PANEL DATA ANALYSIS ON THE DETERMINANTS OF FINANCIAL LEVERAGE AMONG MALAYSIAN GOVERNMENT-LINKED COMPANIES

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FACULTY OF BUSINESS, ECONOMICS AND ACCOUNTANCY

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DECLARATION

I hereby declare that the material in this thesis is my own work except for the quotations, accepts, equations, summaries and references, which have been duly acknowledged.

2 September 2016

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ABSTRACT

A study have been carried out to discover the determinants of financial leverage in Government-Linked Companies (GLCs) of Malaysia. The main objective of this study is to determine the factors that can influence the leverage decision of GLCs during the past 10 years. The sample included 15 GLCs that listed in BURSA Malaysia within the period of 2006 until 2015 that contribute to 150 observations. The panel data was collected through the analysis of financial statement stated in the annual report of every companies. Regression analysis including Ordinary Least Squared, Fixed Effect Model and Random Effect Model was conducted to find out which of the model is more appropriate to explain the panel data. As the result showed Fixed Effect Model is more suitable to be used in this study, three of the tested variables was found to be significantly related to financial leverage of GLCs. Independent variable such as Firm Size, Profitability and Liquidity were inversely related to financial leverage. The findings generally support the Pecking Order Theory and similar with some of the past researchers. In practically, this study helps the managers in GLCs and investor to understand the causes of debt policy in the companies.

ABSTRAK

ANALISIS DATA PANEL UNTUK PENENTU-PENENTU LEVERAGE KEWANGAN ANTARA SYARIKAT-SYARIKAT BERKAITAN KERAJAAN MALAYSIA

Satu kajian telah dijalankan untuk mengenal pasti penentu leverage kewangan di Syarikat Berkaitan Kerajaan (GLC) Malaysia. Objektif utama kajian ini adalah untuk menentukan faktor-faktor yang boleh mempengaruhi keputusan leverage GLC dalam tempoh 10 tahun yang lalu. Sampel kajian ini termasuk 15 syarikat yang disenaraikan di BURSA Malaysia dalam tempoh 2006 hingga 2015 yang menyumbang kepada 150 pemerhatian. Data yang panel kajian ini diperoleh melalui analisis penyata kewangan dinyatakan dalam laporan tahunan setiap syarikat. analisis regresi termasuk Least Squared, Kesan Tetap Model dan Kesan Random Model telah dijalankan untuk mengetahui bahawa model yang lebih sesuai untuk menerangkan data panel. Hasilnya menunjukkan Tetap Kesan Model adalah lebih sesuai digunakan dalam kajian ini, tiga daripada pemboleh ubah diuji telah didapati signifikan dengan leverage kewangan GLC. pembolehubah bebas seperti Saiz Firma, Keuntungan dan Kecairan telah songsang yang berkaitan dengan Leverage Kewangan. Penemuan umumnya menyokong Teori Pemilihan Aturan dan sama dengan beberapa pengkaji yang terdahulu. Dalam praktikal, kajian ini dapat membantu pengurus dalam GLC dan pelabur untuk memahami sebab-sebab dasar hutang di syarikat-syarikat.

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LIST OF ABBREVIATION

GLC	Government-Linked Companies
GLIC	Government-Linked Investment Companies
LV	Financial Leverage
FS	Firm Size
AS	Asset Structure
PF	Profitability
GR	Growth Rate
LD	Liquidity
e	Residual Error
LLC	Levin, Lin and Chu
IPS	Im, Pearsan and Shin W-stat

CHAPTER 1

INTRODUCTION

1.1 Background of the study

The financial situation and capital structure of a company might able to influence the economic system and financial stability of the country. Capital is required for a firm to reach their own financial needs either in short-term or long-term. There are three sources of funds that available for the firm to choose which are equity, hybrid security and debt. The source of capital can always influence not only the firm, but also the investors and creditors that finance their money into the firm. Firms can utilize their value through the optimization of using both debt and equity in their capital structure. According to Franklin and Musthusamy (2011), leverage is known as the use of borrowed funds along with preferred and equity capital in a firm. The debt financing decision of a firm can bring positive outcome for example increase the competitiveness and growth opportunities that can finally help to boost up the productivity of the country.

