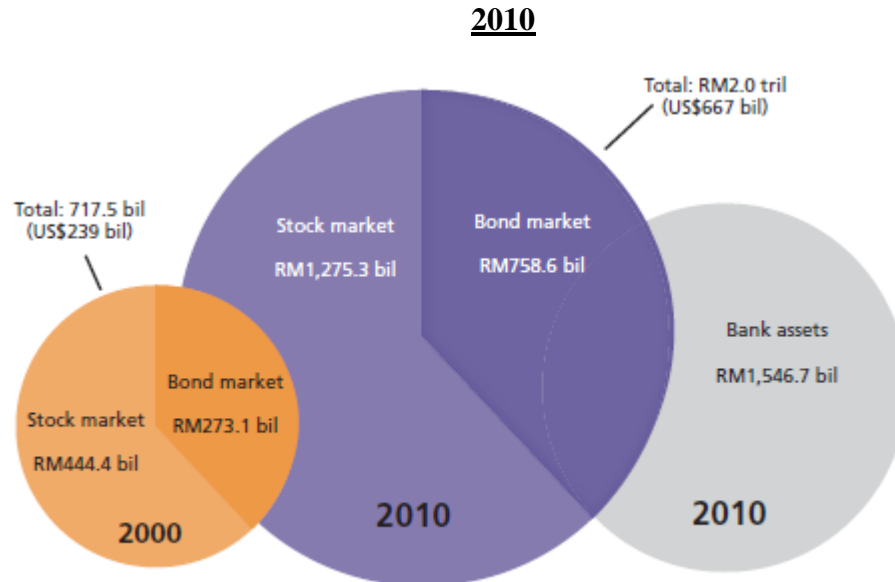
(Source: Malaysia's Capital Market. (2011). Transforming Vision into Opportunities. Retrieved from http://www.umlib.um.edu.my/publications/apa-guide.pdf)

1.1 Research Background

Leverage is defined as the amount of borrowings used by a company to finance the purchase of a company's asset. There are two options for business owners to choose from in financing the purchase of company assets, debt or equity. It is hard to define debt or equity financing in a simple way for a company, it all depends on the nature of the business.

Determining the optimal capital structure is a challenging task for the financial managers. A wrong decision made by the financial managers may cause financial distress of firms and bankruptcy subsequently. Although debt financing may have higher cost than equity financing, the debt financing is still widely used by most

of the firms because of the advantage on the corporate income tax system. According to Classens, Djankov & Lang (1998), they mentioned that Malaysia's firms widely used debt in the 1990s mainly due to the loophole in the corporate income tax system which benefited corporate borrowers. According to Li, Yue & Zhao (2009), interest payments on debt are tax deductible expenses in China and the tradeoff theory states that the optimal capital structure also relied on the firms' balancing tax savings from debt against deadweight bankruptcy costs.

Political patronage is the support, encouragement, privilege, or financial aid provided by the government or politicians to the selected firms in order to achieve the nation's economic goals. In Malaysia, one of the ways of significant influence of political patronage to the firms is demonstrated through the GLICs. GLICs are the government linked investment companies that are powered and backed by the Ministry of Finance with the main objective of placing their funds into potential firms from various sectors – manufacturing, finance, trading, plantation, transportation, services, etc. This research assumes that the political patronage can be quantified by computing the share ownership of the selected firms by GLICs. In order to capture the effect of the "patronage", the total share ownership includes the involvement of the seven main GLICs stated by Khazanah Nasional which is used as the proxy of political patronage. Subsequently, two more dummy variables are created based on this share ownership. Therefore, there are total three proxies for political patronage used in this research.

Similarly, some researches that have been done previously is consistent with this paper's assumption on political patronage. According to Johnson & Mitton (2003) and Fraser, Zhang & Derashid (2006), they found that there is positive relationship between leverage and political patronage which suggests that the firms with political patronage tend to carry higher debt than other institutional firms. Besides that, Feng, Sun & Tong (2004) report that the leverage level of Government-Linked Companies is reduced after privatization. The author, Richter (2010), explained that the politicians manipulated domestic bankers' loan decision. Therefore the political patronage firms are highly leveraged due to easier accessibility to loans.

1.2   Problem Statement

Since the last few decades, political patronage has been a hot topic and it has been widely discussed in academia. Many researchers have presented concern regarding this issue, which focuses on the effect of political patronage on a firm's structure. Regarding the various studies have been done by researchers, political patronage has a significant impact on leverage. Some researchers have argued that political patronage may have been misused for personal purpose, such as "recognition" of minority communities through the appointment of their members to high profile positions (Bearfield, 2009). According to Gomez & Jomo (1997), it shows the political connection between primary minister, others politician and United Malays National Organization (UMNO), an ethnically based political party that dominates the government's ruling coalition with main listed firms in Malaysia.

Even though it is proven that leverage is affected by political patronage, there is less agreement that political patronage variable measured in shareholdings percentage is more accurate or comprehensive rather than political dummy variables from previous researches. During the financial crisis, firms with political patronage are believed to recover better from crisis. This issue has been argued and various researches have been done to investigate the relationship between political patronage and leverage during financial crisis. According Bliss & Gul (2012), most firms had lower earnings and suffered from financial distress during the late 1990's and took considerable amount of time to recover from post-crisis period that was examined from year 2001 to 2004. However, there is less researches demonstrated to investigate whether the relations between political connection and firm's leverage is still effective when firms are free from crisis.

Sapienza (2004) mentioned that lending behavior of banks is influenced by the electoral results of the party affiliated with the bank. Eventually, it will affect the market rates in financial market. Previous researchers conclude that firms with higher political connection tend to have higher leverage (Fraser et al., 2006). With more political patronage or political intervention to firms, the financial market will become inefficient and might create potential crisis that might occur in the

future (Taylor, 2009). If these issues are not handled well by government, it may affect the whole market efficiency and soundness.

1.3 Research Objectives

This research is composed with objectives from two perspectives. There are the general objective and the specific objectives.

1.3.1 General Objectives

The broad objective is to examine the factors that would affect the level of leverage within a selected set of data of public listed companies in Malaysia.

1.3.2 Specific Objectives

The specific objectives proposed in this study are:

1) To examine the relationship between political patronages and firm's leverage.
2) To examine the relationship between sizes of the firm and firm's leverage.
3) To examine the relationship between profitability of the firm and firm's leverage.
4) To examine the relationship between tangible assets of the firm and firm's leverage.

1.4   Research Questions

The research questions raised from this study are:

1) Is there any significant relationship between firm's leverage and at least one of the independent variables?
2) Does political patronage have significant effect on firm's leverage?
3) Does size of the firm have significant effect on firm's leverage?
4) Does profitability of the firm have significant effect on firm's leverage?
5) Do tangible assets of the firm have significant effect on firm's leverage?

1.5   Hypotheses of the Study

1.5.1 Political Patronage

Political patronage or political connection is the one of main issues discussed in this research. Previous researchers have concluded that political patronage or political connection have significant impact on firms' leverage. Researchers believe that firms with higher political connection tend to have higher leverage in their corporate financing structure. According to Fraser et al. (2006), they found that Malaysian political connected firms are positively associated with leverage. Additionally, firms with political connections are less vulnerable during crisis and it is easier to recover from crisis. Ebrahim, Girma & Shah (2011) found that firms with political connection generally have a higher leverage ratio for both periods, either pre-crisis or post-crisis periods. Politically connected firms are allowed to maintain the leverage level which is higher than other firms and are able to borrow more from banks. Therefore, by raising their leverage during crisis enable the firms to react and recover quickly from unpredictable crisis. Firms with political patronage are predicted to have higher leverage.

H_0: Political patronage has no significant relationship on firm's leverage

H_1: Political patronage has significant relationship on firm's leverage

1.5.2 Firm Size

Firm size is one of the main concerns to investor when they are making investment decisions. This is because they assume that the firms that have large firm size have lower default risk. According to Vassalou & Xing (2004), the small firms have much higher default risk than big firms, and default risk decreases monotonically as size increases. In addition, firm size is one of the common variables used to explain the firm debt. The firm size is an important factor to influence the ability to access to loans. Hovey (2010) found that the firm specific factors are relevant in explaining firm leverage such as growth opportunities, size and tax shields. According to Ferri & Jones (1979), large firms have an advantage over smaller firms when accessing the credit markets and they are able to borrow under better condition. This indicates that when the firm size increases, it will lead to the increase in the leverage ratio for a firm. Based on the argument above, firm size is predicted to have positive impact to leverage.

H_0: Firm size has no significant relationship on firm's leverage

H_1: Firm size has significant relationship on firm's leverage

1.5.3 Profitability

Return on assets (ROA) is used as the proxy of profitability in this research. ROA is one of many financial ratios provided by public companies that is examined and used to enhance investor's information in deciding investment decisions. The ROA indicates the profitability of the firm relative to its total assets, thus giving potential investors the idea as to how the firms are effectively managing their assets to generate earnings. From a more specific perspective, the ROA can be used as a profitability measure and also be construed as a proxy for bankruptcy risk (Frazer et al., 2006). According to Johnson & Mitton (2003), a firm with higher debt would naturally be expected to perform worse (especially during crisis) because of the effect of leverage on a firm's co variation with the market

and also because the depreciation of the local currency will hurt a firm if any of its debt is denominated in foreign currency. This is also consistent with the findings suggested by Myers (1977) that more profitable firms had lower debt ratios. Based on this note, ROA (profitability) is predicted to be negatively correlated with the firm's leverage.

H_0: Return on Assets (Profitability) has no significant relationship on firm's leverage.

H_1: Return on Assets (Profitability) has significant relationship on firm's leverage.

1.5.4 Tangible Asset

Tangible assets can be categorized as fixed assets and current assets such as property, machinery, land, building and even real current assets. Tangible assets may be used as collateral and may be associated with higher levels of leverage (Baker & Wurgler, 2002). Tangible assets also represent the value of the firm because if the firm have good credit ratings, it would be easier for them to acquire loans to run the operations of the business compared to the firms with limited tangible assets. From the article of Ting & Lean (2011), they found that firms with higher ratio of tangible assets may be able to raise debt at a lower cost of borrowing. Besides that, tangible assets help firms to build their confidence to their creditors. Sayilgan, Karabacak & Küçükkocaoğlu (2006) found that the tangible assets will affect the borrowing decisions of the firm because they are less subject to informational asymmetries and they have a greater value than intangible assets in case of bankruptcy. Several researchers have found that there is positive correlation between tangible assets and firm's leverage (Fraser et al., 2006; Hovey, 2010; Ting & Lean, 2011) whereas in the research done by Sayilgan et al. (2006), he found that tangible assets is inversely correlated with the firm's leverage. Based on the majority result, tangible asset is predicted to be positively correlated with the firm's leverage.

H_0 : Tangible asset has no significant relationship on firm's leverage.

H_1: Tangible asset has significant relationship on firm's leverage.

1.6   Significance of study

Earlier on, most of the research done regarding the impact of political patronage on firm's capital structure focused on the sample period of post financial crisis. Bliss & Gul (2012) focused on the sample period of 2001-2004 just after the financial crisis of 1997 and found that most of the firms tend to increase the amount of debt of firm's capital structure after the financial crisis due to lower cost of financing. The impact of financial crisis of 2006 and 2008 on firm's capital structure was completely reversed by the end of 2010 claimed by Fosberg (2012). It proved that after the worst part of financial crisis passed, firm's capital structure will returned back to their pre-crisis levels because firms take time to recover after the impact of financial crisis. The study contributes to existing literatures by analyzing the relationship between political patronage and firm's capital structure in Malaysia and focused on the sample period of 2005-2009 which is not affected by financial crisis. The study investigates whether the relationship of political patronage and firm's capital structure is still effective in the event that free from financial crisis.

On the other hand, the researchers have used the government ownership increased dummy that had never been done before. The interpretation for the coefficient of the dummy is more specific and direct to explain the relationship between leverage and political patronage compared to past researches. With that being said, the uniqueness of the variable differentiates this research with the previous one. This study also examines on few significant variables which includes firm size, profitability, tangible asset and political patronage. The purpose of only including four significant variables is to reduce the number of independent variables in order to obtain more accurate findings unlike what that has been done with previous researchers.

In addition, the finding of the research will be present to the university and mainly concerned for academic purposes. Moreover, the findings of the research may provide usefulness for shareholders, corporate officers and analysts. Corporate officers and shareholders may want to look further into the firms' capital structure because it can determine the returns earned by the firms and whether the firms will able to survive recessions.

