MARKET TIMING AND CAPITAL STRUCTURE: MALAYSIAN EVIDENCE

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ABSTRACT

This paper is to examines whether the market-timing are found to be relevant in Malaysian firms financing decision. Limited studies have been conducted in the emerging or developing country such as Malaysia. Thus, this study have two objectives to be achieve in this study which are (1) to identify the determinants of the change in book leverage based the market-to-book, profitability, asset tangibility, and size, (2) to seek whether the financing decision in Malaysian firms were mostly made through net equity issues as implied by the market timing theory. In the descriptive analysis show one notable finding is when the mean of net equity issues increases at IPO+5 associated with decreasing mean of book leverage and market leverage. The determinants support most of the past studies in market timing. Thereby, this study found an indicator or sign that Malaysian firms follow the market timing behavior, yet not conclusive.

Keywords: Market timing, capital structure, market-to-book

ABSTRAK

Kajian ini adalah bertujuan untuk mengkaji sama ada *market timing theory* didapati relevan dalam pembiayaan firma di Malaysia. Kajian yang dijalankan di negara membangun adalah terhad seperti di Malaysia. Oleh itu, kajian ini mempunyai dua objektif untuk dicapai iaitu (1) untuk mengenal pasti penentu perubahan dalam *book leverage* berasaskan *market-to-book, profitability, asset tangibility* dan *firm size,* (2) untuk mencari sama ada pembiayaan di firma Malaysia kebanyakannya dibuat melalui *net equity issue* seperti yang dicadangkan oleh *market timing theory*. Penentu ini menyokong kebanyakan kajian masa lalu dalam *market timing*. Dalam analisis deskriptif menunjukkan satu penemuan yang ketara untuk *market timing theory* apabila *net equity issue* di IPO+5 meningkat yang berhubung kait dengan penurunan purata *book leverage*. Oleh itu, kajian ini mendapati penunjuk atau petanda bahawa firma Malaysia mengikut tingkah laku *market timing theory*, namun tidak konklusif.

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Tengku Muhammad Farhan Bin Tengku Md Yusoff

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CHAPTER ONE

BACKGROUND OF THE STUDY

1.1 Introduction

Capital structure is a firm's choice in managing its long-term financing in an attempt to maximize value. This capital structure involves the firm's financing choices comprising debt, short-term or long-term, equity, or combination. However, a firm needs to meet its appropriate strategy to finance its investment in order to expand its business, and at the same time avoiding the company from facing any financial distress that could lead to bankruptcy.

This chapter addresses and outlines the basis and plan of this study. This chapter is to provide the snapshot on the background of the study in Section 1.2, problem statement in Section 1.3, research questions in Section 1.4, research objectives in Section 1.5, significance of the study in Section 1.6 and Section 1.7 discusses the scope of the study. Finally Section 1.8 explains the organization of this dissertation.

1.2 Background of the study

Most of the studies on capital structure determinants are still inconclusive (see Titman & Wessels, 1988). These studies mostly tested the two traditional theories of pecking-order and trade-off. However, not many have test the market timing theory by Baker and Wurgler (2002) which made its debut later. Likewise, most Malaysian based studies also tend to test the two traditional theories and similar results have been reported (see Deesomsak *et al*. 2004 and Mahmood, 2007). This study attempts to move a step ahead in testing the market timing theory by Baker and Wurgler (2002) and seek the relevance of this recent theory in Malaysian firms. Thus far, limited

studies have been conducted in the emerging or developing country such as Malaysia. This study attempts to seek explanation to the inconclusiveness of the traditional theories. The findings by Baker and Wurgler (2002) claim that this theory is a good financing decision could be applied by manager instead of following the behavior of the traditional theories.

1.3 Problem statement

The inconclusive results of the past capital structure studies on the static trade-off and pecking order have triggered this study to examine whether the market-timing are found to be relevant in Malaysian firms' financing decision. Cultural dimensions would give different result since it has different economic environments (Hofstede, 2001).

The market timing theory proposed by Baker and Wurgler (2002) seek whether firms time their issuance of stocks when the stocks market value is high. Otherwise they will repurchase the stocks when they are in low value. Hence, share price performances are negatively correlated to leverage as predicted by the theory of market timing in capital structure. Hovakimian *et al.* (2001), Graham and Harvey (2001), Deesomsak *et al.* (2004), Welch (2004) and Nor *et al.* (2011) find that managers of a particular firm would issue stocks in a prosperous way when the price of the share increases. Hovakimian (2006) finds that the persistency of the market timing holds for two to three years, after that they will rebalance their debt. This means that the study shows that firms with a high value of historical market-to-book ratios would issue stock, otherwise they will issue debt if the historical market-to-book ratio is low.

Adapting to Baker and Wurgler (2002) market timing model, this study intends to find evidence in answering the pro-long inconclusive results of the traditional theories. The traditional capital structure theories are in existence since the study of Modigliani and Miller (1958) which later give rise to the static trade-off theory and Myers and Majluf (1984) which resulted in the pecking-order theory. Nevertheless, studies on market-timing theory have mostly been conducted in developed countries (see Baker & Wurgler, 2002; Hovakimian, 2006; Bougatef & Chichti, 2010). Thus, this study attempts to fill the gap by seeking its relevance in an emerging country. Market timing theory is the theory which leads a firm to issue equity when the firm's value is high and issue for debt when its value is low. Chen *et al.* (2013) has conducted a study on capital structure decisions in Taiwan. Their studies are based on whether Taiwanese financing behavior is inclined towards the pecking-order or market timing. Their result shows similarities with past studies on market timing. The main question is whether the capital structure choice would be similar or different in the emerging countries compared to the developed countries. Adapting Hofstede's (2001), Arosa *et al.* (2014) have tested the market timing behavior in both developed and emerging countries. Their findings do support the market timing claim of Baker and Wurgler (2002) and Hovakimian (2006) when tested in developed countries, however, show mixed results when tested in emerging countries.

To summarize, this study plans to gain some insight on the applicability of this theory in the emerging economy such as Malaysia. It is hoped that this study could shed some lights in explaining the inconclusive results when tested based on the two traditional theories of static trade-off and pecking-order.

1.4 Research Questions

Specific questions on this issue are as follows:

i. To what extent do the determinants of market timing theory apply to Malaysian firms?

ii. Does the Malaysian firms' financing behavior follow the market timing theory?

1.5 Research Objectives

Based on the research questions posed above, the objectives of the study are as follows:

i. To identify the determinants of the change in book leverage based the market-to-book, profitability, asset tangibility, and size.

ii. To seek whether the financing decision in Malaysian firms were mostly made through net equity issues as implied by the market timing theory.

1.6 Significance of the study

This study hopes that with the findings, managers can understand more about Malaysian firms' financing behavior. In addition, it could provide guides to the managers in selectin their financing structure.

1.7 Scope of the study

The sample period of this study is 15 years covering from the year 2000 until 2014. Initially, the sample is all companies in the manufacturing sectors which the IPO dates can be determined during this selected period. Firms with incomplete data, however,

are omitted from the sample. Data collected will be analyzed by ordinary-least-square regressions (OLS regression).

1.8 Organization of the study

The remaining chapters of this dissertation are as follows; Chapter 2 provides the overview of past literature. Subsequently, Chapter 3 explains the research methodology which covers the sample, data collection method, measurement of variables and the technique of analysis. Chapter 4 discusses the findings and the analysis. Finally, chapter five presents the conclusions.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter discusses the capital structure literature and their empirical evidence on the determinants of capital structure, with special attention given to the recent market timing theory by Baker and Wurgler (2002).