There are two different types of leverage which are operating leverage and financial leverage. Operating leverage reflects the extent to which fixed assets and its associated fixed costs are utilized. Financial leverage is the level that a firm utilize the money that they borrowed from fixed-income securities such as debt and preferred stocks for achieving optimal capital structure. Operating leverage will influence the firm's asset structure, while financial leverage affect the debt-equity mix of the capital financing structure of the firms. Hence, operating leverage shows the return from operations, while financial leverage determines how the returns will be allocated to the debt holders and more importantly to the stockholders. According to Gill and Mathur (2011), there are many methods that the firm can issue a debt which includes warrants, convertible bonds, lease financing and forward contracts.

When firms expand, leverage is often used to finance their daily operation and projects. Leverage is described as two-edged sword for a firm because it brings both benefits and costs. For the benefits, interest paid that comes along with debt is tax deductible which can reduce the effective cost of debt. In addition, the highly profitable firms do not have to share their profit to the debt holders as they only can obtain a fixed return from their debt. When things go well, it can produce highly favorable result to meet the prime objective of a firm in maximizing the shareholders' wealth by increasing their return on investment as the firm choose to not using the money of shareholders. However, it is a dark side of debt which bring higher risk to the company. When things go wrong, the firm might face financial distress situation when they are difficult to pay the financial obligation and even sometimes may lead to risk of bankruptcy. In other words, when a firm decides to use debt (financial leverage), the stockholders will face a certain amount of risk that inherent in their operation and hence concentrates the business risk. Any changes in the use of debt will cause changes in both earning per share (EPS) and risk which will finally lead to the stock price of the company. Therefore, the higher percentage of debt, the higher risk the debt and hence the lenders will charge a higher interest rate.

Furthermore, the debt holders might demand some restriction towards the firms and the common stockholders who concerned or sensitive towards these changes may drive down the stock price by selling the stocks of the company on their hands. Companies with lower business risk and strong operating cash flow have a higher ability to take on more debt. One of the interesting example of company that uses high level of debt financing is General Mills, a well-known food producer from United States. They have hold up to 90 percent of debt in their capital financing and still able to sustain even during economic recessions. This is mainly due to the stable sales and sufficient cash flow in their company. For the firms in stable industries, positive growth stage and favorable economic conditions, they are recommended to use debt financing in order to grow larger in the future.

Generally, leverage is known the decision of firm in choosing debt at different level of their capital structure. It can be measured through calculating the percentage of total liabilities over total assets. Financial leverage is focused in this study as it reflects the amount of debt that used in the firm's capital structure and debt will carry a fixed obligation of interest payments. The degree of financial leverage can be measured through the ratio of the percentage change in earning per share (EPS) and percentage change in earnings before interest and taxes (EBIT).

Based on the past studies, the researchers have found out that there are many variables that will influence financial leverage of firms. However, based on the past researches, the variables that used to measure the financial leverage of firms still unconfirmed (Gill and Mathur, 2011). The argument among the researchers that hold with different point of views and theories that support their ideas have been continued since last century. Due to the difference in the area that the study have been conducted, the results that obtained are also vary. Therefore, it is important for this study to discover the suitable variables that can explain the decision of the financial leverage of firms.

1.2 Problem Statement

As a developing country, Malaysia has an emerging economy which the government need to have higher control towards listed companies due to the imperfection in the market. Government linked companies (GLCs) in Malaysia are defined as the commercial companies which the government have direct stake control power toward them. The investment of government toward the GLCs will provide extra funding for the future development of not only the firm themselves but also the whole industry. They have continuously play an important role in the economy of Malaysia. As the G20 firms that was included in the GLC Transformation Program grew their market capitalization by more than three times from RM133.8 billion to RM431.1 billion during the period from May 2014 until April 2015. According to the report of the program, the G20 has increased its international and regional presence in over 42 countries all over the world. In 2015, there are approximately 34 per cent of the G20 firms' revenue are coming from abroad, a sharp increase as compared to year 2004.

Khaliq *et al.* (2014) stated that GLCs are the backbone for the economy of Malaysia because they have contributed significantly to national economy by spending

RM153.9 billion in domestic investment in that period, paying out RM108.3 billion in total dividends and RM63.5 billion in total taxes. According to Ahmad and Rahim (2013), the influence of GLCs toward the economy of Malaysia are growing rapidly through the years, this study is interested to study the importance and types of debts that was used by the GLCs to finance their operations. These information will help us to determine the main factors that influencing the financial decision of the GLCs.