1.7   Chapter Layout

This paper is organized as follows. Chapter 2 will include further studies and analyzing of papers from the previous researchers. In chapter 3, the data description, the description of statistical tests will be presented. By using the data, researchers will conduct the statistical test and report the results in Chapter 4. Last but not least, researchers will summarize the results and further discuss its implications in the last chapter of this research.

1.8   Conclusion

With a brief reviewing on the past literature, the researchers noticed that each of the independent variables have significant relationship with leverage especially the variable of political patronage. This has led the study of this paper to the next step which is to examine deeper into previous literatures regarding to leverage, size, profitability, tangible asset and political patronage.

CHAPTER 2: LITERATURE REVIEW

2.0   Introduction

This chapter is to study existing work done by previous researcher so that the important variables and their relationships with leverage can be reviewed and identified. In this chapter, researchers will focus more on the impact of political patronage towards leverage. Besides that, three independent variables such as firm size, profitability and fixed assets will be added to which each of them would contribute significance impact to the degree of leverage. These variable additions will be discussed in details separately in 2.1. Following to that, the research framework will be shown in 2.2 along with the diagram of the expected relationships between leverage and all the variables.

2.1   Review of the Literature

2.1.1 Leverage

Leverage refers to the effects that fixed costs have on the returns that shareholders earn (Gitman & Zutter, 2012). The degree of leverage depends on the mixture of long-term debt and equity maintained by the firm which can affect its return and risk. Modigliani & Miller (1958) showed that in a condition of perfect capital market, the value of one firm is irrelevant with its capital structure. In other words, debt and equity can be the perfect substitutes for each other. However, after a few years of further studies, they realized they were wrong in some concepts regarding their Model I. Thus, they reviewed the model and made corrections (Modigliani & Miller, 1963). They contended that the deduction of interest from the corporate profits can reduce the corporate tax paid whereas dividend could not. As such, the Model II showed that the capital structure

does matter in regards to the firm's value. With that being said, this study intends to acknowledge the importance of knowing the determinants of capital.

According to Harris & Raviv (1991), firms' leverage increase with its fixed assets, non-debt tax shields, investment opportunities and firm size and decrease with the probability of bankcruptcy, profitability and so on. The researchers limit the number of variables to three which found most consistently correlated with leverage in previous researches, which are fixed assets, firm size and profitability (Harris & Raviv, 1991; Fraser et al., 2006; Bliss & Gul, 2011).

2.1.2 Leverage and Political Patronage

Referring from previous researches, most of the studies have stated that government has positive significant impact to firm's leverage. According Fraser et al., (2006), a positive and significant link between leverage and political patronage is found for all three different measures of political patronage, which are economic, social and personal perspectives. According to Bliss & Gul (2012), it is found that political connection (PCON) firms to have significantly higher levels of leverage and lower return on assets, are significantly more likely to have negative equity, and more likely to report a net profit loss.

Some researchers have compared the performance of political connected firms and unconnected firms. According to Faccio (2010), connected firms have higher leverage, pay lower taxes and have stronger market power compared to non-connected firms. Researchers have also studied on the lender behavior towards political connected firms and found that connected firms tend to borrow more because they experience weaker loan requirements and favorable interest rates from the lender (Faccio, 2010). According to Borsuk (1993), many firms especially the ones with political

patronage have easier access to bank loans. It is found that firm with political patronage is positively significant to firm's debt. According to Mitchell & Joseph (2010), they found that connected firms outperformed unconnected firms in terms of financial variables, regardless of the nature of connection. However, the firms with unofficial political connections tend to be less profitable than Government Linked Companies (GLCs). According Johnson & Mittion (2003), they also found that firms with political patronage tend to have more debt and conclude that political connected firms outperformed unconnected firms in the period after capital control had been imposed.

Besides that, there are researchers who used the 1997 financial crisis as a benchmark to determine the connection between firm's leverage and government involvement. According to Ibrahim et al., (2011), firms with political connection generally have a higher leverage ratio for both periods which are pre-crisis period and post-crisis period.

2.1.3 Leverage and Firm size

According to Myers (1977), Ferri & Jones (1979), and Deesomsak, Paudyal & Pescetto (2004), the firm size is positively correlated to leverage since the large firms tend to have lower agency cost of debt, relatively smaller monitoring costs, less volatile cash flows, easier access to credit market and require more debt to fully benefit from the tax shield. According to the Sayilgan et al. (2006) case in Turkey, an emerging market reveals that size and growth opportunity in total assets have positive association with the debt level as governments are more prone to protect larger firms and banks lend more capital to these firms than smaller firms. According to Manos, Murinde & Green (2007), the group affiliated firms tend to have higher debt ratios, however group affiliated and independent firms is not driven by group size. To further explain, the study suggests that group affiliated firms enjoy exceptional access to

government and foreign loans and the capital structure decisions are insensitive to the non-debt tax shields and illiquidity of stocks.

Furthermore, Hooks (2003) mentioned that the firm size will affect the public information to produce; therefore the small firms tend to have lower leverage compared to the large firms. In addition, small firms are also difficult to monitor and mostly will be denied by banks for big debt loans. According to Titman & Wessels (1988), a number of authors suggested that leverage ratio may be related to firm size. Warner (1977) and Ang, Chua & McConnell (1982) stated that the direct bankruptcy costs increases when firm value decreases and large firms tend to be more diversified which in turn resulting in large firms being more likely to be highly leveraged (as cited in Titman & Wessels, 1998).

However, Titman & Wessels (1988) shows a different result by saying that there is a negative relationship between debt ratios and firm size. In addition, Wald (1999) found that size is positively correlated with debt with developed country except for Germany which has a negative relationship. Chen (2004) also claims that Chinese firms have a negative relationship between size and long-term debt which is mainly contributed by centralized state control.

2.1.4 Leverage & Profitability

According to Fraser et al. (2006), PCON firms with higher ROA are positively associated with leverage. They have also found that the link between political patronage and firm leverage is indirect through firm size and profitability. Besides that, profitable firms with political patronage tend to carry more debt than mere firms with political patronage. This is probably driven by the trade-off theory (TOT) proposed by Miller (1977), implying that if firms are more profitable, they prefer debt financing to equity financing as a means to further improve their profits. Additionally,

Gaud et al. (2005) had similar results, noting that if past profitability is a good proxy for future profitability, profitable firms could borrow more, as the likelihood of paying the loans is greater. These results are also consistent with the free cash flow theory (FCFT) proposed by Jensen (1986), which predicts that profitable companies employ more debt as a mechanism to control their managers. Gungoraydinoglu & Öztekin (2011) also portrays consistent results that higher profitability and economic growth increase agency costs of equity, leading to higher leverage according to the agency view of the TOT.

However, there are arguments that profitability is negatively associated with leverage. The latter provides strong empirical results on capital structure, in general, that leverage increases with fixed assets, non-debt shields and investment opportunities, whereas on the other hand, decreases with volatility, probability of bankruptcy and profitability (Harris & Raviv, 1991). This is consistent with the Pecking Order Theory (POT) of Myers & Maljuf (1984), stating a negative relationship between profitability and leverage. The rationale behind their argument is that firms with high profitability are able to internally generate large amount of funds and therefore requiring less amount of debt in financing. Although Chen (2004) has also found consistent results of negative relationship between profitability and debt in Chinese firms, it is suggested that it might not be proposed by the Pecking order hypotheses but rather by the strict controls and regulations in China, inducing firms to use equity finance as oppose to debt.

Furthermore, according to Bliss & Gul (2012a), leverage is negatively associated and significantly associated with ROA. This result suggests that the higher borrowing politically connected (PCON) firms have lower ROA than nonpolitically connected (non-PCON) firms, which is in line with the findings of Bliss & Gul (2012b), that PCON firms are perceived by lenders as being of higher risk and, as such, are charged with higher interest rates.

2.1.5 Leverage and Tangible Asset

Tangible assets are a key determinant of the firm leverage claimed by Rampini & Viswanathan (2009). The relationship between tangibility and capital structure, theories generally state that tangibility is positively related to leverage. If a firm's tangible assets are high, assets can be used as collateral, diminishing the risk of agency cost of debt suffering by lender. Hence, high fraction of tangible assets is expected to associate with high leverage (Huang & Song, 2006).

From the paper of Gaud, Jani, Hoesli & Bender (2005), they found that tangible assets are likely to have an impact on borrowing decision of a firm because they are less subject to informational asymmetries and they have a greater value than intangible assets in case of bankruptcy. This is mainly because it can provide positive signal to the creditors and can request the selling of assets in the case of default. Rajan & Zingales (1994) found out the greater the proportion of tangible assets on the balance sheet, lenders are more willing to supply loans, thus leading to higher leverage.

Campello & Giambona (2010) had examined the effect of asset tangibility on capital structure by exploiting variation in the salability of corporate assets. Across the various categories of tangible assets, land and buildings, have the most explanatory power over leverage. Giambona & Schwienbacher (2007) also proved that tangibility increase debt capacity only for credit constrained companies which are firms with limited access to the debt market while tangibility and leverage are independent decisions for credit unconstrained firms. Results from their paper indicate that only hard tangible assets which are land and buildings will increase debt capacity.

The differences between short term debt and long term debt also will influence the decisions of capital structure. The findings indicate that negative relationship between tangibility and debt ratio for GLCs and

NGLCs in Malaysia (Ting & Lean, 2011). Suto (2003) also managed to prove that the effect of tangible asset on firm's leverage is expected to be weaker in Thailand and Malaysia as they have primary banks as their shareholder, which gives them easier access to bank loans and less need for collaterals.

2.2   Research Framework

Adhikari, Derashid & Zhang (2006) and Fraser et al. (2006) explained that there is various tests can be conduct to determine which model (OLS, FEM, or REM) produces the most adequate specification. Both of their papers have estimated all three models and have chosen the most appropriate model based on the statistical tests. Both of the research papers explained that the fixed-effect model (FEM) overcomes the simply-pooled OLS problems by adjusting the firm-specific and time-specific effects through the firm-specific and time-specific intercepts in the model. Adhikari et al. (2006) and Fraser et al. (2006) also mentioned that the random-effects model (REM) is able to solve the omitting firm-specific effects problem. Both of these research papers have carried out Lagrange Multiplier (LM) Test, Hausman Chi Square Test and Likelihood Ratio Test to determine the most adequate model and the result shows that the Random Effect Model (REM) is the most adequate model so the result of REM estimates are reported in the paper.

According Ebrahim et al. (2011), authors realized that Generalized Method of Moments (GMM) estimation technique is indeed the most efficient one within the class of instrumental variable estimators. In this paper, researchers employ GMM estimator to analyze the dynamic capital structure under political patronage. The researchers employ this GMM technique because it combines the regression in differences with regression in levels. The GMM estimator will solve the problem of OLS method on dynamic panel regressions that does not yield consistent estimators. Thus, a possible correlation between the lagged of endogenous variables and the residuals will be avoided. Besides that, the correlation between

lag of endogenous variables in the model and the error terms will also be avoided. Therefore, the GMM estimator is more efficient compared to OLS model.

According Yan, Chan & Dang (2011), the researchers use GMM difference dynamic panel estimator developed by Arellano & Bond (1991). Due to the firm-specific effects, possible endogeneity of the regressors could occur along with the presence of the lagged dependent variable, thus this paper uses GMM difference dynamic panel estimator to first differentiate each variable to eliminate the firm-specific effects and then using the lagged levels of the variables as their instruments.

2.3 Conceptual Framework

In this research paper, assumptions are made on how all these variables will effect on the capital structure.