The chapter consists of five sections including this introduction section. The following Section 2.2 presents an overview of the capital structure theories and the empirical evidence. Section 2.3 discusses the market timing theory of capital structure. Section 2.4 discusses about market timing theory evidence from developing or emerging countries. Section 2.5 consists the discussion on the determinants of market timing theory. Section 2.6 discusses about capital structure decision in Malaysia. The final Section 2.7 concludes the chapter.

2.2 Overview of the capital structure theories and empirical evidence

The existing capital structure literature has been focusing on the past theories of the static trade-off and pecking order. The two theories have evolved for over sixty years beginning with the initial paper from Modigliani and Miller (1958). These issues have been discussed in depth by many researchers, empirically and theoretically. Triggering from the initial paper by Modigliani and Miller (1958) and later introducing the correction of Modigliani and Miller (1963) and Miller (1977), they used perfect market assumptions, corporate income taxes and personal income taxes respectively. Several models arises from those theories which include bankruptcy costs (Stiglitz, 1969), agency costs (Jensen & Meckling, 1976), managerial operating

decision (Harris & Raviv, 1990), asymmetry information (Ross, 1977) and transaction costs (Myers, 1984). All of these models have focused on seeking views on capital structure decision whether the financing behavior follows the trade-off theory or pecking order theory. The models above such as financial distress cost, agency cost and managerial operating decision have led to various results. The result of Stiglitz (1969) shows that a risky debt will be compensated with higher interest payment and this would affect the firm's value (Chen & Kim, 1979). This means, equity are most relevance to avoid bankruptcy. However, agency cost model shows differing results in several studies. Jensen (1986) finds that debt is the important key for investor's valuation to invest in a firm. Earlier, Jensen and Meckling (1976) have claimed that agency costs can lead to an asset substitution effect when a firm has too much debt will shift the wealth from bond holders to equity holders. The managerial operating decision model explanation is more to favor debt. It claims that debt lessens the investors' option to force liquidation (Harris & Raviv, 1990). In addition, debt would protect against takeovers (Stulz, 1990). All these results have led to the trade-off theory of capital structure. This theory claims that firm strives to achieve optimal debt ratio in order to maximize its value. In support the study by Clagget (1991) shows that the debt ratios seem to move towards the targeted ratios.

The transaction cost and asymmetry information models, however, have led to explain to alternative capital structure theory of pecking-order. This theory favors debt and focus on minimizing transaction costs (Myers, 1984). The asymmetry information models consist of two implications which are the signaling argument and the mispricing investment argument. The signaling argument claims that amount of debt held defines the effectiveness and efficiently of the firm's performance (Ross, 1977 and Leland & Pyle, 1977). On the other hand, the mispricing investment is mostly the

investors' concern. The model claims that when a firm uses too much equity, it may result in the firm investing in negative net present value (NPV) (Heinkel & Zechner, 1990). Nonetheless, many studies on these have shown inconclusive evidence. For example despite having claimed that firms' debt ratio seem to move towards the targeted ratio, Clagget (1991) also indicates concern that some financing restrictions may lead firms to choose the financing based on pecking-order behavior.

There are a number of evidence that show inconclusive results. A study by Titman and Wessels (1988) use three measurements of debt instead of total debt as dependent variables and measured against the independent variables. The selected leverage measurements are short-term, long-term and convertible. Their results do not provide any supports to the optimal capital structure theory. The changes in the ratios are due to other factors such as the non-debt tax shields, volatility, asset tangibility, or future growth.

Another study that shows inconclusive result is conducted by Fama and French (2002), which is motivated by dividends and leverage. The result shows various predictions involving the two theories. On one hand, more profitable firm's paid high dividend otherwise, they will pay low dividend because of the interested more in investing. Although not statistically dominated, their findings are consistent with these predictions. On the other hand, different ways of investment opportunities will lead to different results on the investment and leverage relationship. Yet, the results from the various aspects of predictions are still inconclusive. The results raise many questions among the academic researchers on how a firm can maximize its value. Thus, it provides no clear guidance among managers on how to manage their firms' financing structure.

Despite of using firm-specific variables in capital structure decision, De Jong *et al.* (2008) conduct a study by using country-specific variables. Their study focuses on the factors of leverage choice in 42 countries selected around the world. Their study is triggered from the previous research by Bancel and Mittoo (2004) which suggests that the capital structure decision should include the country-specific factors as well.

De Jong *et al.* (2008) demonstrate that corporate leverage can directly and indirectly be affected by country-specific factors. For example, bonds that are more developed and traded on a public would lead to a high leverage impact on a country. However, developed stock market, the effect is contradicted. The result also shows that country-specific and firm-specific factors could influence the corporate leverage indirectly. For example, when a high value of bond in the market, it will give a high demand, thus, this would to limit the collateral value (asset tangibility) as one of the requirement for the country. In other words, this characteristic may differ in other countries. Therefore, the result of De Jong *et al.* (2008) shows that the country-specific interferences are relevant when making financing decisions.

There are studies that focus on the motives for choosing specific financing mean. Graham and Harvey (2001) survey evidence has revealed that market timing plays on important role in firm's financing decisions. In relation, the recent study by Baker and Wurgler (2002) has proposed a new theory of capital structure namely the market timing theory. This theory attempts to resolve the inconclusive issue between the trade-off theory and pecking order theory. This market timing proposes an alternative way in capital structure choice. This theory assumes that the impact of past valuations on capital structure is significant and it gives an impact on the capital structure decision.

2.3 The market timing theory of capital structure

The market timing theory was formally proposed by Baker and Wurgler (2002). Their study consists of COMPUSTAT firms that the IPO dates can be determined between the years 1968 until 1998. Their results indicate that firms do time the market when market value is high, otherwise, they will repurchase shares when market value is persistently low. Their findings based on market-to-book which indicate a strong negative correlation with leverage.

Earlier, Pagano *et al.* (1998), Loughran *et al.* (1994), Hovakimian *et al.* (2001), Graham and Harvey (2001) have indirectly tested this market timing behavior with some measurements such as market-to-book ratios, interest rates, historical stock prices, and time-varying adverse selection costs. The results of this study show that majority of firms are most likely to time the equity market when market value is high and cost of equity is low.

Pagano *et al.* (1998) examine the determinants on decision of going public with the sample of Italian firms for the period 1982 until 1992. Their results show that the industry market-to-book play a main role for a firms to go for Initial Public Offering (IPO). In relation, Lerner (1994) finds that in the biotechnology industry IPOs, volume are mostly related to the stock exchange index. Marsh (1982) has examined the capital structure choice in a sample of U.K listed firms for the period 1959 until 1974. He finds that firms tend to issue shares when the shares price increases. Jung *et al.* (1996) and Hovakimian *et al.* (2001), eventhough they fail to find any support to the timing model, find strong correlation between shares price and equity issuance. The stock price increment and the stock undervaluations are the important factors that can influence the equity issuance (Graham & Harvey, 2001).

In view of this claim, Hovakimian (2006) conducts similar study on market timing. This study is meant not to question the motives of Baker and Wurgler (2002) but to develop additional evidence to be re-evaluated with regards to this issue. He claims that the negative effect on market-to-book and leverage could support the theory of market timing. His result suggests that high market-to-book ratio would lead to equity issue and his findings also show that the effect of the issuance of equity toward leverage is economically small and not long-term.