Government-linked Companies (GLCs) are often concerned by the government of Malaysia. In order to achieve the mission of becoming a developed nation by the year 2020, the government have officially launched a 10-year program which is GLC Transformation Program on 29 July 2005. There are three underlying principles stated in this program in order to improve the performance and efficiency of the GLCs into international standard, nation building and providing benefits to all stakeholders. In addition, this program also believed to be able to improve the sustainability and make the GLCs become regional and global companies in the future. There are 17 GLCs that lies under this program and they have been given well support by the government that called G20. The G20 are made up from companies in different sectors such as communication, electricity, airlines and financial services.

As the GLC Transformation Program ended last year in the 28 of July, when look back at the reports that was announced by the government have shown that GLCs not only have given a brilliant results of 10-year financial track record, but they also able to become catalyze in providing high contribution for the nation-building (GLC Transformation Programme Report Card). Based on the financial perspectives such as market capitalization, net profit and return on investment, G20 have shown significant growth throughout the 10-year program. Other than that, some of the G20 companies such as Telekom Malaysia (TM), Malaysian Airport Holding Berhad (MAHB) and United Engineering Malaysia (UEM) able to turn around become more profitable and even received higher international recognition (Norlaila and Suzana, 2011).

However, the capital structure decision of GLCs is very important to their financial situation. According to Ahmad and Rahim (2013), the GLCs tend to find an ideal capital structure that could lower the cost of capital as well as reach the optimal level of debt. As suggested by Eriotis et al. (2007), inappropriate debt policy decision can cause financial distress and finally lead to bankruptcy. A research that conducted by Wiwattanakantang (1995) suggested that the GLCs in Thailand can be highly leveraged as they can easily access to secured loan. One of the example of GLCs that recently faced the financial problem is Malaysia Airline System (MAS) which have been delisted from BURSA Malaysia. This action was caused a large impact towards the confidence of the investors toward the GLCs. Due to the important role of debt level for the GLCs, this study are interested to study the financial leverage that exist within the companies as well and the factors that influence their financial leverage as this might help to predict and estimate the future development of Malaysian GLCs.

Based on the studies of past researchers, there are several important variables such as profitability (amount of profit that generated by the firms), tangibility (collateral capacity owned by the firms), growth rate (the changes of total asset of the firms from year to year), gross domestic product (economic development of the country) as well as industry median (the median of the firms within the same industry) that have significant impact on the leverage decision of the firms. Those variables were the usual variables that used to measure financial leverage as they reflects the internal condition of the firms.

This study have included five micro variables and one macro variable which is considered suitable and important to the sample of GLCs in Malaysia. These six variables are firm size, profitability, asset structure, growth rate and liquidity as well as inflation rate which often being included in their study of financial leverage. Firm size is defined as the amount of sales that achieved by the firm at the particular year. Meanwhile profitability is the return on equity that given by the firm to the investors. Asset structure in the other word is the tangibility of the fixed asset that owned by the firm. Growth rate of firm is the percentage of increment of their total asset. Liquidity is the amount of capital that the firm have to pay their obligations. Inflation rate is the rise in the price of general goods in Malaysia. This study believe that these variables will have significant influence towards the financial leverage decision making of GLCs in Malaysia.

There several difference between this study and the previous study where this study have included the most recent data until year 2015. The arise of the GLCs bankruptcy risk issue that arise recently by companies such as Sime Darby and Malaysia Airline System have gain the interest to study on the changes of financial leverage level of the firms throughput the years and discover the factors that influence the financial leverage of the GLCs. As financial leverage that used in this study was measured by the amount of debt that the firm owned and when the leverage reached a certain level, it can lead to high risk of bankruptcy.

1.3 Research Questions

Based on the problem statement mentioned above, the study has the following research question:-

What is the relationship between micro variables (firm size, profitability, asset structure, growth rates and liquidity) and macro variable (inflation rate) with financial leverage used by GLCs in Malaysia?