Figure 2.1: The expect relationship between capital structure and political patronage.
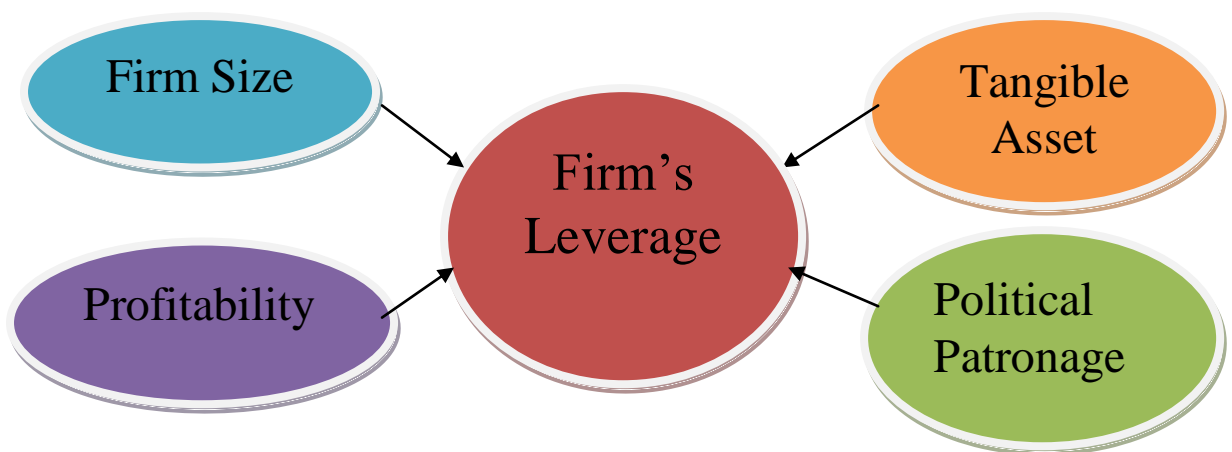
A framework of dependent variable and independent variables were deduced and is stated as above. The relationship of firm's capital structure will be tested with four independent variables which includes firm size, profitability, tangible asset and even political patronage.

2.3.1 Political Patronage

According to Fraser et al. (2006), the findings show that Malaysian political connected firms are positively associated with leverage. Moreover, political connected firm has less impact and it is easier to recover from crisis. The leverage ratio of political connected firms remains constant either for pre-crisis or post-crisis periods and they have higher leverage ratio for both periods (Ebrahim et al., 2011). Thus, political patronage is expected to have positive relationship with the firm's leverage.

2.3.2 Firm Size

Firm size is an important factor to influence the ability of the firm to obtain a loan and also become a main concern for investor to make decision. From the paper of Vassalou & Xing (2004), larger firms tend to have lower default risk whereas smaller firms tend to have higher default risk. Therefore, firm size will affect the public information to produce which indicate that smaller firm tends to have lower leverage than larger firm (Hooks, 2003). Thus, firm size is expected to have a positive relationship with firm's leverage.

2.3.3 Profitability

Profitability of the firm relative to its total assets can provide potential investors some information about how effective a firm is able to manage their assets to maximize their returns. From the paper of Johnson & Mitton (2003), a firm with higher debt is naturally expected to perform worse due to market condition and also depreciation of local currency. Besides that, profitable firms tend to have lower debt ratios (Myers, 1977). Their findings suggested that there is a negative correlation between profitability and firm's leverage. Myers & Maljuf (1984) also found that profitability is

negatively associated with leverage. Firms with high profitability are able to generate large amount of fund internally and requiring less amount of debt to expand their business. This gives this paper an expression to make an assumption that there is a negative correlation between profitability and firm's leverage.

2.3.4 Tangible Asset

Tangible assets stand for some point of view as the value of firm. A firm with good credit ratings gain advantage from that because it is able to obtain the loan more easily than firms with poor credit ratings. From the paper of Ting & Lean (2011), firms with higher ratio of tangible assets are able to raise funds with lower cost of borrowing. Tangible assets can be used as collateral to reduce the risk suffering by lender. Therefore, high fraction of tangible assets is expected to associate with higher leverage (Huang & Song, 2006). Hence, this paper expects that there is a positive relationship between tangible assets and firm's leverage.

2.4   Conclusion

Previous literatures provided in previous researches regarding the impacts of macroeconomic variables on a firm's leverage with political patronage have given this study an insight and better understanding on the capital structure formed by firms under different circumstances. It is important to find out whether political connected firms have significant relationship on the firm's capital structure because the capital structure not only represents the performance of the firm but whether the firm is able to survive during economic downturn. However, these circumstances are mostly provided under the influence of the crisis during the late 1990's, before and after. Hence, it is important to examine whether these relations between political connection and firms' leverage is still effective now when firms are free from crisis. Furthermore, the researchers extend the examination of these

relations by using more accurate and comprehensive techniques to study the political connections as compared to previous researches.

CHAPTER 3: METHODOLOGY

3.0   Introduction

Research methods are ways used to solve research problems in a systematic manner and it shows how the research is done scientifically and appropriately. In order for researchers to achieve certain objectives in the research, sequences of operational steps are required in respects to its procedures, models and methodology. Therefore in this chapter, researchers will explain the various procedures and models that are generally adopted in studying the determinants of leverage along with its logical reasoning behind each variable. This chapter will also further explain the aspects of data collection, methodology adopted, data analyzing techniques concerning the research study.

The selection of methodology methods are heavily influenced by previous literatures which has been done in the previous chapter. The literature review provides future researchers with an idea on what procedures and methods that were used in the past and which procedures and methods that have worked well and showing along the problems faced with those methods. Thus, this not only allows researchers to be in a better position in selecting the right methodology but also providing valid arguments to the research questions that have been brought to light.

Lastly, the research design, data collection methods, data processing and methods of data analysis will be discussed in the following sub topics.

3.1   Research Design

In this study, the quantitative research method has been chosen. The quantitative research consists of a collection of numerical data which will help to answer the

stated research questions. In this case, the research is to examine the relationship between independent variables which are political patronage (Fraser, 2006; Bliss, 2012; Faccio, 2007; Borsuk, 1993; Mitchell, 2010; Johnson & Mitton, 2003), firm size (SIZE) as measured by total assets of the selected companies (Deesomsak, Paudyal & Pescetto, 2004; Ferri et al., 1979; Myers, 1977; Sayilgan, 2006; Manos, Murinde & Green, 2007; Hooks, 2003; Titman et al., 1988; Chen, 2004), profitability as measured by total return on assets (Fraser et al., 2006; Miller, 1977; Gaud et al., 2005; Jensen, 1986; Gungoraydinoglu & Oztekin, 2011; Harris & Raviv, 1991; Myers & Maljuf, 1984; Chen, 2004; Bliss & Gul, 2012), tangible assets (TANASSET) as measured by total tangible assets of the selected companies (Rampini & Viswanathan, 2009; Huang & Song, 2006; Rajan & Zingales, 1994; Campello & Giambona, 2010; Giambona & Schwienbacher, 2007; Ting & Lean, 2011; Suto, 2003) and the dependent variable which is the level of leverage of selected companies in Malaysia.

Besides that, the data set collected for this study are predetermined to yield statistical data as it is the more structured data collection technique. With this technique, it allows researchers to track the trends provided by the summary of the information on the characteristics of the variables. In this research paper, the researchers intend to answer certain research questions that are unclear by using the exploratory research technique to test whether one even or activity causes another. Also, exploratory research is useful in when the research question is unclear to guide the progress of the hypotheses (McDaniel & Gates, 2010). As there have been mixed results of the determinants affecting the level of leverage of companies in Malaysia, it is still unsure whether or not there will be a change of trends in the influence of the determinants in this study.

3.2   Data Collection Method

3.2.1 General description of data format

As mentioned in 3.1, researchers have used quantitative data in the form of secondary. The type of data used is panel data. The sample period starts in the year 2005 and ends in the year 2009. The data collected is in annual form. The whole sample size consists of 76 firms in Malaysia which have been chosen based on the list of "Top 100 companies in Malaysia in terms of market capitalization" provided by Horlic.com in the year of 2010. In the midst of extracting information from the data set, 24 companies were then excluded from the sample size due to the incompletion of data from 2005-2009. Those companies could not provide complete data as needed for they were not listed yet in 2005 or haven already been delisted before 2009.

The sample period that was chosen for this research ranges from the year 2005 to 2009 which is different from previous studies conducted by (Fraser et al., 2006; Bliss & Gul, 2012). It is a continuation of the previous two papers as the sample period conducted from Fraser et al. (2006) was between 1990 to 1999 and the sample period conducted from Bliss & Gul (2012) was 2001 to 2004.

The data set sample is hand-gathered from annual reports published by firms selected based on market capitalization from the year 2005 to 2009. In addition, all the listed firms are required by the KLSE to provide annual audited accounts compliant with Malaysian Accounting Standards Board (MASB). Thus, the accounting data derived from the annual reports are consistent with the accounting standards.

3.2.2 Proxy of political patronage

This paper proposed three proxies of political patronage which are government ownership, government ownership dummy and government ownership increased dummy. These three proxies can only be used as alternatives due to high correlations to each other.

Government ownership (GOV) is a measure of the share ownership by a group of total seven government linked investment companies (GLIC). The seven GLICs are Kumpulan Wang Amanah Pencen (KWAP), Menteri Kewangan Diperbadankan (MKD), Employee Pension FUnd (EPF), Khazanah Nasional, Permodalan Nasional Berhad(PNB), Lembaga Tabung Haji (LTH) and Lembaga Tabung Angkatan Tentera (LTAT). This selection is in accordance with the seven main GLICs stated by Khazanah Nasional Berhad.

Government ownership dummy (GOV_DUM) is dummy variable, which is set equal to 1 if the firm has more than 10% of share ownership by GLICs otherwise zero. Researchers have set a 10% benchmark of corporate share ownership as the minimum percentage to be ranked as 1 for GOV_DUM whereas Razak, Ahmad & Joher (2011) proposed 20% of share ownership as the minimum percentage. Although both are different, but there is no required benchmark to set the respective dummy, it is entirely up to the researchers' decision.

Government ownership increased dummy (GOV_INC) is dummy variable also, which is set equal to 1 if the firm's share ownership by GLICs has increased compared to its previous year, otherwise zero.

3.2.3 Description of Proxy

The data of the variables are gathered as follows. The dependent variable is LEVERAGE and it is a measure of total liabilities over total assets. The other independent variables are SIZE, ROA, TANASSET, FNCL and Year Dummies. SIZE is a measure of common logarithm of total assets, ROA is

a measure of net profit after tax over total assets in percentage form, and lastly TANASSET is a measure of tangible assets over the total assets in percentage form. The researchers have chosen these variables because they are the most consistent factors linked to leverage in previous researches (Harris & Raviv, 1991; Rajan & Zingales, 1995). FNCL is dummy variable, which is set equal to one if the firm belongs to financial sector, otherwise zero. According to Bank Negara Malaysia, all the financial institutions must comply to the Banking and Financial Institutions Act 1989 (BAFIA). They are governed under this independent regulatory body. Therefore, FNCL is created to capture the differences of the firms from financial sector. Year Dummies variable is denoting the different years of the data belongs to from 2005 to 2009 (with 2009 as the base year).

3.3   Data Processing Methods

The researchers use Microsoft Excel to compute all the calculations. It standardizes the formulas and also the number formats. Although the sample period is between 2005 to 2009, but data for 2004 is also needed to complete the government ownership increased dummy. Thus, the data for 2004 is also acquired for this study. However, due to the lack of availability of annual reports for 2004, 4 groups of data have to be cancelled out as they are unable to make comparison without data for 2004. They are PLUS 2005, KLCCP 2005, IJMPLNT 2005, and MEDIAC 2005. Therefore, whenever the government ownership increased dummy is in the model, the sample (N) will be smaller by 4.

In the process of extracting the accounting data that is derived from the annual reports, only the value under the category of "company" were taken instead of category of "group". This is to avoid double counting as the data showing under the "group" category consists of not only the "company" itself but also its subsidiaries. As for the measurement of SIZE, previous studies have used the natural logarithm of total assets (Fraser et al., 2006; Bliss & Gul, 2012). However,

this paper has used common logarithm instead to minimize the difference between SIZE and the other variables, which are mostly in percentage form. Besides that, the tangible asset, which is the numerator of the TANASSET, is equal to property, plant and equipment. In other words, only this category of asset will be treated as tangible asset.

3.4 Statistical Test

3.4.1 Pooled OLS Model

The panel data has combination of both cross-sectional and time series data. There are different types of panel data regression models which include the pooled OLS model, fixed-effect model (FEM) and random effect model (REM). The pooled OLS model is known as time-invariant or the time constant model (Gujarati & Porter, 2009). By referring to previous research, Fraser, Zhang & Derashid (2006), random-effects model were employed to explain the impact of size of firm and profitability to leverage ratio. However, Bliss & Gul (2012) had employed pooled OLS regression analysis to explain the indicator variable of political connected firm, size of firm, return on asset and tangible asset to leverage ratio. Therefore the independent variables of this research are chosen by referring to Bliss & Gul (2012).

