DEBT MATURITY STRUCTURE OF LOW AND HIGH TOBIN'S Q FIRMS

By

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Thesis Submitted to
Othman Yeop Abdullah Graduate School of Business,
Universiti Utara Malaysia,
in Fulfillment of the Requirement for the Degree of
Master of Science (Finance)

Othman Yeop Abdullah
Graduate School of Business

Universiti Utara Malaysia

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ABSTRAK

Kajian ini mengkaji kesan perkembangan yang mempengaruhi struktur kematangan hutang daripada syarikat-syarikat Malaysia. Hasil kajian menunjukkan bahawa tiada perbezaan antara pembiayaan hutang jangka pendek dan jangka panjang di firma yang mempunyai perkembangan dengan Tobin's Q yang tinggi. Walau bagaimanapun, hubungan antara perkembangan dan kematangan hutang adalah negatif bagi firma-firma yang mempunyai Tobin's Q yang rendah. Oleh itu, ini menunjukkan bahawa firma yang berkembang dengan Tobin's Q tinggi tidak menggunakan struktur kematangan hutang untuk mengurangkan kos agensi hutang (agency cost of debt) yang disebabkan oleh masalah terkurang pelaburan (underinvestment problem), manakala firma-firma yang berkembang dengan Tobin's Q rendah mengekalkan tahap yang lebih tinggi untuk hutang jangka pendek, tetapi tahap yang lebih rendah untuk hutang jangka panjang bagi mengurangkan kos agensi ekuiti (agency cost of equity) disebabkan oleh masalah pelaburan yang berlebihan (overinvestment problem).

Katakunci: Hutang Matang ; Perkembangan ; Tobin's Q; Kos agensi

ABSTRACT

This study examines the effects of growth in influencing debt maturity structure of Malaysian companies. The result shows that growth firms with high Tobin's Q are indifferent between short-term and long-term debt financing. However, the relationship between growth and debt maturity is negatively related for firms with low Tobin's Q. Therefore, this implies that growth firms with high Tobin's Q do not make use of debt maturity structure to mitigate the agency cost of debt caused by underinvestment problem, while growth firms with low Tobin's Q maintain higher levels of short-term debt, but lower levels of long-term debt to mitigate agency cost of equity caused by overinvestment problem.

Keywords: Debt Maturity; Growth; Tobin's Q; Agency cost

ACKNOWLEDGEMENT

I would like to take this opportunity to express my sincere appreciation to my supervisor, Dr. Khaw Lee Hwei who has provided me the guidance, support, and encouragement to complete this research.

On top of that, I am grateful to Freddy Teo who has helped me with the data arrangement using excel, which makes data compiling more efficient. It will also allow me to share his knowledge with other research students.

Last but not least, I am thankful for the encouragement and support given by my beloved family and friends.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

Bottom30	: Bottom 30% of the Sample Companies
EBIT	: Earnings before Interest and Taxes
et al.	: and Others
GICS	: Global Industry Classification Standard
Growth	: Growth Opportunities
H1	: First Hypothesis
H2	: Second Hypothesis
i.e.	: that is
NPV	: Net Present Value
R&D	: Research and Development
Risk	: Business Risk
Size	: Firm Size
Top30	: Top 30% of the Sample Companies
US	: United States of America

1. INTRODUCTION

This chapter discusses the intention and objectives of this study. They are divided into few sections as below:

1.1 Background of Study

1.2 Problem Statement

1.3 Significance of Study

1.4 Scope of Study

1.5 Research Objectives

1.1. Background of Study

Capital structure is the source of fund derived from a mixture of equity and debt used by firms to finance its operations and growth. The optimal capital structure contains the right debt and equity mix where company maximizes the firm value and minimizes its cost of capital.

Debt is a borrowing of fund from external source with the promise of returning the principal plus a pre-agreed interest rate. The benefits of debt financing include (1) shareholders is able to maintain their ownership and control of the company, (2) gain on business income tax deduction as business loan and interest payments on business loan is categorized as business expenses, and (3) a lower rate of payment on interest rate as compared to government taxes. On the other hand, one of the disadvantages

of debt financing is the repayment of business loan on a timely basis. In the event of liquidation, the lenders have the claim to repayment before the investors. On top of that, debt affects a firm's credit rating because the firm is risker when more loans are borrowed due to the doubt of its repayment ability, and therefore its company credit rating will be lowered. Ensuring the business is able to generate sufficient cash flow to pay its loan before the loan is granted by the banks, corporate or government, and in some cases by the public is another disadvantage of debt.