1.4 Research Objectives

The overall objective of this study is to determine the factors that influence financial leverage among the GLCs in Malaysia. The specific objectives of the study are as follows:-

i. To determine whether firm size influences the financial leverage among the GLCs in Malaysia.

ii. To determine whether profitability influences the financial leverage among the GLCs in Malaysia.

iii. To determine whether asset structure influences the financial leverage among the GLCs in Malaysia.

iv. To determine whether growth rate influences the financial leverage among the GLCs in Malaysia.

v. To determine whether liquidity influences the financial leverage among the GLCs in Malaysia.

vi. To determine whether inflation rate influences the financial leverage among the GLCs in Malaysia.

1.5 Scope of study: Government Linked Companies in Malaysia

GLCs started when the implementation of privatization program by the government in 1980s. This national policy have its main purpose in reducing the public sector's size and to generate stronger cooperation with the private sector. According to the government, they believed that through this privatization policy, it can help to improve the overall efficiency and productivity of the country into a higher level. Under the privatization policy, the government transfer their former State Owned Enterprises (SOEs) into profit-oriented private ownership companies. However, the government still holding most of the equity in their hand and have directly control towards these companies. Other than that, the government also have expanded their control toward several private entities through the purchase of their equity. All those government have major ownership companies are known as the Government Linked Companies (GLCs). The ownership of these GLCs are controlled by Government-Linked Investment Companies (GLICs) under the behalf of federal and state governments.

According to the report of Prime Minister Department of Malaysia (1991), there are originally nine listed GLCs that owned by the federal government and the number has keep increasing from year to year. Based on the PCG Progress Review Report, the number of GLCs reach up to 57 and contribute up to 59% of the total market capitalization in 2005. The high bundle of controlling these large number of GLCs makes the government in deciding to forgo some of the subsidiaries in order to improve their performance and concentrate on their core business activities. Although this unbundle process have significantly lowered the number of GLCs, but their performance can still influence the economics growth of Malaysia. However, most of these remaining GLCs are reported to be underperforming over the years and hence slowed down the progress of government effort that moving forwards to the Vision 2020 that make Malaysia become a developed country.

There are currently five GLICs including Lembaga Tabung Angkatan Tentera (LTAT), Khazanah Nasional Berhad (KNB), Lembaga Tabung Haji (LTH), Pemodalan Nasional Berhad (PNB) and Kumpulan Wang Simpanan Pekerja (KWSP) controlled for the GLCs that included in G20 of the transformation program ended last year. The G20 companies are Affin Holding Berhad, Axiata Group Berhad, BIMB Holding Berhad, Boustead Holding Berhad, Chemical Company of Malaysia Berhad, CIMB Group Berhad, Malayan Banking Berhad, Malaysia Airport Holding berhad, Malaysia Builduing Society Berhad, Malaysia Airline System Berhad, Malaysian Resource Corp Berhad, Sime Darby Berhad, Telekom Malaysia Berhad, Tenaga Nasional Berhad, TH Plantation Berhad, UEM Group Berhad and UMW Holding Berhad.

There are a total of 47 GLCs that listed in BURSA Malaysia and 15 out of them were chosen as the sample of this study. Similar with most of the previous study, financial sector firms were removed due to different in business nature where the financial sector firms have a different level of financial leverage as compared to the other sector such as manufacturing and trading companies. Other than that, after considered the limited annual report that available in BURSA Malaysia, only 15 GLCs had been chosen to conduct the study.

1.6 Significance of the study

The investigation of financial leverage determinants has been conducted by many of the researchers since 1970s. However, there are still lack of common agreement towards the specific variables that can be used by all the companies in different area. According to Onofrei et al. (2015), the intensity of the study toward the determinants of financial decision of firms are increasingly engaged by more researchers due to the lack of homogeneity of theoretical grounding, different in the economic and financial phenomena as well as the result that obtained are varies. There are a limited number of study towards the financial leverage for the companies in Malaysia mainly due to the unsure of the determinants that is suitable to use in the study. This study is believed to be able in generating the focus of the other researchers to conduct their study based on financial leverage in Malaysia as it can influence the overall performance of the company as well as the national economic situation. In addition, this study will be using econometric method to carry out regression model in analyzing the panel data.