The reason why this study uses Pooled OLS regressions model is most probably because the researchers want to assume that the intercepts and slopes are constant across companies and also assuming that there is no time effect in the model. In addition, the pooled OLS model is the simplest and easiest to interpret. In this model, there are initially 4 most significant independent variables included in the model to explain leverage. The following is the estimated economic model formed by researchers:

$$LEVERAGE = \beta_0 + \beta_1\,SIZE_{1it} - \beta_2 ROA_{2it} + \beta_3 TANASSET_{3it} + \beta_4(GOV; GOV\_DUMMY; GOV\_INC)_{4it}$$

Where leverage refers to firm's leverage, β is the coefficients used to explain the degree of determinants affecting the leverage. SIZE is the firm's size, ROA refers to return on asset, TANASSET is the tangible asset owned by firm and Political Patronage is measured by the government ownership (GOV), government ownership dummy (GOV_DUM) and government ownership increased dummy (GOV_INC) alternatively.

The assumption of this model is that there is no heterogeneity, no uniqueness among the different observations across the time, which means the characteristics among observations must be same. If this assumption is violated, the estimated parameter values will become biased, inefficient and inconsistent. In this research, the STATA 12 is being used to run the economic model. The significance or insignificance of the Leverage with each of the independent variables will be determined by STATA 12 along with its positive and negative relationship. If significance exists, it means the independent variable will affect the dependent variable in either a positive or a negative way. If a positive relationship is further detected, it means when the independent variable increases, the leverage will also increase accordingly, vice versa.

3.5   Conclusion

After recognizing the data and methodology that researchers are keen to use, the analysis of data has been conducted in three aspects in the following chapter, which is broken down to descriptive statistics, univariate analysis and regression analysis.

CHAPTER 4: DATA ANALYSIS

4.0   Introduction

This chapter presents the statistical testing and results of the study. In the first section, a summary of descriptive statistics for the five variables will be presented. Next section will be the univariate analysis. Last but not least, the researchers will conduct five different models and compare them to each other. The best model will be chosen based on several criteria.

4.1   Descriptive Analysis

The descriptive analysis helped to summarize 380 observations of public listed companies and converted the data set collected into a meaningful data set which provided information on patterns that have emerged from the data. However, descriptive analysis does not provide any conclusions beyond the data analyzed nor provide conclusions regarding any hypotheses that have been made. They are just simply a way to describe the data set. All data is analyzed in terms of its mean, standard deviation, minimum, and maximum values.

Table 4.1 Descriptive Statistic (N=380)

Variable	Obs	Mean	Std. Dev.	Min	Max
LEVERAGE	380	0.3486	1.0046	0.0000	18.4128
SIZE	380	9.2993	0.6822	7.1778	11.3771
ROA	380	12.8682	83.9782	**-1003.1990**	**1133.9240**
TANASSET	380	10.7581	20.2619	0.0000	90.1573
GOV	380	14.5126	16.4121	0.0000	81.8900

Source: Developed for the research

Notes: Std. Dev., Min and Max stand for standard deviation, minimum and maximum respectively. LEVERAGE = total liabilities over total assets. SIZE = common logarithm of total assets. ROA = net profit after tax over total assets in percentage form. GOV = share ownership by a group of total seven government linked investment companies (GLIC). TANASSET = tangible assets over the total assets in percentage form.

Based on table 4.1, extreme outliers were found in the ROA variable when all observations were grouped and analyzed. Outliers are defined as noisy observations, which does not fit to the assumed model that generated the data (Hautamäki, Cherednichenko, Kärkkäinen, Kinnunen, & Fränti, 2005). According to table 4.1, the minimum value for ROA is -1003.1990000 and the maximum value is 1133.9240000. The outliers imperatively caused the results of the model to be inconsistent. According to Guha, Rastogi, & Shim (1998), in clustering models, outliers are considered as observations that should be removed in order to make clustering more reliable. Therefore, a total of 8 extreme outlier values were removed from the data set to improve the descriptive analysis which resulted to a total of 372 observations remaining. From the 8 observations that were removed, 5 belonged to the extreme positive values (DiGi 2006-09 & Boustead 2007) and 3 belonged to extreme negative values (Boustead 2005-06 & PARKSON 2007) in the data set. These observations were manually removed from the 1% (lower tail) and 99% (upper tail) distribution of the data set.

According to table 4.2, the new results observed from the descriptive analysis shows that the standard deviation of the ROA significantly improved from 83.9781500 to 13.7849800. The results in turn transformed the ROA to have a significant relationship with leverage as compared to before the outliers were removed.

Table 4.2 Descriptive Statistic (N=372)

VARIABLE	MEAN	STD.DEV.	MIN	MAX
	ALL (N=372)			
LEVERAGE	0.2904	0.2506	0.00006	1.7779
SIZE	9.3253	0.6604	7.8827	11.3771
ROA	11.7568	**13.7850**	**-38.4953**	**71.7675**
TANASSET	10.9880	20.4177	0.0000	90.1573
GOV	14.6873	16.5159	0.0000	81.8900

Source: Developed for the research

Notes: Std. Dev., Min and Max stand for standard deviation, minimum and maximum respectively. LEVERAGE = total liabilities over total assets. SIZE = common logarithm of total assets. ROA = net profit after tax over total assets in percentage form. GOV = share ownership by a group of total seven government linked investment companies (GLIC). TANASSET = tangible assets over the total assets in percentage form.

Table 4.3 Univariate Analysis

VARIABLE	MEAN		MEAN DIFFERENCE (t-statistic)		MEAN		MEAN DIFFERENCE (t-statistic)	
	GOV_DUM=0	GOV_DUM=1	(pooled)	(scatterwhite)	GOV_INC=0	GOV_INC=1	(pooled)	(scatterwhite)
LEVERAGE	0.2747	0.3074	(1.26)	(1.25)	0.2732	0.3195	(2.30)**	(2.27)**
SIZE	9.227	9.4325	(3.03)***	(3.02)***	9.2916	9.3824	(1.24)	(1.23)
ROA	13.3211	10.0519	2.3**	2.31**	12.777	10.0269	2.97***	3.00***
TANASSET	7.712	14.5583	(3.27)***	(3.21)***	12.5353	8.3642	1.36	1.37

Notes: LEVERAGE = total liabilities over total assets. SIZE = common logarithm of total assets. ROA = net profit after tax over total assets in percentage form. TANASSET = tangible assets over the total assets in percentage form. GOV_DUM = 1 if the firm has more than 10% of share ownership by GLICs; 0 otherwise. GOV_INC = 1 if the firm's share ownership by GLICs has increased compare to previous year; 0 otherwise. *, ** and *** indicate significance at 90%, 95% and 99% confidence level respectively.

4.2   Univariate Analysis

The table 4.3 classified the sample size into four groups, which are GOV_DUM = 0, GOV_DUM = 1, GOV_INC = 0, and GOV_INC = 1.

Firms classified as GOV_DUM=1 show a higher leverage ratio of 0.3074, as compared to a lower ratio of 0.2747 for firms classified as GOV_DUM=0. However, the t-statistic for this mean difference shows that it is insignificant at 90% confidence level. Other than that, firms classified as GOV_DUM=1 have bigger size and lower profitability (ROA) compared to the firms classified as GOV_DUM=0. Besides, the higher tangible asset ratio (TANASSET) of firms (GOV_DUM=1) can further explain why the leverage of these firms are higher. The mean differences of SIZE, ROA and TANASSET are statistically significance at minimum 95% confidence level.

Similar comparison of mean has been done again between the firms classified as GOV_INC=1 and the firms classified as GOV_INC=0. The mean (0.3195) for GOV_INC=1 is higher compared to the mean (0.2732) for GOV_INC=0. The mean difference of the leverage ratio between these two categories somehow is statistically significant at 95% confidence level. Comparing the result with GOV_DUM, this explains why the GOV_INC is better to explain the changes of leverage ratio compared to GOV_DUM.

While ROA remain significant different between the two categories, SIZE and TANASSET are no longer significant different at 90% confidence level. The tangible asset ratio for GOV_INC=1 is lower than the ratio for GOV_INC=0 and therefore this result contradicts with the results for GOV_DUM. This suggests that the GOV_INC dummy has explored the different nature of political patronage considerably.

4.3   Regression Analysis

Refer to table 4.4, there are three models which use different proxies of political patronage. As mentioned earlier, the three proxies can only be used as alternatives due to their high correlations to each other. According to F-statistic, all models show that they are statistically significant at 99% confidence level. When the F test is significant, it means that at least one of the coefficients is not equal to zero. Therefore, individual T test are carried out for each of the variables. The results show that SIZE, ROA, and TANASSET from all the models are statistically significant at 99% confidence level. The coefficient of SIZE is positive and this indicates that larger firms in Malaysia will have higher leverage. In other words, they are able to carry more debt than the smaller firms. This result is also consistent with previous researches (Vassalou & Xing, 2004; Hooks, 2003). The coefficient of TANASSET is positive and consistent with the previous studies from Ting & Lean (2011) and (Huang & Song, 2006). Huang & Song (2011) argued that higher tangible assets are associated with higher debt. Hence, the collateral value of tangible assets is so crucial for a firm to borrow more debt. The coefficient of ROA is negative and consistent with previous studies (Myers & Maljuf, 1984). This suggests that firms with high ROA has more internal funds to be flowed and this will reduce their needs of looking for external financing such as loan.

The model used GOV as the proxy of political patronage seems to be the best in terms of adjusted R square. It has the highest adjusted R square which is 0.2745, compared to the other two models. However, the coefficient of GOV is in contrary with this research's hypothesis although it is statistically significant at 95% confidence level. This could be happened due to too much of firms with zero government ownership, which is 10 out of 76 firms in the sample. Same things happened to GOV_DUM, which is also negatively correlated to leverage.

Table 4.4 Summary Result of Model I, II, III

INDEPENDENT VARIABLE	EXPECTED SIGN	Model I LEVERAGE	Model II LEVERAGE	Model III LEVERAGE
Constant	?	-1.2971*** (0.000)	-1.2515*** (0.000)	-1.2678*** (0.000)
GOV	+	**-0.0016**** (0.021)		
GOV_DUM	+		-0.0225 (0.328)	
GOV_INC	+			0.0423* (0.064)
SIZE	+	0.1736*** (0.000)	0.1673*** (0.000)	0.1655*** (0.000)
ROA	-	-0.0025*** (0.003)	-0.0024*** (0.004)	-0.0021** (0.014)
TANASSET	+	0.00198*** (0.000)	0.00189*** (0.001)	0.0018*** (0.001)
ADJ. R-SQUARE		0.2745	0.2658	0.2720
F-STATISTIC		36.10*** (0.000)	34.57*** (0.000)	35.27*** (0.000)
OBS, N		372	372	368

Source: Developed for the research

Notes: GOV = share ownership by a group of total seven government linked investment companies (GLIC). GOV_DUM = 1 if the firm has more than 10% of share ownership by GLICs; 0 otherwise. GOV_INC = 1 if the firm's share ownership by GLICs has increased compare to previous year; 0 otherwise. LEVERAGE = total liabilities over total assets. SIZE = common logarithm of total assets. ROA = net profit after tax over total assets in percentage form.

TANASSET = tangible assets over the total assets in percentage form. *, ** and *** indicate significance at 90%, 95% and 99% confidence level respectively.

The model used GOV as the proxy of political patronage seems to be the best in terms of adjusted R square. It has the highest adjusted R square which is 0.2745, compared to the other two models. However, the coefficient of GOV is in contrary with this research's hypothesis although it is statistically significant at 95% confidence level. This could be happened due to too much of firms with zero government ownership, which is 10 out of 76 firms in the sample. Same things happened to GOV_DUM, which is also negatively correlated to leverage.

Meanwhile, the coefficient of GOV_INC in Model III is positively correlated to the leverage ratio and it is statistically significant at 90% confidence level. The firms will have higher leverage when the government ownership is increasing compared to last period. There are two benefits of choosing Model III (GOV_INC). First, this result strongly supports this research's hypothesis and consistent with previous researches (Fraser et al., 2006; Bliss & Gul, 2012). This may due to the ability of GOV_INC to capture the effects of zero government ownership Second, the GOV_INC are able to interpret the results differently. Therefore, Model III is the best model in overall.