Similarly, Arosa *et al.* (2014) conduct a study on market timing which is adapted from Hofstede (2001), using cultural dimension by selecting several countries including developed and emerging market. They find that most firms engage in the market timing for the purpose of lowering their leverage while their market value is high. They also find that firms in countries that have high level of uncertainty avoidance and high power distance, have a lower market leverage ratios. The difference in cultural dimensions will somehow reduce the effect of market timing. The results are consistent in the developed markets.

The findings from the study by Bougatef and Chichti (2010) using the samples from Tunisia and French, indicate results consistent with the market timing theory. They use Baker and Wurgler (2002) as their benchmark to achieve as issue share when market value is high and vice versa. From manager's perspective, they find that when market value is irrationally high, firms will take the opportunity to issue equity (mispricing play). Although this result may support Baker and Wurgler (2002), they also run to test the persistence of the market timing theory. The impacts on capital structure only survive for two to three years and after that firms will rebalance to the target (Bougatef & Chichti, 2010; Alti, 2016; Leary & Roberts, 2004).

Evidently, the market timing theory proposed by Baker and Wurgler (2002) indicates that firms are more likely to issue shares when their value is high, and vice versa. Some studies (see Frank & Goyal, 2004; Huang & Ritter, 2005; Hovakimian, 2006; Mahajan & Tartaroglu, 2008) find empirical evidence in different capital market towards the market timing behavior. However, the findings are mixed, hence, fail to provide support on the existence of the market timing behavior in capital markets.

Several recent studies conducted on market timing have proven the important role of financing behavior in firm's capital structure decision (see Alti, 2006; De Bie & De Haan, 2007; Hovakimian *et al.* 2004). All these studies suggest that high market-to-book is a good opportunity to issue shares therefore lowering the target debt ratios. In addition, Elliott *et al.* (2008) and Lewis and Tan (2016) look into market timing and find that market timing, with the interference of mispricing, plays a significant factor for a firm to issue shares. They claim that investors are optimistic with the firm's performance.

2.4 Market timing evidence from developing and/or emerging markets.

Most studies on the market timing theory proposed by Baker and Wurgler (2002) have been tested in developed country as discussed above. Evidence from developing or emerging countries is still minimal. Only few studies are witnessed thus far. Arosa *et al.* (2014) have tested this theory in the emerging markets but they have focused on several cultural dimension. They also include the developed countries following Hofstede (2001), based on the claim that different countries will lead to different result as in capital structure base (De Jong *et al.* 2008). Arosa *et al.* (2014) find that the results seem to be mixed and not supporting the market timing theory.

In relation, Chen *et al.* (2013) have conducted to find whether Taiwanese financing behavior follows the pecking-order or market timing behavior. Their result shows a favorable financing behavior towards market timing especially in year 1990 until 2001. The pecking-order has been clearly rejected between this particular period. In addition, they found that the market-to-book affects changes in leverage through net equity issues (the coefficients of market-to-book are significantly negative to leverage).

2.5 Determinants of market timing theory

Studies on theories of capital structure theories have been conducted and discussed empirically with concentration given to trade-off and pecking order theories. Since these theories are found inconclusive, the more recent theory by Baker and Wurgler (2002) on market timing attempts to explain a more practical financing decisions. In their study, Baker and Wurgler (2002) utilize firm specific variables such as weighted average market-to-book ratio, market-to-book ratio, profitability, firm size, fixed asset and leverage as the factors to determine the market timing. The main focus of their study is on market-to-book ratio but they also include Rajan and Zingales (1995) control variables which are asset tangibility, profitability, and firm size. The analysis conducted also follows Fama and French (2000). The variables are as below:

2.5.1 Market-to-book ratio

According Baker and Wurgler (2002), the market-to-book ratio would find that low issuance of debt means that the firm's market value is high and vice versa. The variable is measured as assets minus book equity plus market equity all divided by assets adopting Fama and French (2000). This relationship is also in agreement with Arosa *et al.* (2014). Further evidence from Hovakimian (2006), reaffirms the

significant negative effect of past market-to-book ratio on leverage. This implies that firms do time the market in past value of market-to-book. However, Baker and Wurgler (2002) do not find that negative past market-to-book with leverage would lead to the equity market timing theory. The market timing theory only indicates that firm will time the issuance shares when the market-to-book ratio is high. The study of Rajan and Zingales (1995), aim to identify the determinants of of capital structure in the developed countries that are partly from the G-7 group of industrial sector companies. Corporate leverage in these countries seems to be similar. Hence, a positive relationship is found between the asset tangibility and leverage. However, leverage has negative relationship with market value, book value, size and profitability.

2.5.2 Profitability

Past studies have looked into the relationship between debt and profitability in explaining the trade-off and pecking order theories. According to the trade off theory, mostly profitable firms tend to prefer leverage that would give them the benefit of interest tax shield. In addition, firms with higher profitability have the ability to pay their debt without difficulty, thus, at the same time they can propose additional debt to achieve the optimality in capital structure. However, debt also could lead to financial distress and bankruptcy.

Baker and Wurgler (2002), Fama and French (2000) and Rajan and Zingales (1995), define profitability as the earnings before taxes and depreciation divided by book value of total assets. In Baker and Wurgler (2002) and Die Bie and De Haan (2007) findings, profitability has a negative relationship with leverage. The more profitable a firms is, the lower is its leverage. However, most predictions in trade-off theory find

the opposite. This variable would be considered as one of the main determinant of market timing as it seems that profitability is not the main cause for firms to issue external capital (equity).

On the other hand, in the pecking-order model, profitability is negatively correlated to leverage (see Myers, 1984; Titman & Wessels, 1988) as indicated by the market timing expectation (Baker and wurgler, 2002; Bougetif & Chichti, 2010; Dani *et al.* 2016). Titman and Wessels (1988) argue that rather to use debt, profitable firms can use retained earnings as a mean of financing. This implies that a high profitable firm will lower the debt ratio.

2.5.3 Asset Tangibility

Fixed tangible assets can be used as collaterals to of debt capital providers. Asset tangibility it is defined as net property, plant and equipment divided by asset (Rajan & Zingales, 1995; Baker & Wurgler, 2002; Fama & French, 2000; Veen, 2016). Baker and Wurgler (2002) find a positive relation between asset tangibility and leverage. This relationship is in agreement with Rajan and Zingales (1995), Hovakimian *et al.* (2001) and Kayhan and Titman (2007). However, De Bie and De Haan (2007) finds opposite relationship in their study in Netherlands. However, when testing this relation during the period of financial crisis and after the crisis, Veen (2016) find that there is a positive relationship between asset tangibility and both book and market leverage during and after financial crisis.

2.5.4 Firm size

There is a significant relation between firm size and leverage. Large firms with stable cash flows would have a lower default payment as compared to their smaller

counterparts (Rajan & Zingales, 1995). Baker and Wurgler (2002) and De Bie and De Haan (2007) predict firm size which is measured by the natural logarithm of firm's sales, to be positively related to leverage. Both studies find results consistent with their predictions. Larger firms tend to be more diversified and therefore have more stable cash flows and are less likely to bankrupt.