If a firm decides to finance its operations and growth opportunities with debt, it has to decide on the types of debt (which include term loan, syndicated loan, and bond issuance, amongst others), debt maturity (short-term versus long-term debt) and the sources of debt borrowing because these decisions will affect the firm's value. The focus of this study is on the debt maturity structure. Debt maturity is the date where the full repayment (loan principal plus all the interest payments) is paid to the lenders. Its maturity can be categorized as short-term (debt with maturity less than a year), and long-term (debt with maturity more than a year). Different debt maturities have different advantages and shortcomings. Short-term debt is employed by companies to mitigate the agency costs of debt caused by underinvestment problem (Myers 1977; Barnea, Haugen, and Senbet, 1980) and to signal to the market on strong company's financial position (Flannery, 1986). However, short-term debt contains interest rate, liquidity and refinancing risks. Not only will long-term debt resolve the three risks involved in short-term debt, it will also increase the company's value as taxable income decreases due to the present value of interest payment on the debt (Brick and Ravid, 1985; Kane, Marcus, and McDonald, 1985; Stohs and Mauer, 1996; Pour and Lasfer, 2013). But long-term debt is costly due to

high interest charges, and there are restrictive clauses and covenants which will be bound for years.

Every firm employs different debt financing policy. Some firms prefer short-term debt, while some prefer long-term debt, and others prefer a hybrid of short- and long-term debt. These preferences depend on the firm-specific characteristics such as the degree of firm growth, business risk, firm size, tangibility, profitability, and the income tax of the firm.

1.2. Problem Statement

Empirical studies argue that long-term debt is employed by company to control its agency cost of equity caused by overinvestment problem (Hart and Moore, 1998; Stulz, 1990).

However, Berger, Espinosa-vega, Frame, and Miller (2005) argue that firms often borrow on a short-term basis although their projects are of long-term to manage the risks faced by the company. Flannery (1986) and Diamond (1991) suggest that companies choose difference debt maturity to reduce their liquidity risks and to reduce their financing costs. Companies may choose short-term debt for other reasons as well. Firms may use short-term debt as a signalling purpose on their ability to source and rollover short-term debt although the costs of short-term debt is higher than long-term debt (Diamond, 1991, 1993). Firms will also choose short-

term debt to curb its agency cost of debt caused by underinvestment problems through frequent monitoring (Myers, 1977).

Therefore, choosing the right mix of debt maturity can contribute to maximising shareholders' value. Previous studies on debt maturity structure have been focusing on developed countries such as the US. Limited studies are found to study on the implication of debt maturity structure with evidence from developing markets, such as Malaysia. Deesomsak, Paudyal, and Pescetto (2009) examine the firm-specific factors that influence the debt maturity structure of companies in the Asia Pacific region from 1993 to 2001. Contrasting results have been found regarding the firm-specific factors that affect the debt maturity decision of a firm even within the same country. Deesomsak et al. (2009) find that Malaysian firms prefer bank borrowing and the firms do not use debt maturity as an instrument to reduce the underinvestment problem because of close relationship with their banks and highly concentrated ownership.

Nonetheless, their study disregards the heterogeneous feature of the firms. This study recognizes the firms by their corporate values, which is measured by Tobin's Q. Tobin's Q is a measure of company's performance by measuring the company's replacement cost. The sample firms is ranked and categorized as Top30 and Bottom30 firms. The highest 30% of the sample firms in terms of Tobin's Q is categorized as Top30 firms while the lowest 30% is categorized as Bottom30. High Tobin's Q firms are overvalued firms, while the opposite applies for low Tobin's Q firms. When a firm is overvalued, the company should invest more because its

current worth is high and it can negotiate for a better debt terms such as lower interest rates.

1.3. Significance of Study

This research provides empirical evidence on the factors that affect debt maturity structure of Malaysian companies by their corporate values. The findings of this study can assist corporate managers in their strategic financial planning, particularly on those related to debt maturity structure.

Furthermore, the findings in relation to the effect of growth on debt maturity structure are able to provide insights to growth firms. This will assist corporate managers, bankers, and external consultants to determine if short- or long-term debt will better fit the company's current growth in financing the firm's projects, investments or capital expenditures.