In Model IV and Model V, the proxy of political patronage remains the same with Model III since GOV_INC has been justified as the best proxy. Refer to table 4.5, you can notice that the only difference between Model IV and Model V is the existence of year dummies variable. All the independent variables in both models are statistically significant at minimum 90% confidence level. Besides, the sign of the coefficients of SIZE, ROA and TANASSET in both models are consistent with Model III.

Table 4.5 Summary Result of Model IV and V

INDEPENDENT VARIABLE	EXPECTED SIGN	Model IV LEVERAGE	Model V LEVERAGE
Constant	?	-1.1238*** (0.000)	-1.1499*** (0.000)
GOV_INC	+	0.0434* (0.056)	0.0458** (0.048)
SIZE	+	0.1486*** (0.000)	0.1508*** (0.000)
ROA	-	-0.0021** (0.013)	-0.0020** (0.021)
TANASSET	+	0.0020*** (0.000)	0.0020*** (0.000)
FNCL	?	0.0860** (0.021)	0.0842** (0.025)
YD_2005	?		0.0151 (0.674)
YD_2006	?		0.0143 (0.685)
YD_2007	?		0.0075 (0.833)
YD_2008	?		-0.0146 (0.679)
ADJUSTED R-SQUARE		0.2806	0.2745
F-STATISTIC		29.63*** (0.000)	16.43*** (0.000)
OBSERVATIONS, N		368	368

Source: Developed for the research

Notes: GOV = share ownership by a group of total seven government linked
investment companies (GLIC). GOV_DUM = 1 if the firm has more than 10% of

share ownership by GLICs; 0 otherwise. GOV_INC = 1 if the firm's share ownership by GLICs has increased compare to previous year; 0 otherwise. LEVERAGE = total liabilities over total assets. SIZE = common logarithm of total assets. ROA = net profit after tax over total assets in percentage form. TANASSET = tangible assets over the total assets in percentage form. FNCL = 1 if the firm belongs to financial sector; 0 otherwise. YD = year dummy (2005, 2006, 2007, 2008). *, ** and *** indicate significance at 90%, 95% and 99% confidence level respectively.

FNCL has been added into Model IV and the adjusted R square of the model has improved from 0.2720 to 0.2806. This indicates that with the participation of FNCL in the new model, the model now is being better to explain the changes of the leverage ratio. The positive sign of the coefficient of FNCL also explains that the firms under financial sector will have somewhat higher leverage compared with the firms under other sector.

On the other hand, Model V has a lower adjusted R square which is 0.2745, compared to Model IV. It means that the model becomes worse off after adding the year dummies variable. Moreover, all the year dummies variables are statistically insignificant at 90% confidence level. Based on all the justification above, the researchers can conclude that Model IV is the best model in this research.

4.4   Conclusion

Outliers are detected in the earlier part in this chapter. Therefore, to avoid bias result, the outliers have been removed from the sample. The standard deviation of ROA becomes lower. After that, mean difference of leverage between two groups has been tested and the results show that GOV_DUM has nothing to do with the mean difference while GOV_INC does. Statistically, the mean difference of leverage between the groups of GOV_INC=0 and GOV_INC=1 is significant at 95% confidence level.

Refer to Table 4.4, GOV_INC is found to be the best proxy that is in line with the hypothesis of this research since the other two proxies did not support the hypothesis of this research. Model IV is the best model in overall given that its adjusted R square is the highest compared with Model III and Model V. All the independent variables are significant and consistent with the previous researches. GOV_INC, SIZE, TANASSET, and FNCL are positively correlated with leverage while ROA is negatively correlated with leverage.

CHAPTER 5: DISCUSSION, CONCLUSION AND IMPLICATIONS

5.0   Introduction

In the previous chapter, researchers have proposed the removal of the extreme outliers of return on asset; comparing government ownership dummy and government ownership increased dummy through univariate analysis; and choosing the best regression model within regression models 1, 2 and 3. In this chapter, researchers will provide the discussion, conclusion and implication of the study. Firstly, this chapter provides the summary of the previous chapter and an overall picture of major findings in this study. The next section will consist of policy implications and followed by limitations of this study. The recommendations for future research will be concluded in the last section.

5.1   Summary of Statistical Analyses

In chapter 4, researchers have summarized and analyzed a total 380 of observations of public listed companies into terms of mean, standard deviation, minimum and maximum values though descriptive analysis. From the analysis, researchers have discovered important information regarding the minimum and maximum value of the independent variables. As the independent variables were analyzed, extreme outliers were found when all observations were grouped and compared. Researchers believed that the existence of extreme outliers is the main factor that caused t and F statistics to be inaccurate, which in turn explained the model and other independent variables to be insignificant. Therefore, the extreme outliers of ROA in the observations were manually removed from the 1% (lower tail) and 99% (upper tail) distribution of the data set. As a result, the standard deviation of ROA becomes smaller. T test and F test transformed to show

significance. All of the independent variables were significant after removing the extreme outliers.

Next, the univariate analysis is conducted to determine whether GOV_DUM or GOV_INC are able to perform better in the contribution towards the dependent variable. Through univariate analysis, researchers concluded that the mean difference of leverage between the two groups (GOV_INC=0 and GOV_INC=1) is significant, which means that an increase in government investments in the company will lead to the increase in leverage. This suggests that GOV_INC are more appropriate than GOV_DUM as the proxy of political patronage.

After solving the problems of extreme outliers, this paper tried to select the best regression model from regression models I, II and III. The results showed that model III is the best given that the government ownership is not consistent with the research's hypothesis and the insignificance of government ownership dummy. The analysis of regression model 3 helped to determine the suitable proxy of political patronage. Following to that, a new independent variable of financial institution dummy variable is added in regression model IV. As a result, the adjusted R square achieved from regression model IV outperforms model III. Next, researchers tried adding year dummy variable in regression model V due to the considerations of time variant effect. However, the adjusted R square from regression model V was not better than the results from regression model IV. Therefore, model IV is the best model in this research.

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5.2   Discussion on Major Findings

First of all, the relationship between political patronage and firm's leverage is positive and is consistent with the research's hypothesis. Initially the researchers use government ownership as the proxy for political patronage. However, it showed negative relationship with the leverage which is in contrary with the research's hypothesis. It might be due to the existence of an amount of firms with zero government ownership in this sample. Instead, government ownership increased dummy shows a significant and positive relationship with the firm's

leverage. This is consistent with the hypothesis of this research. However, the interpretation of the coefficient of variable is somewhat different with the previous researches. The previous researchers usually compare the leverage between the GLC and non GLC or politically connected firms and non politically firms (Johnson & Mitton, 2003; Ting & Lean, 2011; Fraser et al., 2006; Bliss & Gul, 2012) but this research compare the leverage with last period. For example, the coefficient of GOV_INC for model IV is 0.0434. The interpretation of the value is that when the government ownership is increasing compared to last period, the firm's leverage will increase by 0.0434, holding other variables constant. This interpretation is more specific and direct to explain the relationship between leverage and political patronage. The uniqueness of the variable not only differentiates this research with the previous one but also is a new discovery that had never been done before.

On the other hand, the significance of the result also suggests that the relationship of political patronage and firm's capital structure is still effective when the firms are free from financial crisis.

Based on the result, firm size is the most significant variable in explaining the intervention of government on firm's leverage ratio. There is a positive relationship between firm size and firm's leverage ratio. This result is consistent with Vassalou & Xing (2004), whereby larger firms tend to have lower default risk and smaller firms tend to have higher default risk. This is because larger firms tend to own more assets compared to smaller firms, therefore, larger firms have higher chances of obtaining loan from bank than smaller firms.

For tangible assets, positive and significant relationship has been found between tangible assets and firm's leverage ratio. Firm with good credit rating tend to be more accessible to loan than firm with poor credit rating. This is because firms with higher ratio of tangible assets are allowed to take loans with lower cost of borrowing. Besides that, lenders are more willing to approve their loan due to lower risk of default payment. In addition, firm with high ratio of tangible assets able to take loans by pledging their assets as guarantee to back their debts and also servicing their debts on time. Therefore, in any case of default on the firm's side,

the bank can claim the pledged assets and set it up for public auction in order to recover their losses.

In regards to the profitability, the result is consistent with the expected sign which is significant and negatively correlated between profitability and firm's leverage ratio. Profitability refers to how effective a firm is able to fully utilize its assets to maximize profits. Based on the result, firms with higher return on assets tend to have lower leverage ratio compared to firms with lower return on assets. This is because firms decide to raise fund through internal financing instead of financing through obtaining loans from banks.

5.3   Implication of the Study

In this particular research, the researchers investigated the determinants of leverage in Malaysia. Researchers found that all of the independent variables included in this study, which in this case are size of the firm, profitability, tangible assets and political patronage significantly affect the firm's leverage in Malaysia. From banks' perspective, the bigger firm sizes generally make banks feel secure to borrow more to the firm resulting the firm to incur higher leverage. Besides that, this study have found that the reason firm's size is positively correlated to leverage is most probably due to large government ownership in the firm, implying that borrowers would feel secure to approve loans to large sized firms. In reality, this kind of perspective is wrong and will affect the country's economy. This would also create moral hazard as large involvement of the government in the respective firms would have to bailout the firms in any case of the firms underperforming or are going bankrupt due to excessive risk taking and their disability to service their debts.

According to Xu, Wang & Xin (2010), government-controlled listed companies have a stronger risk preference and the researchers found that the risk preference is greater than growth opportunities. This indicates that the inefficient investment decision making is involved in the government-controlled listed companies. Therefore the researchers suggest that the government should not directly

intervene in any listed companies as well as have large ownership over them. This would mean that the government should invest in terms of bond but not common stock. Only then, investors will not have the wrong perspective in terms of investment and management of the firm and their involvement in high risk investments.

On the other hand, the profitability has a negative impact to leverage because the shareholders decide to cut off the debt expenses and choose internal financing instead. In situations of such, government should increase the tax shield to companies that are more profitable in order to avoid the profitability of the firm to speed up the growth of particular firms and contribute to firm bankruptcy. According to Park & Kang (2010), the consequences of high growth of a firm would lead to higher probability of failure when they are unable to obtain sufficient market shares. Therefore when the government increases the tax shield to well profitable firms, they will be unable to rely too much on internal financing and choose to go for external financing. As this happens, the debt expenses will increase which would lead to lower profitability and slowing down of firm's growth. As a result, the probability of bankruptcy will be reduced.

This research paper also found that the leverage will increase when tangible assets increase. When tangible assets increase, investors believe in any case of default of the firm will be backed by the underlying asset. Therefore, Bank Negara Malaysia should imply new rules and regulation in order to limit the financial institutions that provide loans to a firm based on its tangible assets but not the performance of the firm. According to Chen, Goldstein & Jiang (2010), the investors' tendency to withdraw from a fund will increases when the fund performance is unfavourable. As most investors know, in order to recollect the loan amount, the performance of the firm is much more important than the tangible assets it holds. This is because of most of the tangible assets owned by the firm is depreciating thus the amount of liquidated tangible assets are unable to cover the loan amounts from time to time.

Last but not least, this research suggests that when the government ownership increases from the previous period, it will lead to the increase in leverage. This is due to the assumption that investors presume that government agencies are more

professional in the sense of analyzing a firm before they put in capital, therefore the investors will choose to follow the trend of government investment decisions. In order to avoid some of the investors follow the trend blindly and cause them making wrong decision, this research suggest that investors should look for professional agencies. The reason why individual investors should not follow these government trends is because most government investments are long-term which in turn would create conflict with short term investors. When the conflict of view occurs, the investors may suffer losses when making the wrong decision but the wrongly made decision has already led to the increase of government ownership in firms' and allowing them easier access to debt loans.

5.4   Limitations of Study

This paper has contributed useful information for policy makers and also investors. However, there are some limitations that could be improved for future studies. It is recommended for future researchers who wish to do further improvement on these issues as well as issues that have not been explored in this research.

One of the major restrictions of this study is data constraint. Originally, there were 100 listed firms chosen as the research data, however, some annual reports could not be obtained from certain firms as they were not made available from 2005 till 2010. The missing data is mainly due to the fact that certain firms only have annual reports available from 2005 till 2008 because they were delisted from the market thereafter. The numbers of sample size were adjusted by excluding those firms with missing data.