2.6 Capital structure decision in Malaysia evidence

This section provides some evidence the capital structure decision in Malaysian market. Study of Pandey and Chotigeat (2004) has divided the dependent variable into three categories which are short-term debt, long-term debt and total debt. They also divide the observation period from 1984 until 1999 into four categories based on economic situations; downturn, upturn, stable and growth, and finally downturn. Their findings shows, mixed or no significant relationship of market-to-book with leverage. The robustness of their findings is caused by time periods but the results of some variables change over the time. Pandey and Chotigeat (2004), Deesomsak *et al.* (2004), Mahmood, (2007), Baharuddin *et al.* (2011) find more supporting on profitability relationship. Profitability has persistent negative relationship with all types of leverage. Deemosak *et al.* (2004) also test to support the existing evidence on the firm-specific determinants. However, they also conclude that country-specific determinants are important variables in their study.

Mahmood and Zakaria, (2007) conduct a study based on profitability with gearing intention of two interrelated sectors which are property and construction sector. In addition, they also attempt to provide evidence of capital structure determinants by focusing on both sectors. They find that high gearing firms would lead to high expenses on debt, thus, reducing profitability of the firms in both sectors. To confirm

the determinants of capital structure in Malaysia, Baharuddin *et al.* (2011) find that asset tangibility and firm size are most directly related to the debt. Their result shows that size and tangibility affect debt financing. This is due to the sensitivity of the construction sectors to economic condition.

2.7 Conclusion

This chapter discusses past studies on capital structure with focus given to market timing theory of capital structure. The study on traditional theories determinants of capital structure shows inconclusive results. In relation, the triggering market timing theory by Baker and Wurgler (2002) has attempted to answer the pro-long inconclusive results of traditional theories. Most of the study on market timing is conducted in developed countries and minimal studies are found on emerging countries. The discussions of capital structure decision in Malaysia have suggested that Malaysian markets are practically following the pecking-order financing behavior. Since the determinants of capital structure for the market timing are similar to the traditional theories, we anticipate the applicability of market timing in emerging countries as well, namely Malaysian firms.

CHAPTER THREE

RESEARCH DESIGN

3.1 Introduction

This chapter presents the methodology adopted to achieve the objectives of the study. It also explains the process of constructing the data set, provides a detailed description of the analysis and research design on market-timing theory tested

This chapter consists of the following sections which are Section 3.2 on data collection and sample design, Section 3.3 theoretical framework and hypothesis development. Finally Section 3.4 summarizes the chapter. The methodology will fully adopt Baker and Wurgler (2002).

3.2 Data collection and sample design

This study adopts Baker and Wurgler (2002) methodology on past market valuations and tests it in Malaysian firms. In Baker and Wurgler (2002), they regress the lagged independent variables (market-to-book ratio, tangibility, profitability, firm size) with leverage (debt ratio)

Their chosen sample is COMPUSTAT firms which the IPO dates can be determined. By knowing the IPO dates, they can examine the behavior of the leverage used after the IPO. Thus, their study focuses on market-to-book ratio. This also could allow them to study the evolution of leverage from the IPO time. In their study, they selected their sample of COMPUSTAT firms by determining in the IPO dates between the years of 1968 until 1998. They further restrict the sample to exclude the firms which have a book value of assets below than $10 million, no information on total asset and firms that exits the COMPUSTAT in the selected year. The market-to-

book ratio is defined as assets minus book equity plus market equity all divided by assets and it is measure at time t-1 and the time t-1 were applied for all independent variables. Adapting Baker and Wurgler (2002), the sample for this study investigates all firms in manufacturing sector, listed on the Bursa Malaysia from 2000 - 2015. The data used for this study is extracted mainly from the DataStream. We select manufacturing firms as they play a main role in the Malaysian economic (Hussin & Ching, 2013). Manufacturing firms that are listed in Bursa Malaysia are 218 companies. However, the firms that delist before 2015 and the data unavailability in the DataStream will be taken out. We further restrict firms by taking out firms that were listed in 2015 because the variables will be t-1. Thus, the number firms left for the next filter are 140. The gathered data will be regressed using SPSS software.

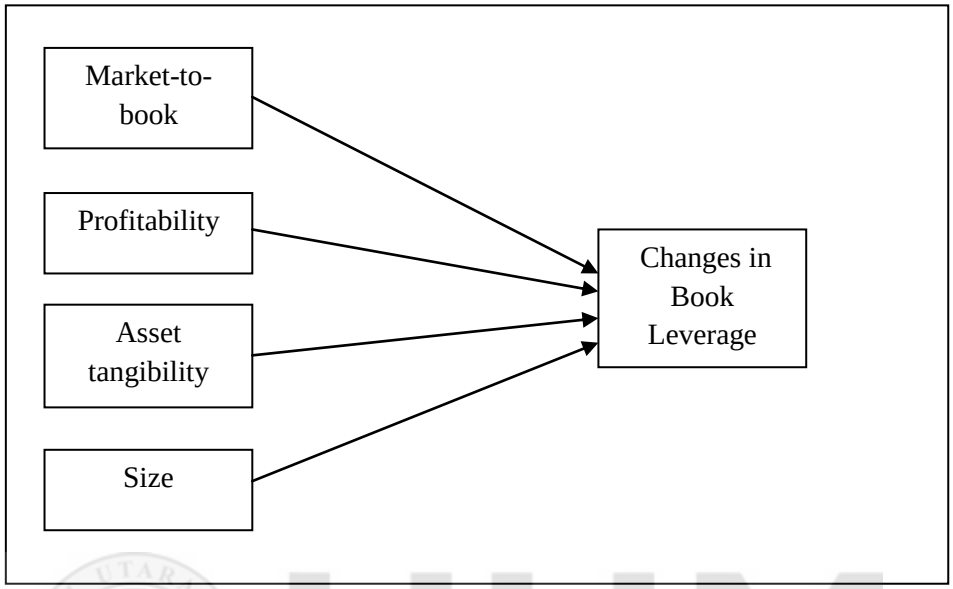
However, to fill the benchmark set of control variables, Baker and Wurgler (2002) also use the other three variables from Rajan and Zingales (1995) that correlated with leverage. The variables are asset tangibility, profitability, and firm size. Asset tangibility is defined as net property, plant and equipment divided by assets. Profitability is defined as earnings before interest, taxes and depreciation divided by assets. Firms size is defined as logarithm of net sales. Baker and Wurgler (2002) focus on the market-to-book..

3.3 Theoretical framework and hypothesis developments

Figure 3.1 shows the theoretical framework which adapts Baker and Wurgler (2002) main variables. The main variable is the market-to-book as Baker and Wurgler's mention that it plays an important role in explaning the market-timing theory (Baker and Wurgler, 2002). The other three variables which are profitability, asset tangibility

and firm size are from Rajan and Zingales (1984) control variables. They claim that these are the important variables to determine market timing capital structure as well.

Figure 3.1 Theoretical framework



Sources: Baker and Wurgler (2002)

Referring to the above theoretical framework, below are the developed hypotheses:

Hypothesis 1: *There is a relationship between change in book leverage and Market-to-book, profitability, asset tangibility and size.*

$$\left(\frac{D}{A}\right)_t - \left(\frac{D}{A}\right)_{t-1} = a + b\left(\frac{M}{B}\right)_{t-1} + c\left(\frac{PPE}{A}\right)_{t-1} + d\left(\frac{EBITDA}{A}\right)_{t-1} + e\log(S)_{t-1} + \mathrm{f}\left(\frac{D}{A}\right)_{t-1} + u_t$$

In the above equation, $\left(\frac{D}{A}\right)_t - \left(\frac{D}{A}\right)_{t-1}$ is the changes in book leverage and the subscript denotes time, where t represent the year or period mentioned. First independent variable is $\left(\frac{M}{B}\right)$ defined as the market-to-book ratio. Second variable is $\left(\frac{PPE}{A}\right)$ measured as firm tangible assets, property, plant and equipment, net of depreciation divided by total assets. The third variable is $\left(\frac{EBITDA}{A}\right)$ the firms' profitability measured by the

earnings before interest, taxes and depreciation scaled by total assets. Log(S) is the natural logarithm of firms' sales and is a measurement of firm size. Lastly, $\left(\frac{D}{A}\right)_{t-1}$ is lagged leverage being include because the leverage is bounded between zero to one. All the independent variables are in year t-1. Variable "*u*" defined as error term.