Nevertheless, this study also provide micro variables theory of financial leverage determinants for the GLCs in Malaysia and identify the most suitable theories that fit to explain the leverage decision of the firms. The determinants of financial leverage varies with different firms across different countries, therefore it is important for us to learn which of the variable(s) will be suitable to investigate the use of debt in financing their capital for GLCs in Malaysia. This might help the management of GLCs in understanding which variables have the largest impact on their leverage choice and how to fully utilize these variables by controlling and maintaining the safety level of debt within their companies. Through these information, the management team of GLCs can take into consideration of their future plan and strategies as well as implementation of new policy in their company. Furthermore, other than providing information to the GLCs in Malaysia, this study also might contribute to the government whether the GLCs are performing well and able to estimate their future growth. Lastly, this study can be used by the future researchers to continue the study on financial leverage based on different variables.

1.7 Organization of Remaining Chapters

The rest of this study is organized and stated as followed:

In chapter 1, the objectives and significance of this study have been discussed. In chapter 2, will discuss about the studies that have been done by previous researchers about the definition and classification of financial leverage according to the different theories that have been proposed and studied by the past researchers. While in chapter 3, will highlight the research framework and display the independent variables as well as dependent variable in the flow chart for easy understanding. This chapter also included the sample data collection and selection, measurement of variables and method of analysis in this chapter. Next, for chapter 4, will present the outcome and results of our analysis through the method that discussed in the previous chapter. In the last chapter, chapter 5, will try to come out with some discussion on our findings, limitation and suggestion for the future study in order to increase the interest of Malaysian researchers to conduct their study on financial leverage.

CHAPTER 2

LITERATURE REVIEW

2.1 Theories Related to Financial Leverage

This section discussed the financial theory that have been study by the past researchers related with the decision of financial leverage in the capital structure of company. The theories that have been discussed in this section are Capital Structure Theory, Static Trade-off Theory, Pecking Order Theory and Agency Cost Theory.

2.1.1 Capital Structure Theory

Capital structure theory is the first theory that explain the decision of firms to use different capital structure. Modigliani and Miller (1958) stated that firms will always decide the mix of debt and equity that minimize weighted average cost of capital (WACC). According to Gill *et. al.* (2012), firms often maintain a certain degree of debt in their capital structure because debt is less costly than equity as interest expenses is tax deductible. This helps the firms to minimize cost of capital and at the same time maximize the firm value. This theory is sometimes called the irrelevant theory due to its perfect condition which stated that the capital structure is irrelevant to the firm value during perfect capital market and fixed investment policy. This theory assumed the absence of transaction cost, tax subsidies of interest payment and equal corporate and individual interest rate in the market.

Therefore, some financial researchers later have proposed several theories which opposed the market perfection and take more consideration towards other reality assumptions. These considerations are related to costs and benefits that have significant relationship with firm's capital structure decision. There are four important theories that derived from this theory will be discussed in next sections.

2.1.2 Static Trade-off Theory

Modigliani and Miller (1963) have improved their irrelevant theory by considering the important role of corporate tax towards the decision of capital structure. This theory was later perfected by Myers in 1984. He stated that firms will make decision on the ratio of debt and equity finance that needed according to the evaluation of the costs (bankruptcy cost) and benefits (tax treatment) that come along with them. As mentioned before, interest payment on debt is necessary for the firms to give up and they might be able to enjoy a higher tax advantage if they are financing at a higher level of debt. In ceteris paribus, we can say that the higher the bankruptcy cost, the lower the debt that used by firms and vice versa; while when the marginal tax rate is higher, the firms will tend to use more debt and vice versa.

Another researcher, Graham (1996) have found out evidence to support this theory by proving the significant positive relationship between debt and marginal tax rate. Later in 2003, Graham discovered that firms with high tax rate intend to use debt rather than equity due to the tax shield advantage on interest expenses. This indirectly related to the level of profitability of the firms because in generally, higher profit firms will be imposing with a higher tax rate in most of the country. According to Jaggi and Gul (1999), large firms are generally more diversified and have a lower risk to bankruptcy and financial distress. Large firms are often have easier access to bond market and allow them to issue higher level of debt.

2.1.3 Asymmetric Information Signaling Theory

This theory argued that there are an existence of information asymmetry among the internal management and external financial providers of the firm. This causes the relative financing cost to be vary between different sources of finance. The internal manager of the firm will definitely have more information than the outside investor as they are the one who running the whole operation. According to Myers and Majluf (1984), there is a hierarchy of firm preference with respect to the financing of their investments. Information from the management of the firms are transferring into signals that provide indication for the investors about the prospects of the firm (Brigham *et al.*, 2010).