Besides that, this research paper only investigate firms in Malaysia which would condescendingly imply that the result or information obtained from this paper only provides useful information for policy maker and investors in Malaysia. Other countries such as China, Japan, Korea, United stated as well as India are encouraged to explore this area of research in order to provide useful information

for their policy makers and also investors as different countries have their own policy, background and even cultures.

In addition, this paper is also too focused on a specific market segment because it only focuses on 100 listed companies in the large capitalization ratio category. Firms with small capitalization ratio and firms that were not public listed were not selected in the sample of this research paper. These limitations might provide inaccurate information or biased results for the decision making of policy makers as the results obtained in this paper is not applicable for all market segments.

5.5   Recommendations

The limitations demonstrated in this study has brought upon recommendations which could further improve the interpretation of the determinants of leverage in companies within Malaysia in the future. Firstly, due to the issue of missing data in certain firms proposed in this study, the number of sample size were adjusted to cancel out the respective firms as a solution to counter the missing data. As a result, this study was not able to capture the effect of the determinants of leverage for those respective firms. Therefore, the consideration of data collection and its readiness could be improved in further studies to deal with such limitations.

Secondly, this paper has restricted its data samples to be within Malaysia only. With limitations as such, this paper could not provide useful information for policy makers and investors for other countries as samples gathered are country-specific. Thus, to further improve the understanding of leverage in firms with different geographical backgrounds, a wider range of data from different countries are required to defeat the limitation of a singled background market.

Last but not least, this paper is also restricted in the aspect of market segments as data samples chosen are solely based on firms with large capitalization ratio within Malaysia. Therefore, information achieved cannot fully explain the determinants of leverage for the firms in the entire market segment of Malaysia.

Future recommendations would entail the combination of not only firms with large capitalization ratio but with SME's as well. Thus, more accurate information can be provided to the decision making of policy makers as well as demolishing the biased result resulting from market segmentation.

5.6   Conclusion

As a conclusion, this study proved that the SIZE, ROA and TANASSET have significant relationship with leverage. More importantly, it proved the existence of the positive and significant link between GOV_INC and leverage. All the results are consistent with the past researches.

This research paper provides an insight to investors, the government and Bank Negara Malaysia in their decision making process for investments or policy making. This research paper contributes to the ways on how policy makers should act during times of distress and help investors to identify the importance of company leverage ratio.

REFERENCES

Adhikari, A., Derashid, C., & Zhang, H. (2006). Public policy, political connections, and effective tax rates: Longitudinal evidence from Malaysia. *Journal of Accounting and Public Policy*, *25*(5), 574-595.

Baker, M., & Wurgler, J. (2002). Market timing and capital structure. *The Journal of Finance*, *57*(1), 1-32.

Bearfield, D. A. (2009). What is patronage? A critical reexamination. *Public administration review*, *69*(1), 64-76.

Bliss, M. A., & Gul, F. A. (2012a). Political connection and leverage: Some Malaysian evidence. *Journal of Banking & Finance*, *36*(8), 2344-2350.

Bliss, M. A., & Gul, F. A. (2012b). Political connection and cost of debt: Some Malaysian evidence. *Journal of Banking & Finance*, *36*(5), 1520-1527.

Borsuk, R. (1993). Outcry Unlikely to Hinder Barito Pacific's Stock Issue, *The Asian Wall Street Journal*, 07/16/1993, p. 1.

Campello, M., & Giambona, E. (2010). *Asset tangibility and capital structure*. Working paper, University of Illinois.

Chen, J. J. (2004). Determinants of capital structure of Chinese-listed companies. *Journal of Business research*, *57*(12), 1341-1351.

Chen, Q., Goldstein, I., & Jiang, W. (2010). Payoff complementarities and financial fragility: Evidence from mutual fund outflows. *Journal of Financial Economics*, *97*(2), 239-262.

Claessens, S., Djankov, S., & Lang, L. H. (1998). *East Asian corporates: growth, financing and risks over the last decade* (Vol. 2017). World Bank, Finance, Private Sector, and Infrastructure Network, Economic Policy Unit.

Deesomsak, R., Paudyal, K., & Pescetto, G. (2004). The determinants of capital structure: evidence from the Asia Pacific region. *Journal of Multinational Financial Management*, *14*(4), 387-405.

Ebrahim, M., Girma, S., & Shah, M. (2011). Dynamic Capital Structure Under Political Patronage: A Pre and Post Crisis Analysis of Malaysia. *Nottingham University Business School Research Paper*, (2011-07).

Faccio, M. (2010). Differences between politically connected and nonconnected firms: A cross country analysis. *Financial Management*, 905-927.

Faccio, M., Masulis, R.W., & McConnell, J.J. (2007). Political connections and corporate bailouts. *Journal of Finance, forthcoming, 61(6)*, 2597-2635.

Feng, F., Sun, Q., & Tong, W. H. (2004). Do government-linked companies underperform? *Journal of Banking & Finance*, *28*(10), 2461-2492.

Ferri, M. G., & Jones, W. H. (1979). Determinants of financial structure: a new methodological approach. *The Journal of Finance*, *34*(3), 631-644.

Fraser, D. R., Zhang, H., & Derashid, C. (2006). Capital structure and political patronage: The case of Malaysia. *Journal of Banking & Finance*, *30*(4), 1291-1308.

Fosberg, R. H. (2012). Capital structure and the financial crisis. *Journal of Finance and Accountancy*, *11*, 46-55.

Gaud, P., Jani, E., Hoesli, M., & Bender, A. (2005). The capital structure of Swiss companies: an empirical analysis using dynamic panel data. *European Financial Management*, *11*(1), 51-69.

Ghosh, S. (2007). Leverage, managerial monitoring and firm valuation: A simultaneous equation approach. *Research in Economics*, *61*(2), 84-98.

Giambona, E., & Schwienbacher, A. (2008). Debt capacity of tangible assets: What is collateralizable in the debt market?. *Available at SSRN 1099331*.

Gitman, L.J. & Zutter, C.J. (2012). Principles of Managerial Finance (13th ed.). Boston: Pearson Addison Wesley.

Guha, S., Rastogi, R., & Shim, K. (2001). Cure: an efficient clustering algorithm for large databases. *Information Systems*, *26*(1), 35-58.

Gujarati, D.N. & Porter, D.C. (2009). *Basic econometrics*. (5th ed.). Boston, MA:

McGraw-Hill/Irwin.

Gungoraydinoglu, A., & Öztekin, Ö. (2011). Firm-and country-level determinants of corporate leverage: Some new international evidence. *Journal of Corporate Finance*, *17*(5), 1457-1474.

Harris, M., & Raviv, A. (1991). The theory of capital structure. *the Journal of Finance*, *46*(1), 297-355.

Hautamäki, V., Cherednichenko, S., Kärkkäinen, I., Kinnunen, T., & Fränti, P. (2005). Improving k-means by outlier removal. In *Image Analysis* (pp. 978-987). Springer Berlin Heidelberg.

Hooks, L. M. (2003). The impact of firm size on bank debt use. *Review of Financial Economics*, *12*(2), 173-189.

Hovey, M. (2010, February). Corporate Governance And The Capital Structure Of Listed Firms: Evidence From China. In *International Conference on Corporate Governance, Sydney, Australia*.

Horlic.com (2010). *Top 100 Companies In Malaysia. Retrieved March 1, 2013 from* http://www.horlic.com/top-100-companies-in-malaysia/

Huang, G., & Song, F. M. (2006). The determinants of capital structure: evidence from China. *China Economic Review*, *17*(1), 14-36.

Jensen, M. (1986). Agency cost of free cash flow, corporate finance, and takeovers. *Corporate Finance, and Takeovers. American Economic Review*,*76*(2).

Johnson, S., & Mitton, T. (2003). Cronyism and capital controls: evidence from Malaysia. *Journal of Financial Economics*, *67*(2), 351-382.

Khazanah Nasional (2013). *Which Companies Are Categorized As GLCs?* Retrieved March 1, 2013 from http://www.khazanah.com.my/faq.htm#ques9

Kumar, K. B., Rajan, R. G., & Zingales, L. (1999). What determines firm size? National Bureau of Economic Research.

Li, K., Yue, H., & Zhao, L. (2009). Ownership, institutions, and capital structure: Evidence from China. *Journal of Comparative Economics*, *37*(3), 471-490.

MacKie-Mason, J. K. (1990). Do firms care who provides their financing? *In Asymmetric Information, Corporate Finance, and Investment* (pp. 63-104). University of Chicago Press, 1990.

Manos, R., Murinde, V., & Green, C. J. (2007). Leverage and business groups: Evidence from Indian firms. *Journal of Economics and Business*, *59*(5), 443-465.

Malaysia's Capital Market (2011). *Transforming Vision Into Opportunities*. Retrieved from http://www.umlib.um.edu.my/publications/apa-guide.pdf

McDaniel, C. & Gates, R. (2010). *Marketing Research.* (8th ed.). Hoboken, NJ:

John Wiley & Sons.

Miller, M. H. (1977). Debt and Taxes. *The Journal of Finance*, *32*(2), 261-275.

Mitchell, H., & Joseph S. (2010). Changes in Malaysia: capital controls, prime ministers and political connections. *Pacific-Basin Finance Journal, 18*, 460-476.

Modigliani, F. & Miller, M.H. (1958). The cost of capital, corporation finance and the theory of investment. *The American Economic Review*, 48(3), 261-297.

Modigliani, F. & Miller, M.H. (1963). Corporate income taxes and the cost of capital: A correction. *The American Economic Review, 53(3), 433-443.*

Myers, S. C. (1977). Determinants of corporate borrowing. *Journal of financial economics*, *5*(2), 147-175.

Myers, S. C., & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of financial economics*, *13*(2), 187-221.

Padachi, K., Howorth, C., & Narasimhan, M. S. (2012). Working Capital Financing Preferences: The Case of Mauritian Manufacturing Small and Medium Sized Enterprises (SMEs). *Asian Academy of Management Journal of Accounting and Finance*, *8*(1), 125-157.

Park, K., & Jang, S. S. (2010). Firm growth patterns: examining the associations with firm size and internationalization. *International Journal of Hospitality Management*, *29*(3), 368-377.

Rajan, R. G., & Zingales, L. (1995). What do we know about capital structure? Some evidence from international data. *The journal of Finance*, *50*(5), 1421-1460.

Rampini, A., & Viswanathan, S. (2009). Collateral and capital structure. *Collateral and Capital Structure (November 2012). AFA.*

Razak, N. H. A., Ahmad, R., & Joher, H. A. (2011). Does government linked companies (GLCs) perform better than non-GLCs? Evidence from Malaysian listed companies. *Journal of applied finance & banking*, *1*(1), 213-240.

Richter, B. K. (2010). *The role political connections play in access to finance: evidence from cross-listing.* Working paper, UCLA.

Sapienza, P. (2004). The effects of government ownership on bank lending. *Journal of Financial Economics*, *72*(2), 357-384.

Sayılgan, G., Karabacak, H., & Küçükkocaoğlu, G. (2006). The firm-specific determinants of corporate capital structure: Evidence from Turkish panel data. *Investment Management and Financial Innovations*, *3*(3), 125-139.

Schoubben, F., & Van Hulle, C. (2004). The determinants of leverage; differences between quoted and non quoted firms. *DTEW Research Report 0450*, 1-32.

Securities Commission Malaysia. (2011). *Malaysia's Capital Market : Transforming Vision into Opportunities. Retrieved June 1, 2013 from*

http://www.sc.com.my/eng/html/publications/Capital_Market_Brocure_11/Capital%20Market_ALL.pdf

Suto, M. (2001). *Capital structure and investment behaviour of Malaysian firms in the 1990s: a study of corporate governance before the crisis* (No. 2001-9). Center for Economic Institutions, Institute of Economic Research, Hitotsubashi University.

Taylor, J. B. (2009). *The financial crisis and the policy responses: An empirical analysis of what went wrong* (No. w14631). National Bureau of Economic Research.

Thavikulwat, P. (2004). Determining the value of a firm. *Developments in Business   Simulation & Experiential Learning*, *31*, 210-215.

Ting, I. W. K., & Lean, H. H. (2011). Â capital structure of government-linked companies in Malaysia. *Asian Academy of Management Journal of Accounting and Finance*, *7*(2), 137-156.

Titman, S., & Wessels, R. (1988). The determinants of capital structure choice. *The Journal of finance*, *43*(1), 1-19.

Vassalou, M., & Xing, Y. (2004). Default risk in equity returns. *The Journal of Finance*, *59*(2), 831-868.