Hypothesis 2: *There is a relationship between capital structure decision and net equity issue based on the market timing implication.*

$$\left(\frac{D}{A}\right)_t - \left(\frac{D}{A}\right)_{t-1} = -\left(\frac{e}{A}\right)_t - \left(\frac{\Delta RE}{A}\right)_t - \left(\frac{\Delta LTD}{A}\right)_t$$

The above equation shows the three components that affect the changes of book leverage. Net equity issues $\left(\frac{e}{A}\right)_t$ defined as the change in book equity, minus the change in retained earnings, divided by total asset. Newly retained earnings $\left(\frac{\Delta RE}{A}\right)_t$ is the change of retained earnings divided by total assets. Net debt issues $\left(\frac{\Delta LTD}{A}\right)_t$ is the changes of long-term debt divided by total assets.

3.4 Chapter summary

This chapter summarized the data collection techniques, theoretical framework, variable measurements and hypothesis development. Multiple regression models are employed in the analysis of the study. This study data run by ordinary least squares (OLS) of Fama-Macbeth regressions

CHAPTER FOUR

FINDINGS AND DISCUSSIONS

4.1 Introduction

This chapter describes and explains the findings on the relationships between firms' capital structure as the dependent variable and market-to-book, together with the Rajan and Zingales (1995) control variables which are profitability, asset tangibility and firm size as the independent variables. Section 4.2 explains the results from the descriptive analysis. Section 4.3 describes the findings from the linear regression analysis. Sections 4.4 is the overall discussion on the findings. Section 4.5 is the summary.

4.2 Descriptive analysis

The summary statistics of the sample is presented in Table 4.1. Book leverage after IPO has increased to 2.31% at IPO+1 before the mean starts to decrease until IPO+5 and it rebounds at IPO+10. On the other hand, the mean for market leverage started to increase after IPO (2.23.%) to IPO+1 (28.73%). After that, the mean started to decrease at IPO+3 (-1.7%) and it rebounds at IPO+5 (2.46%). After that, it decreases at IPO+10 (-15.8%). The market leverage seem to have a high volatility compared with book leverage.

The same movement in the mean is also witnessed for net equity issue (LTD/At). The mean starts to increase from IPO to IPO+1 before it starts to decrease in IPO+3 to IPO+5. However, the mean increases back at IPO+10. However, net equity issues (e/At) starts to decrease at IPO to IPO+3 and bounce back at IPO+5 before it

decreases at IPO+10. The newly retained earnings (chg. RE/At) show decreasing mean from IPO to IPO+5 and it rebounds at IPO+10.

Despite of this increasing and later decreasing trend of the means, one significant increase in the mean for net equity issues is witnessed in IPO+5. The mean of net equity issues at IPO+5 has increased from 1.73% to 2.49%, while the mean of book leverage decreased from 1.39% to -1.57%. This sudden increase in the mean for net equity issues at IPO+5 indicates a large issuance of equity during the period IPO+5. At IPO+5, most firms in the sample tend to issue equity rather than debt. This may probably be one of the initial sign that firms do time their equity issuance, hence indicating the behavior of market timing. However, it is still early to conclude on market timing behavior at this point.

Table 4.1 Summary Statistics of Capital Structure and Financing Decisions

Means and standard deviation of leverage and the component change in assets. Book leverage is the book debt divided total asset and expressed in percentage terms. Market value leverage is book debt divided by the result of total asset minus book equity plus market equity and appear in percentage value. Net equity issues (e/At) defined as the change in book equity, minus the change in retained earnings, divided by total asset. Newly retained earnings (Chg RE/At) is the change of retained earnings divided by total assets. Net debt issues (LTD/At) is the change of long-term debt divided by total assets. Sample chosen is based on the availability of the data, asset, and market-to-book. The results below data in year regarding IPO for firms that can determine the IPO date.

		Δ Book Leverage D/At %		Δ Market Leverage D/At %		LTD/At %		e/At %		Chg RE/At %	
Year	N	Mean	Std. Dev	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev	Mean	Std. Dev.
IPO time											
IPO	130	1.04	7.32	2.23	13.16	1.05	5.52	3.57	12.19	5.01	10.39
IPO+1	139	2.31	6.39	28.73	32.7	2.03	5.88	2.01	7.45	3.82	7.94
IPO+3	134	1.39	6.48	-1.7	12.55	0.96	7.79	1.73	5.94	2.42	5.94
IPO+5	123	-1.57	8.52	2.46	11.71	-0.64	4.75	2.49	10.21	0.94	10.82
IPO+10	73	0.38	5.41	-15.8	31.76	0.04	4.39	-1.16	11.72	2.36	17.09

4.2.1 Correlation analysis

We also try to carry out the Pearson correlation matrix on the tested variables as presented in Table 4.2.

Table 4.2 Correlation matrix

	DR	MTBV	PROF	ASSET	SIZE
DR	1				
MTBV	-0.093	1			
PROF	-0.043	0.116	1		
ASSET	-0.101	-0.135	0.043	1	
SIZE	0.058	0.015	-0.035	-0.158	1

Source: SPSS result

Note: DR-Debt ratio, MTBV-market-to-book-value, PROF-profitability, ASSET-asset tangibility, SIZE-firm size.

Table 4.2 reveals the relationship between the dependent (debt ratio) and independent variables (market-to-book, profitability, asset tangibility and firm size). The correlation shows that only one has a positive relation with debt ratio which is firm size. The other variables (market-to-book, profitability and asset tangibility) have a negative relationship. The MTBV has a positive relationship with profitability, negative with ASSET and positive with SIZE. However, PROF has a positive relationship with ASSET, and negative with SIZE. Lastly the ASSET has a negative relationship with SIZE. Although all the variables are insignificant, this analysis tends to explain that there is no issue on multicollinearity between the independent variables.

4.3 Linear regression analysis

The discussions that follow focuses on the regressed result of book leverage against market-to-book, profitability, asset tangibility and firm size following Baker and Wurgler (2002), as stated in Hypothesis 1.

$$\left(\frac{D}{A}\right)_t - \left(\frac{D}{A}\right)_{t-1} = a + b\left(\frac{M}{B}\right)_{t-1} + c\left(\frac{PPE}{A}\right)_{t-1} + d\left(\frac{EBITDA}{A}\right)_{t-1} + e\log(S)_{t-1} + \mathrm{f}\left(\frac{D}{A}\right)_{t-1} + u_t \quad (1)$$

The result from the regression formula is presented in Table 4.3 (Panel A) which consists of the results from the period of IPO to IPO+t. The mixed results of coefficients obtained as indicated in first column find that market-to-book having significant values at IPO and IPO+3. The second column on asset tangibility shows significant value at IPO, however mixed results are obtained based on the coefficient. The next column on profitability shows negative coefficients and it is significant at IPO, IPO+1 and IPO+3. The column on firm size shows mostly no relation but at IPO+1, it has a significant value.

$$\left(\frac{D}{A}\right)_t - \left(\frac{D}{A}\right)_{t-1} = -\left(\frac{e}{A}\right)_t - \left(\frac{\Delta RE}{A}\right)_t - \left(\frac{\Delta LTD}{A}\right)_t \quad (2)$$

Based on the Equation 2 (with reference to Hypothesis 2), the change in book leverage is due to either it is net equity issue, newly retained earnings or growth in long-term debt. Each component is then regressed with the independent variables of market-to-book, profitability, asset tangibility and firm size. The result of this regression is presented in Table 4.3 (Panel B, C and D).

In Panel B, market-to-book (M/B) coefficient has a positive relation at a lower amount. This contradicts the correlation matrix presented earlier which shows a negative correlation with the debt, however, the value is very low since it is –0.093 thus, insignificant. Only at IPO+5 that the cofficient has significant value. Asset tangibility shows mixed result but only at IPO+3 and IPO+10 the coefficient is significant. Profitability also indicates mixed result of the coefficients at IPO+t and none is significant. Firm size shows at IPO+5 has a significant value and mixed result of the coefficient.

Panel C represents the changes of leverage due to newly retained earnings. The coefficients of M/B are negative at and after IPO date. However, none of the coefficients is significant. The column on asset tangibility also shows negative coefficients and none is significant. Profitability is high related to the newly retained earnings, and it indicates a strong positive coefficient with all significant in the time of IPO. Firm size shows only one significant coefficient which is at IPO+5. All other coefficient seems mixed.

Panel D represents the change in book leverage which is due to growth in long-term debt. The market-to-book column shows only significant value at IPO. All other coefficents show mixed results. Asset tangibility also indicates mixed results. It is only significant at IPO+10. Profitability also shows mixed results and it is only significant at IPO date. Assset tangibility shows that only at IPO+1 it has negative coefficient, but only significant at IPO+1 and IPO+3.

Table 4.3 Determinants of Annual Changes in Leverages and Components

The market-to-book ratio is defined as assets minus book equity plus market equity all divided by assets and it is measure at time t-1 and the time t-1 were applied for all independent variables. Asset tangibility were defined as net property, plant and equipment divided by assets. Profitability defined as operating income before depreciation divided by assets. Firms size defined as logarithm of net sales.

		M/B t-1		PPE/A t-1 %		EBITDA/A t-1 %		log(S) t-1		
Year	N	b	t(b)	c	t(c)	d	t(d)	e	t(e)	R square
Panel A: Change in Book Leverage (-(chg D/At)) %										
IPO	130	0.03	3.45***	0.08	2.35**	-0.43	-4.63***	0.01	1.29	0.19
IPO + 1	139	-0.01	-0.79	0.01	0.41	-0.19	-2.62***	-0.01	-2.20	0.14
IPO + 3	134	0.02	2.98**	-0.01	-0.24	-0.30	-4.07***	0.00	0.21	0.13
IPO + 5	123	-0.02	-1.71	-0.08	-1.95	0.13	1.32	0.00	0.18	0.06
IPO + 10	73	0.01	1.63	0.02	0.57	-0.11	-1.74	0.00	0.26	0.09
Panel B: Change in Book Leverage due to Net Equity Issues (-(e/At)) %										
IPO	130	0.00	-0.02	-0.40	-0.69	0.11	0.70	0.00	0.05	0.01
IPO + 1	139	0.01	1.62	-0.06	-1.48	0.05	0.58	-0.01	-1.39	0.06
IPO + 3	134	0.01	1.55	0.06	2.03*	-0.03	-0.42	0.00	-0.25	0.04
IPO + 5	123	0.03	2.58**	0.01	0.18	-0.18	-1.53	-0.02	-2.60***	0.11
IPO + 10	73	0.04	1.89*	-0.16	-2.15**	-0.13	-0.99	0.01	1.04	0.11
Panel C: Change in Book Leverage Due to Newly Retained Earnings (-(Chg RE/At)) %										
IPO	130	0.01	0.79	-0.04	-0.92	0.78	7.00***	-0.01	-0.97	0.34
IPO + 1	139	-0.01	-1.59	-0.04	-1.19	0.66	9.57***	0.01	1.29	0.48
IPO + 3	134	-0.01	-1.95*	-0.02	-0.59	0.63	9.04***	0.00	0.00	0.64
IPO + 5	123	-0.02	-1.85*	-0.01	-0.29	0.45	4.10***	0.03	4.41***	0.29
IPO + 10	73	-0.04	-1.60	0.08	0.86	0.86	5.10***	-0.01	-0.83	0.30
Panel D: Change in Book Leverage Due to Growth in long-term debt (-(Chg LTD/At)) %										
IPO	130	0.01	2.37**	0.04	1.41	-0.18	-2.58**	0.00	0.84	0.08
IPO + 1	139	-0.01	-1.19	-0.22	-0.71	-0.05	-0.70	-0.01	-2.30**	0.06
IPO + 3	134	0.01	0.74	0.02	0.55	-0.14	-1.48*	0.01	2.31**	0.05
IPO + 5	123	-0.01	-1.01	-0.03	-1.20	0.07	1.26	0.01	1.19*	0.05
IPO + 10	73	0.00	0.09	0.06	2.05**	0.12	2.42**	0.00	-1.50	0.11

Note: *** significant at 1% level
**significant at 5% level
*significant at 10% level

4.4 Findings and discussion

In the descriptive analysis, it can be concluded that the book leverage is decreasing over the time of IPO. Only at IPO+5 shows a decreasing leverage level when the equity issuance increases. This finding implies an initial sign of the existence of market timing behavior in Malaysian firms.

In the correlation matrix, the relationship of market-to-book, profitability, asset tangibility and firm size with debt ratio. As for testing Hypothesis 1 on the determinants, the findings indicate that the market-to-book has an inverse relationship with the debt ratio (Fama and French, 2000 and Hovakimian, 2006). This can be shown that when a market value of a firm is high, it would lower the debt level. Thus, firms will issue equity when their market value is high. This claim is supports by Baker and Wurgler (2002) and Arosa *et al.* (2014). Profitability shows an inverse relationship with debt, thus in agreement with Mahmood (2007) and Die Bie and De Haan (2007). From what has been explained by Titman and Wessels (1998), profitable firms will rather use internal fund than external in cases when they need financing. This would make firms less active in financing with debt or equity (pecking-order theory). Asset tangibility of this study supports De Bie and De Haan (2007) which indicate negative relationship with leverage. Most of the previous studies show that asset tangibility has positive correlation with debt. This means that higher collateral value would made firms easily involved in debt. Only firm size shows positive correlation with debt. This is in support of Rajan and Zingales (1995) which claim that large firms will have less possibility to go bankrupt. Large firms are considered to have a strong cash flow and not defaulting their payment. The correlation matrix shows that there is no significant relationship between the independent variables.

As for testing hypothesis 2 on whether the market timing is applicable in Malaysia (changes of debt is due to net equity issue), Panel B shows that there is a significant relationship between the net equity issues and market-to-book since at IPO+5, the t-statistics value is higher than 2 compared to panel C and D. There is a sign of market timing behavior. The positive coefficient of market-to-book obtains in Panel B however, shows a very low correlation.

4.5 Summary

This chapter discusses and explains the results obtained from the analysis in this study which look at the relationships between the dependent variable that is changes on book leverage and independent variables which are market-to-book, profitability, asset tangibility and firm size. It also tests the market timing implication in the Malaysian markets. The analysis performed are descriptive analysis, correlation analysis and regression analysis to meet the objectives of the study.