Wald, J. K. (1999). How firm characteristics affect capital structure: an international comparison. *Journal of Financial Research*, *22*(2), 161-187.

Xu, L. P., Wang, J. W., & Xin, Y. (2010). Government Control, Uncertainty, and Investment Decisions in China's Listed Companies. *China Journal of Accounting Research*, *3*(1), 131-157.

Yan, I. K., Chan, K. S., & Dang, V. Q. (2011). Financial liberalization, financing constraints and political connection: evidence from Chinese firms.

APPENDICES

Appendix 1:

<u>Descriptive Statistic Table (n=380)</u>

```
. summarize LEVERAGE SIZE ROA TANASSET GOV

    Variable |      Obs        Mean    Std. Dev.        Min         Max

    LEVERAGE |      380    .3485901    1.004648    .0000618    18.41282
     SIZELOG |      380    9.299336    .6821611    7.177825    11.37708
         ROA |      380    12.86821    83.97815   -1003.199    1133.924
    TANASSET |      380    10.75813    20.26193           0    90.15728
         GOV |      380     14.5126    16.41209           0       81.89
```

Appendix 2:

Descriptive Statistic Table (n=372)

```
. summarize LEVERAGE SIZE ROA TANASSET GOV

    Variable |       Obs        Mean    Std. Dev.        Min        Max
-------------+--------------------------------------------------------
    LEVERAGE |       372    .2903618    .2506136    .0000618   1.777932
        SIZE |       372    9.325326    .6604284    7.882741   11.37708
         ROA |       372    11.75681    13.78498   -38.49526   71.76745
    TANASSET |       372    10.98795     20.4177           0   90.15728
         GOV |       372    14.68728    16.51585           0      81.89
```

Univariate Analysis (GOV_DUM=0; GOV_DUM=1)
Appendix 3:
Mean Statistic of Leverage (pooled vs. scatterwhite)

```
. ttest LEVERAGE, by ( GOV_DUM)

Two-sample t test with equal variances

  Group |     Obs        Mean    Std. Err.    Std. Dev.   [95% Conf. Interval]
--------+--------------------------------------------------------------------
      0 |     194    .2747346    .0174103     .2424974    .2403957    .3090735
      1 |     178    .3073937    .0193963     .2587791    .2691159    .3456715
--------+--------------------------------------------------------------------
combined|     372    .2903618    .0129937     .2506136    .2648113    .3159124
--------+--------------------------------------------------------------------
   diff |            -.0326591    .0259912                -.0837681    .0184499
----------------------------------------------------------------------------
   diff = mean(0) - mean(1)                                     t =  -1.2565
Ho: diff = 0                                    degrees of freedom =      370

   Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.1049        Pr(|T| > |t|) = 0.2097        Pr(T > t) = 0.8951
```

```
. summarize LEVERAGE SIZE ROA TANASSET GOV

   Variable |       Obs        Mean    Std. Dev.       Min        Max
-----------+------------------------------------------------------------
   LEVERAGE |       372    .2903618    .2506136    .0000618   1.777932
       SIZE |       372    9.325326    .6604284    7.882741   11.37708
        ROA |       372    11.75681    13.78498   -38.49526   71.76745
   TANASSET |       372    10.98795    20.4177            0   90.15728
        GOV |       372    14.68728    16.51585            0      81.89

. ttest LEVERAGE, by(GOV_DUM) unequal

Two-sample t test with unequal variances

  Group |     Obs        Mean    Std. Err.    Std. Dev.   [95% Conf. Interval]
--------+--------------------------------------------------------------------
      0 |     194    .2747346    .0174103     .2424974    .2403957    .3090735
      1 |     178    .3073937    .0193963     .2587791    .2691159    .3456715
--------+--------------------------------------------------------------------
combined|     372    .2903618    .0129937     .2506136    .2648113    .3159124
--------+--------------------------------------------------------------------
   diff |            -.0326591    .0260641                -.0839152     .018597
----------------------------------------------------------------------------
   diff = mean(0) - mean(1)                                     t =  -1.2530
Ho: diff = 0                    Satterthwaite's degrees of freedom =  361.753

   Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.1055        Pr(|T| > |t|) = 0.2110        Pr(T > t) = 0.8945
```

Appendix 4:

Mean Statistic of Size (pooled vs. scatterwhite)

```
. ttest SIZE, by(GOV_DUM)

Two-sample t test with equal variances

    Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
  --------+--------------------------------------------------------------------
        0 |     194    9.227004    .0454549    .6331136    9.137352    9.316656
        1 |     178    9.432487    .0505594    .6745463     9.33271    9.532263
  --------+--------------------------------------------------------------------
 combined |     372    9.325326    .0342416    .6604284    9.257994    9.392658
  --------+--------------------------------------------------------------------
     diff |            -.2054824    .0678029               -.3388097   -.0721552
  ------------------------------------------------------------------------------
     diff = mean(0) - mean(1)                                  t =  -3.0306
 Ho: diff = 0                                degrees of freedom =       370

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0013       Pr(|T| > |t|) = 0.0026          Pr(T > t) = 0.9987

. ttest SIZE, by(GOV_DUM) unequal

Two-sample t test with unequal variances

    Group |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
  --------+--------------------------------------------------------------------
        0 |     194    9.227004    .0454549    .6331136    9.137352    9.316656
        1 |     178    9.432487    .0505594    .6745463     9.33271    9.532263
  --------+--------------------------------------------------------------------
 combined |     372    9.325326    .0342416    .6604284    9.257994    9.392658
  --------+--------------------------------------------------------------------
     diff |            -.2054824    .0679882                -.339184   -.0717808
  ------------------------------------------------------------------------------
     diff = mean(0) - mean(1)                                  t =  -3.0223
 Ho: diff = 0                 Satterthwaite's degrees of freedom =   361.921

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.0013       Pr(|T| > |t|) = 0.0027          Pr(T > t) = 0.9987
```

Appendix 5:

Mean Statistic of ROA

```
. ttest ROA, by(GOV_DUM)

Two-sample t test with equal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	194	13.32112	1.016949	14.16446	11.31536	15.32689
1	178	10.05189	.9884973	13.1882	8.101133	12.00265
combined	372	11.75681	.7147177	13.78498	10.35141	13.16222
diff		3.269235	1.422575		.471889	6.06658

```
    diff = mean(0) - mean(1)                              t =    2.2981
Ho: diff = 0                            degrees of freedom =       370

    Ha: diff < 0              Ha: diff != 0                Ha: diff > 0
 Pr(T < t) = 0.9889      Pr(|T| > |t|) = 0.0221       Pr(T > t) = 0.0111

. ttest ROA, by(GOV_DUM) unequal

Two-sample t test with unequal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	194	13.32112	1.016949	14.16446	11.31536	15.32689
1	178	10.05189	.9884973	13.1882	8.101133	12.00265
combined	372	11.75681	.7147177	13.78498	10.35141	13.16222
diff		3.269235	1.418208		.4804745	6.057995

```
    diff = mean(0) - mean(1)                              t =    2.3052
Ho: diff = 0             Satterthwaite's degrees of freedom =   369.918

    Ha: diff < 0              Ha: diff != 0                Ha: diff > 0
 Pr(T < t) = 0.9891      Pr(|T| > |t|) = 0.0217       Pr(T > t) = 0.0109
```

Appendix 6:

Mean Statistic of TanAsset

```
. ttest TANASSET, by(GOV_DUM)

Two-sample t test with equal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	194	7.712023	1.1108	15.47166	5.521156	9.90289
1	178	14.55834	1.817845	24.25307	10.9709	18.14578
combined	372	10.98795	1.058608	20.4177	8.906324	13.06957
diff		-6.846317	2.091977		-10.95997	-2.73266

```
    diff = mean(0) - mean(1)                                     t =  -3.2727
Ho: diff = 0                                  degrees of freedom =      370

    Ha: diff < 0                 Ha: diff != 0                   Ha: diff > 0
 Pr(T < t) = 0.0006       Pr(|T| > |t|) = 0.0012         Pr(T > t) = 0.9994

. ttest TANASSET, by(GOV_DUM) unequal

Two-sample t test with unequal variances
```

Group	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf. Interval]	
0	194	7.712023	1.1108	15.47166	5.521156	9.90289
1	178	14.55834	1.817845	24.25307	10.9709	18.14578
combined	372	10.98795	1.058608	20.4177	8.906324	13.06957
diff		-6.846317	2.130361		-11.03889	-2.653744

```
    diff = mean(0) - mean(1)                                     t =  -3.2137
Ho: diff = 0                  Satterthwaite's degrees of freedom =  296.008

    Ha: diff < 0                 Ha: diff != 0                   Ha: diff > 0
 Pr(T < t) = 0.0007       Pr(|T| > |t|) = 0.0015         Pr(T > t) = 0.9993
```

Appendix 7:

Mean Statistic of Political Patronage

```
. ttest GOV, by(GOV_DUM)

Two-sample t test with equal variances

   Group       Obs        Mean    Std. Err.    Std. Dev.    [95% Conf. Interval]

       0       194    4.501492    .2937225     4.091081     3.922174      5.08081
       1       178    25.78865    1.332067       17.772     23.15987     28.41743

combined       372    14.68728    .8563071     16.51585     13.00346     16.37111

    diff                -21.28716    1.312141                 -23.86735    -18.70697

    diff = mean(0) - mean(1)                                      t = -16.2232
Ho: diff = 0                                 degrees of freedom =       370

    Ha: diff < 0                Ha: diff != 0                   Ha: diff > 0
 Pr(T < t) = 0.0000      Pr(|T| > |t|) = 0.0000           Pr(T > t) = 1.0000

. ttest GOV, by(GOV_DUM) unequal

Two-sample t test with unequal variances

   Group       Obs        Mean    Std. Err.    Std. Dev.    [95% Conf. Interval]

       0       194    4.501492    .2937225     4.091081     3.922174      5.08081
       1       178    25.78865    1.332067       17.772     23.15987     28.41743

combined       372    14.68728    .8563071     16.51585     13.00346     16.37111

    diff                -21.28716    1.364066                 -23.97744    -18.59687

    diff = mean(0) - mean(1)                                      t = -15.6057
Ho: diff = 0                  Satterthwaite's degrees of freedom =  194.209

    Ha: diff < 0                Ha: diff != 0                   Ha: diff > 0
 Pr(T < t) = 0.0000      Pr(|T| > |t|) = 0.0000           Pr(T > t) = 1.0000
```

Univariate Analysis (GOV_INC=0; GOV_DUM=1)
Appendix 8:

Mean Statistic of Leverage

```
. ttest LEVERAGE, by(GOV_INC)

Two-sample t test with equal variances

  Group |     Obs        Mean    Std. Err.    Std. Dev.   [95% Conf. Interval]
--------+--------------------------------------------------------------------
      0 |     196     .2630709    .0161782    .2264943    .2311643    .2949775
      1 |     172     .3231147    .0208899    .2739679    .2818795    .3643499
--------+--------------------------------------------------------------------
combined|     368     .2911349    .0130977    .2512568     .265379    .3168907
--------+--------------------------------------------------------------------
   diff |             -.0600438    .026099                -.1113667    -.008721
-----------------------------------------------------------------------------
   diff = mean(0) - mean(1)                                  t =  -2.3006
Ho: diff = 0                                 degrees of freedom =       366

   Ha: diff < 0                 Ha: diff != 0                  Ha: diff > 0
 Pr(T < t) = 0.0110        Pr(|T| > |t|) = 0.0220         Pr(T > t) = 0.9890

. ttest LEVERAGE, by(GOV_INC) unequal

Two-sample t test with unequal variances

  Group |     Obs        Mean    Std. Err.    Std. Dev.   [95% Conf. Interval]
--------+--------------------------------------------------------------------
      0 |     196     .2630709    .0161782    .2264943    .2311643    .2949775
      1 |     172     .3231147    .0208899    .2739679    .2818795    .3643499
--------+--------------------------------------------------------------------
combined|     368     .2911349    .0130977    .2512568     .265379    .3168907
--------+--------------------------------------------------------------------
   diff |             -.0600438    .0264219                -.112019   -.0080687
-----------------------------------------------------------------------------
   diff = mean(0) - mean(1)                                  t =  -2.2725
Ho: diff = 0                   Satterthwaite's degrees of freedom =   332.688

   Ha: diff < 0                 Ha: diff != 0                  Ha: diff > 0
 Pr(T < t) = 0.0118        Pr(|T| > |t|) = 0.0237         Pr(T > t) = 0.9882
```

Appendix 9:

Mean Statistic of Size (pooled vs. scatterwhite)

```
. ttest SIZE, by(GOV_INC)

Two-sample t test with equal variances

   Group  |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
----------+--------------------------------------------------------------------
       0  |     196    9.288499    .0449495    .6292936    9.199849    9.377149
       1  |     172    9.374484    .0531858    .6975253    9.269499     9.47947
----------+--------------------------------------------------------------------
 combined |     368    9.328688    .0345373    .6625398    9.260772    9.396604
----------+--------------------------------------------------------------------
     diff |            -.0859854    .0691705               -.222007    .0500362
--------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                    t =  -1.2431
Ho: diff = 0                                  degrees of freedom =      366

    Ha: diff < 0                 Ha: diff != 0                  Ha: diff > 0
 Pr(T < t) = 0.1073       Pr(|T| > |t|) = 0.2146         Pr(T > t) = 0.8927

. ttest SIZE, by(GOV_INC) unequal

Two-sample t test with unequal variances

   Group  |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
----------+--------------------------------------------------------------------
       0  |     196    9.288499    .0449495    .6292936    9.199849    9.377149
       1  |     172    9.374484    .0531858    .6975253    9.269499     9.47947
----------+--------------------------------------------------------------------
 combined |     368    9.328688    .0345373    .6625398    9.260772    9.396604
----------+--------------------------------------------------------------------
     diff |            -.0859854    .0696361              -.2229471    .0509764
--------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                    t =  -1.2348
Ho: diff = 0              Satterthwaite's degrees of freedom =   347.191

    Ha: diff < 0                 Ha: diff != 0                  Ha: diff > 0
 Pr(T < t) = 0.1089       Pr(|T| > |t|) = 0.2177         Pr(T > t) = 0.8911
```

Appendix 10:

Mean Statistic of ROA

```
. ttest ROA, by(GOV_INC)

Two-sample t test with equal variances

    Group       Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
        0        196    13.70702    1.054942    14.76918    11.62646    15.78758
        1        172    9.461488    .9383115    12.30584    7.609323    11.31365

 combined        368     11.7227    .7203518    13.81874    10.30616    13.13923

     diff               4.245533    1.428615                1.436209    7.054857

    diff = mean(0) - mean(1)                                  t =    2.9718
Ho: diff = 0                                   degrees of freedom =       366

    Ha: diff < 0              Ha: diff != 0                Ha: diff > 0
 Pr(T < t) = 0.9984      Pr(|T| > |t|) = 0.0032         Pr(T > t) = 0.0016

. ttest ROA, by(GOV_INC) unequal

Two-sample t test with unequal variances

    Group       Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
        0        196    13.70702    1.054942    14.76918    11.62646    15.78758
        1        172    9.461488    .9383115    12.30584    7.609323    11.31365

 combined        368     11.7227    .7203518    13.81874    10.30616    13.13923

     diff               4.245533    1.411853                1.469146     7.02192

    diff = mean(0) - mean(1)                                  t =    3.0071
Ho: diff = 0                      Satterthwaite's degrees of freedom =   365.044

    Ha: diff < 0              Ha: diff != 0                Ha: diff > 0
 Pr(T < t) = 0.9986      Pr(|T| > |t|) = 0.0028         Pr(T > t) = 0.0014
```

Appendix 11:

Mean Statistic of TanAsset

```
. ttest TANASSET, by(GOV_INC)

Two-sample t test with equal variances

   Group |      Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      196    12.25796     1.55411    21.75755    9.192937    15.32298
       1 |      172    9.367241    1.428876    18.73954    6.546734    12.18775
---------+--------------------------------------------------------------------
combined |      368    10.90686    1.064802    20.42644    8.812985    13.00074
---------+--------------------------------------------------------------------
    diff |             2.890719    2.131712               -1.301221    7.082659
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                     t =   1.3561
Ho: diff = 0                                     degrees of freedom =       366

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.9120         Pr(|T| > |t|) = 0.1759          Pr(T > t) = 0.0880

. ttest TANASSET, by(GOV_INC) unequal

Two-sample t test with unequal variances

   Group |      Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |      196    12.25796     1.55411    21.75755    9.192937    15.32298
       1 |      172    9.367241    1.428876    18.73954    6.546734    12.18775
---------+--------------------------------------------------------------------
combined |      368    10.90686    1.064802    20.42644    8.812985    13.00074
---------+--------------------------------------------------------------------
    diff |             2.890719    2.111148               -1.260788    7.042226
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                     t =   1.3693
Ho: diff = 0               Satterthwaite's degrees of freedom =   365.878

    Ha: diff < 0                 Ha: diff != 0                 Ha: diff > 0
 Pr(T < t) = 0.9141         Pr(|T| > |t|) = 0.1718          Pr(T > t) = 0.0859
```

Appendix 12:

Mean Statistic of Political Patronage

```
. ttest GOV, by(GOV_INC)

Two-sample t test with equal variances

  Group  |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |     196    11.12379    1.053979     14.7557    9.045132    13.20245
       1 |     172    18.79986    1.333474    17.48834    16.16767    21.43205
---------+--------------------------------------------------------------------
combined |     368    14.71152    .8611479    16.51968    13.01812    16.40492
---------+--------------------------------------------------------------------
    diff |            -7.676065    1.681108               -10.98191   -4.370223
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -4.5661
Ho: diff = 0                                    degrees of freedom =       366

    Ha: diff < 0                 Ha: diff != 0                  Ha: diff > 0
 Pr(T < t) = 0.0000        Pr(|T| > |t|) = 0.0000           Pr(T > t) = 1.0000

. ttest GOV, by(GOV_INC) unequal

Two-sample t test with unequal variances

  Group  |     Obs        Mean    Std. Err.   Std. Dev.   [95% Conf. Interval]
---------+--------------------------------------------------------------------
       0 |     196    11.12379    1.053979     14.7557    9.045132    13.20245
       1 |     172    18.79986    1.333474    17.48834    16.16767    21.43205
---------+--------------------------------------------------------------------
combined |     368    14.71152    .8611479    16.51968    13.01812    16.40492
---------+--------------------------------------------------------------------
    diff |            -7.676065    1.699713               -11.01947   -4.332658
------------------------------------------------------------------------------
    diff = mean(0) - mean(1)                                      t =  -4.5161
Ho: diff = 0                    Satterthwaite's degrees of freedom =   336.299

    Ha: diff < 0                 Ha: diff != 0                  Ha: diff > 0
 Pr(T < t) = 0.0000        Pr(|T| > |t|) = 0.0000           Pr(T > t) = 1.0000
```

Appendix 13:

<u>Empirical Result of Model I</u>
<u>(LEVERAGE = SIZE + ROA + TANASSET + GOV + C)</u>

. regress LEVERAGE SIZE ROA TANASSET GOV

Source	SS	df	MS			
Model	6.57893608	4	1.64473402			
Residual	16.7225273	367	.045565469			
Total	23.3014634	371	.062807179			

		Number of obs =	372
	F(4, 367) =	36.10
	Prob > F	=	0.0000
	R-squared	=	0.2823
	Adj R-squared =	0.2745
	Root MSE	=	.21346

LEVERAGE	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
SIZE	.1736439	.0177636	9.78	0.000	.1387126	.2085752
ROA	-.0025156	.0008316	-3.02	0.003	-.004151	-.0008802
TANASSET	.001977	.0005522	3.58	0.000	.0008912	.0030629
GOV	-.0016297	.0007018	-2.32	0.021	-.0030098	-.0002496
_cons	-1.297136	.1661585	-7.81	0.000	-1.623878	-.9703936

Appendix 14:

<u>Empirical Result of Model II</u>
<u>(LEVERAGE = SIZE + ROA + TANASSET + GOV_DUM + C)</u>

. regress LEVERAGE GOV_DUM SIZE ROA TANASSET

Source	SS	df	MS			
				Number of obs =		372
				F(4, 367) =		34.57
Model	6.37756391	4	1.59439098	Prob > F	=	0.0000
Residual	16.9238995	367	.046114167	R-squared	=	0.2737
				Adj R-squared =		0.2658
Total	23.3014634	371	.062807179	Root MSE	=	.21474

LEVERAGE	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GOV_DUM	-.0224591	.0229071	-0.98	0.328	-.0675048	.0225866
SIZE	.1672876	.0176178	9.50	0.000	.1326431	.2019322
ROA	-.0023935	.0008355	-2.86	0.004	-.0040365	-.0007505
TANASSET	.0018869	.0005568	3.39	0.001	.000792	.0029819
_cons	-1.251497	.1657353	-7.55	0.000	-1.577407	-.925587

Appendix 15:

Empirical Result of Model III
(LEVERAGE = SIZE + ROA + TANASSET + GOV_INC + C)

```
. regress LEVERAGE GOV_INC SIZE ROA TANASSET
```

Source	SS	df	MS		
Model	6.48482276	4	1.62120569	Number of obs =	368
Residual	16.6838779	363	.045961096	F(4, 363) =	35.27
				Prob > F =	0.0000
				R-squared =	0.2799
				Adj R-squared =	0.2720
Total	23.1687007	367	.063129975	Root MSE =	.21439

LEVERAGE	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GOV_INC	.0422513	.0227554	1.86	0.064	-.0024977	.0870002
SIZE	.165488	.0175389	9.44	0.000	.1309975	.1999786
ROA	-.0020697	.0008423	-2.46	0.014	-.0037261	-.0004133
TANASSET	.0018072	.0005547	3.26	0.001	.0007164	.0028979
_cons	-1.267847	.1658839	-7.64	0.000	-1.594061	-.941633

Appendix 16:

Empirical Result of Model IV
(LEVERAGE = SIZE + ROA + TANASSET + GOV_INC + FNCL + C)

```
. regress LEVERAGE GOV_INC SIZE ROA TANASSET  FNCL
```

Source	SS	df	MS		
Model	6.72854253	5	1.34570851		
Residual	16.4401582	362	.045414802		
Total	23.1687007	367	.063129975		

Number of obs =	368
F(5, 362) =	29.63
Prob > F =	0.0000
R-squared =	0.2904
Adj R-squared =	0.2806
Root MSE =	.21311

LEVERAGE	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
GOV_INC	.043388	.0226251	1.92	0.056	-.0011051	.0878811
SIZE	.1486134	.0188949	7.87	0.000	.1114558	.1857709
ROA	-.0020934	.0008374	-2.50	0.013	-.0037401	-.0004467
TANASSET	.0020475	.000561	3.65	0.000	.0009442	.0031508
FNCL	.0860177	.0371314	2.32	0.021	.0129974	.1590379
_cons	-1.123822	.1762263	-6.38	0.000	-1.470378	-.7772662

Appendix 17:

Empirical Result of Model V

(LEVERAGE = SIZE + ROA + TANASSET + GOV_INC + FNCL + YD_2005 + YD_2006 + YD_2007 + YD_2008 + C)

```
. regress LEVERAGE GOV_INC SIZE ROA TANASSET  FNCL  Yd_2005 Yd_2006 Yd_2007 Yd_2008
```

Source	SS	df	MS
Model	6.77158983	9	.75239887
Residual	16.3971109	358	.045801986
Total	23.1687007	367	.063129975

Number of obs =	368
F(9, 358) =	16.43
Prob > F =	0.0000
R-squared =	0.2923
Adj R-squared =	0.2745
Root MSE =	.21401

LEVERAGE	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
GOV_INC	.0457789	.0230792	1.98	0.048	.0003911	.0911667
SIZE	.150777	.0192207	7.84	0.000	.1129774	.1885766
ROA	-.0019995	.0008621	-2.32	0.021	-.0036949	-.000304
TANASSET	.002012	.0005653	3.56	0.000	.0009002	.0031238
FNCL	.0841828	.0373644	2.25	0.025	.0107015	.1576641
Yd_2005	.0151083	.03592	0.42	0.674	-.0555324	.085749
Yd_2006	.0143026	.0352643	0.41	0.685	-.0550486	.0836539
Yd_2007	.0074632	.0354503	0.21	0.833	-.0622538	.0771801
Yd_2008	-.0145931	.0352386	-0.41	0.679	-.0838938	.0547076
_cons	-1.14991	.1822887	-6.31	0.000	-1.508401	-.7914188