In conclusion, the correlation results are similar with past studies (Mahmood and Zakaria, 2007; Mahmood, 2007; Baharuddin *et al.* 2011) in terms of determinants of capital structure in the Malaysian sample. The market-to-book, profitability and asset tangibility shows negative correlations with leverage. However, firm size shows the opposite. In the regression analysis, there is a sign of market timing at time IPO+5 when the t-statistics value is higher than 2. The descriptive analysis also shows that the changes of the mean for book leverage inversely relation to net equity issues. This means that the increase of equity issues will lower the firm's leverage.

CHAPTER FIVE

CONCLUSION

5.1 Introduction

This study examines the determinants of capital structure theory of market timing and test the applicability of market timing theory in Malaysian firms. The overall results conclude some signs of market timing behavior in the sample of Malaysian manufacturing firms.

This conclusion chapter is divided into several parts. Section 5.2 provides the descriptive analysis of the variables measured. Section 5.3 presents the discussion on the determinants of the market timing behavior. Section 5.4 discusses the applicability of market timing in the Malaysian context. Section 5.5 presents the general conclusion of the study. Limitations of the study are discussed in section 5.6. Finally, section 5.7 offers suggestions for future research.

5.2 Descriptive analysis

In the descriptive analysis (refer to table 4.1), it is found that book leverage seems to decrease after IPO until IPO+5 but market leverage decreases from IPO+1 until IPO+10. Comparing to Baker and Wurgler (2002) their result seems to be conflicting with this description. Their study shows an increasing value of the mean. However, one notable finding is when the mean of net equity issues increases at IPO+5 associated with decreasing mean of book leverage and market leverage. Evidently, Baker and Wurgler (2002) descriptive result at IPO+3, suggest that the net effect of high market-to-book is to lower leverage. However, they use the standard deviation of market-to-book to prove this claim. The increase standard deviation at IPO+3 is

associated with a reducing percentage-point in leverage. These findings are consistent with the description that firms issue equity when market values are high. However, this description is only an initial observation using mean and standard deviation.

5.3 Determinant of capital structure based on the market timing theory

The first objective of the study is to seek whether the determinants are consistent with Baker and Wurgler (2002). Market-to-book is found to be negatively correlated to leverage. This finding supports Baker and Wurgler (2002), Hovakimian (2006), Bougetif and Chichti (2010) and Arosa *et.al* (2014). This means that when the value of a firm increases, the firm's leverage will decrease. This is consistent with the suggestion that firms issue equity when their market value is high. Similarly, profitability also shows a negative correlation with leverage, hence, supporting Baker and Wurgler (2002) and De Bie and De Haan (2007). This negative relationship shows that a profitable firm will tend to lower its leverage. Asset tangibility also shows a negative correlation with leverage, supporting De Bie and De Haan (2007). The high collateral value of a firm will tend to lower the leverage. However, this claim is contradict the findings of Baker and Wurgler (2002) and Kayhan and Titman (2007). They find that asset tangibility has a positive correlation with leverage. Baker and Wurgler (2002) explain that by 1% increase on standard deviation of asset tangibility will increase 0.69% of leverage. This study also finds that firm size has a positive correlation with the leverage. This finding is similar to the result of Rajan and Zingales (1995) and Baker and Wurgler (2002). This can be explained by the fact that larger firms will diversify more on their risk to have stable cash flows and low probability of bankruptcy. It stresses on market-to-book ratio because this variable is the main indicator in predicting market timing behavior. The relationships among the independent variables are found insignificant.

5.4 Applicability of market timing behavior

The second objective of this study is to test the implication of market timing theory in Malaysia. With this regard, the market timing theory is determined through the net equity issues. The results of this study seem to be conflicting with Baker and Wurgler (2002). This study finds mixed result in each IPO date, thus supporting Arosa *et al.* (2014), but contradicts Baker and Wurgler (2002) and Chen *et al.* (2013) when their findings indicate consistent negative coefficients with dependent variables and the three components (especially in net equity issues). However, this study's regression results on net equity issues (Panel B) find that IPO+5 has a significant market-to-book compare to newly retained earnings (Panel C) and growth in long-term debt (Panel D). In support, this result is also explained in the descriptive analysis. This could be one of the sign of market timing in Malaysian manufacturing firms. Further research on market timing applicability should be done in finding consistency with Baker and Wurgler (2002), Hovakimian *et al.* (2004) and Hovakimian (2006).

5.5 General conclusion of the study

Based on the findings, it can be concluded that most of the determinants are in agreement with previous literature on market timing theory. In addition, this study suggests an indicator or sign that Malaysian financing way follow the market timing behavior, yet not conclusive. Table 4.3 shows that profitability is highly significant with the components of newly retained earnings. This finding supports most capital structure decisions in Malaysia (see Pandey & Chotigeat, 2004; Deesomsak *et al.* 2004; Mahmood, 2007; Baharuddin *et al.* 2011).

5.3 Limitations of the Study

The main limitations in this study are the sample size and period. This study uses smaller sample size compared to Baker and Wurgler (2002). Baker and Wurgler (2002), use sample period of 30 years and sample size of thousands of companies. Other than that, accounting variables also are one of the limitations. This is because different firms use different accounting principles. As previous findings, the chosen market is considered as a limitation because most consistent results are only found in developed market. Mixed results are found in emerging market. In relation, different countries would have different economic setup. The simplicity of the model adopted is based on specific underlying assumption which creates more limitations because the financing decision is very subjective in nature. Time constraint is another limitation. This study is completed within four months, thus, the analysis could be done differently if longer time were given. Nonetheless, this research has attempted to follow basic procedure to seek the evidence in Malaysia.

5.4 Recommendations for Future Research

For future research, it is suggested to select larger sample and longer time period to achieve consistent market timing in Malaysia. In Baker and Wurgler (2002), their sample size is roughly more than two thousands firms and the sample period is more than thirty years. In addition, rather than choosing only one industry, further research should incorporate all firms that are listed in Bursa Malaysia and selection period should encompass the economic downturn and upturn. This perhaps would lead to different results. This study also suggests examining the calendar effects instead of IPO date. This is because calendar effect would give different perspective to investors whom are optimistic to see the undervalued or overvalued of a firm.

REFERENCES

Alti, A. (2006). How persistent is the impact of market timing on capital structure?. *The Journal of Finance, 61*(4), 1681-1710.

Altı, A., & Sulaeman, J. (2012). When do high stock returns trigger equity issues? *Journal of Financial Economics, 103*(1), 61-87.

Arosa, C. M. V., Richie, N., & Schuhmann, P. W. (2014). The impact of culture on market timing in capital structure choices. *Research in International Business and Finance, 31*, 178-192.

Baharuddin, N. S., Khamis, Z., Mahmood, W. M. W., & Dollah, H. (2011). Determinants of capital structure for listed construction companies in Malaysia. *Journal of Applied Finance and Banking, 1*(2), 115-132.

Baker, M., & Wurgler, J. (2002). Market Timing and Capital Structure. *The Journal of Finance, 57*(1), 1-32.

Bancel, F., & Mittoo, U. R. (2004). Cross-country determinants of capital structure choice: a survey of European firms. *Financial Management*, 103-132.

Bastos, D. D., & Nakamura, W. T. (2009). Determinantes da estrutura de capital das companhias abertas no Brasil, México e Chile no período 2001-2006. *Revista Contabilidade & Finanças, 20*(50), 75-94.

Booth, L., Aivazian, V., Demirguc-Kunt, A., & Maksimovic, V. (2001). Capital structures in developing countries. *The Journal of Finance, 56*(1), 87-130.

Bougatef, K., & Chichti, J. (2010). Equity market timing and capital structure: Evidence from Tunisia and France. *International Journal of Business and Management, 5*(10), 1-15.

Brendea, G. (2012). Testing the Impact of Market Timing on the Romanian Firms' Capital Structure. *Procedia Economics and Finance, 3*, 138-143.

Cassar, G., & Holmes, S. (2003). Capital structure and financing of SMEs: Australian evidence. *Accounting & Finance, 43*(2), 123-147.

Chen, D. H., Chen, C. D., Chen, J., & Huang, Y. F. (2013). Panel data analyses of the pecking order theory and the market timing theory of capital structure in Taiwan. *International Review of Economics & Finance*, *27*, 1-13.

Chen, A. H., & Kim, E. (1979). Theories of corporate debt policy: A synthesis. *The Journal of Finance*, *34*(2), 371-384.

Chen, L., & Zhao, X. (2006). On the relation between the market-to-book ratio, growth opportunity, and leverage ratio. *Finance Research Letters*, *3*(4), 253-266.

Claggett, E. T. (1991). Capital structure: convergent and pecking order evidence. *Review of Financial Economics*, *1*(1), 35.

De Bie, T., & De Haan, L. (2007). Market timing and capital structure: Evidence for Dutch firms. *De Economist*, *155*(2), 183-206.

De Jong, A., Kabir, R., & Nguyen, T. T. (2008). Capital structure around the world: The roles of firm-and country-specific determinants. *Journal of Banking & Finance*, *32*(9), 1954-1969.

Deesomsak, R., Paudyal, K., & Pescetto, G. (2004). The determinants of capital structure: evidence from the Asia Pacific region. *Journal of Multinational Financial Management*, *14*(4-5), 387–405.

Elliott, W. B., Koëter-Kant, J., & Warr, R. S. (2008). Market timing and the debt–equity choice. *Journal of Financial Intermediation*, *17*(2), 175-197.

Fama, E. F., & French, K. R. (2002). Testing trade-off and pecking order predictions about dividends and debt. *Review of financial studies*, *15*(1), 1-33.

Fama, E. F., & French, K. R. (2005). Financing decisions: who issues stock? *Journal of Financial Economics*, *76*(3), 549-582.

Frank, M. Z., & Goyal, V. K. (2004). The effect of market conditions on capital structure adjustment. *Finance Research Letters*, *1*(1), 47-55.

Ghosh, A., Cai, F., & Li, W. (2000). The determinants of capital structure. *American Business Review*, 129-132.

Graham, J. R., & Harvey, C. R. (2001). The theory and practice of corporate finance: Evidence from the field. *Journal of Financial Economics*, *60*(2), 187-243.

Heinkel, R., & Zechner, J. (1990). The Role of Debt and Perferred Stock as a Solution to Adverse Investment Incentives. *Journal of Financial and Quantitative Analysis*, *25*(01), 1-24.

Hofstede, G. (2001). Culture's recent consequences: Using dimension scores in theory and research. *International Journal of Cross Cultural Management*, *1*(1), 11-17.

Hovakimian, A. (2006). Are observed capital structures determined by equity market timing? *Journal of Financial and Quantitative analysis*, *41*(01), 221-243.

Hovakimian, A., Hovakimian, G., & Tehranian, H. (2004). Determinants of target capital structure: The case of dual debt and equity issues. *Journal of Financial Economics*, *71*(3), 517-540.

Hovakimian, A., Opler, T., & Titman, S. (2001). The debt equity choice. *Journal of Financial and Quantitative Analysis*, *36*, 1–24.

Huang, R., & Ritter, J. R. (2005). Testing the market timing theory of capital structure. *Journal of Financial and Quantitative Analysis*, *1*, 221-246.

Hussin, F., & Ching, C. W. (2013). The contribution of economic sectors to economic growth: the cases of Malaysia and China. *International Journal of Academic Research in Economics and Management Sciences*, *2*(2), 147.

Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, *3*(4), 305-360.

Jung, K., Kim, Y. C., & Stulz, R. (1996). Timing, investment opportunities, managerial discretion, and the security issue decision. *Journal of Financial Economics*, *42*(2), 159-186.

Kayhan, A., & Titman, S. (2007). Firms' histories and their capital structures. *Journal of Financial Economics*, *83*(1), 1-32.

Leland, H. E., & Pyle, D. H. (1977). Informational asymmetries, financial structure, and financial intermediation. *The Journal of Finance*, *32*(2), 371-387.

Lemmon, M.L., Zender, J.F., 2004. Debt capacity and tests of capital structure theories. Working paper, University of Utah.

Lerner, J. (1994). Venture capitalists and the decision to go public. *Journal of Financial Economics*, *35*(3), 293-316.

Lewis, C. M., & Tan, Y. (2016). Debt-equity choices, R&D investment and market timing. *Journal of Financial Economics*, *119*(3), 599-610.

Loughran, T., Ritter, J. R., & Rydqvist, K. (1994). Initial public offerings: International insights. *Pacific-Basin Finance Journal*, *2*(2), 165-199.

Mahajan, A., & Tartaroglu, S. (2008). Equity market timing and capital structure: International evidence. *Journal of Banking & Finance*, *32*(5), 754-766.

Mahmood, W. M. W., & Zakaria, R. (2007). Profitability and capital structure of the property and construction sectors in Malaysia. *Pacific Rim Property Research Journal*, *13*(1), 92-105.

Marsh, P. (1982). The choice between equity and debt: An empirical study. *The Journal of Finance*, *37*(1), 121-144.

Miller, M. H. (1977). Debt and taxes. T*he Journal of Finance*, *32*(2), 261-275.

Modigliani, F., & Miller, M. (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., & 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.

Nor, F. M., Haron, R., Ibrahim, K., Ibrahim, I., & Alias, N. (2011). Determinants of target capital structure : Evidence on South East Asia countries, *6*(3), 39–61.

Pagano, M., Panetta, F., & Zingales, L. (1998). Why do companies go public? An empirical analysis. *The Journal of Finance*, *53*(1), 27-64.

Pandey, I. M., & Chotigeat, T. (2004). Theories of capital structure: Evidence from an emerging market. *Studies in Economics and Finance*, *22*(2), 1-19.

Rajan R, Zingales L. (1995). What do we know about capital structure? Some evidence from international data. *Journal of Finance, 50*, 1421–60.

Ross, S. A. (1977). The determination of financial structure: the incentive-signalling approach. *The Bell Journal of Economics*, 23-40.

San, O. T., & Heng, T. B. (2011). Capital structure and corporate performance of Malaysian construction sector. *International Journal of Humanities and Social Science, 1*(2), 28-36.

Stiglitz, J. (1969). A Re-Examination of the Modigliani-Miller Theorem. *The American Economic Review, 59*(5), 784-793.

Stulz, R. (1990). Managerial discretion and optimal financing policies. *Journal of Financial Economics, 26*(1), 3-27.

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

Veen, R. (2016). *Capital structure changes of Amsterdam listed firms during the 2008 financial crisis: market-timing or trade-off behavior?* (Master's thesis, University of Twente).

Welch, I. (2004). Capital Structure and Stock Returns. *Journal of Political Economy*, *112*(1), 106–132.