The findings of this study can help regulators in creating more conducive policies and to improve current regulations in the future that will assist companies in Malaysia to grow which will help to stimulate the Malaysian economy through chain reaction.

On top of that, this study adds to the pool of knowledge for academicians and researchers on the debt maturity structure of Malaysian companies. This will help them in understanding the debt maturity structure of Malaysian firms with high and low Tobin's Q ratio for their further research.

1.4. Scope of Study

This research examines the factors that influence the debt maturity structure of high and low Tobin's Q firms in Malaysia. The study examines the effects of growth opportunities, business risk, size, tangibility, profitability, and tax, on debt maturity structure of Malaysia public listed firms. 774 non-financial companies, with 8,858 firm-year observations are identified from Bursa Malaysia. The sample period covers from the year 1995 to 2013.

1.5. Research Objectives

The objectives of this research are detailed as follows:

1) To examine the effect of growth on debt maturity structure of firms with high Tobin's Q ratio.
2) To examine the effect of growth on debt maturity structure of firms with low Tobin's Q ratio.

3) To examine the relationship between the explanatory variables (business risk, size, tangibility, profitability, and tax) and debt maturity structure of Malaysian companies.

2. LITERATURE REVIEW

This chapter discusses the background of this study and review the literature in order to develop hypotheses for this research. They are divided into few sections as below:

2.1 Theoretical Review

2.2 Empirical Review

2.3 Hypotheses Development

2.1. Theoretical Review

After the Great Depression and throughout the 1930s and 1940s, debt was viewed as a negative choice of corporate financing instrument, though, at times, it is a necessary financing tool. But, gradually the negativity has softened. Financial scholars, as well as practitioners have started to broaden their view on debt financing following the publication of Modigliani and Miller (1958)'s capital structure *"Irrelevance Theory"*. The theory claims that under a set of perfect market assumptions, a firm value is not affected by how the firm is financed. Later in 1963, Modigliani and Miller uplifted their tax assumption. It is suggested that debt financing increases firm value, given the benefit of tax deductibility. Though Modigliani and Miller's theorem on capital structure is developed on a set of perfect market assumptions, it sets the direction for in-depth research on capital structure.

Referring to Modigliani and Miller's capital structure argument, Kraus and Litzenberger (1973) argue that *"The taxation of corporate profits and the existence of bankruptcy penalties are market imperfections that are central to a positive theory*

of the effect of capital structure on valuation." Therefore, an increase in corporate debt, increases tax advantage and firm's bankruptcy costs at the same time. This is because interest payments on debt are tax deductible, so an increase in corporate debt increases the firm's after-tax earnings due to the decrease of its income tax liability. On the other hand, the firm has a legal obligation to repay its debt at a fixed period of time. It will be forced to liquidate if it cannot meet its obligation and the liquidation is associated with bankruptcy costs. For these reasons, trade off theory proposes that an increase in debt trades off between the benefits of tax rebate and the cost of leverage to achieve an optimal capital structure (Hirshleifer, 1966).

Pecking order theory and trade off theory are often considered as the rival, but not conflicting theories. Pecking order theory argues that firms follow a particular order in financing their business due to information asymmetric, with the company's retained earnings being the most preferred choice of financing, followed by debt financing, and lastly is the issuance of new equities (Myers, 1984; Myers and Majluf, 1984). Asymmetric information occurs when one party has superior information than the other. Managers of a firm typically have greater information of the company than lenders or investors. Subsequently, the company will source for debt to finance its investments opportunities rather than issuing equities if retained earnings are not sufficient to avoid selling undervalued securities. Equity financing will be used as last resort for companies to fund its investments opportunities because it is the most expensive mode of financing as compared to internal funds and debt financing. Not only it will dilute the holdings of its shareholders, it will become more expensive as asymmetric information increases between insiders and outsiders. Therefore, stock

offering leads to a decline in firm's share price when management has superior information over the investors (Myers and Majluf, 1984).

Another frequently cited theory in capital structure is the agency costs theory by Jensen and Meckling (1976). This theory argues that costs are incurred on companies due to principal-agent conflicting objectives and there are two types of agency costs namely, agency cost of equity and agency cost of debt. Agency cost of equity is the conflict of interest between shareholders and managers. Shareholders' objective is to maximize their wealth, and therefore, maximizing the value of the company. On the other hand, managers' objectives is to expand the company's operations to get more perquisites. Thus, this may cause overinvestment problem whereby managers will invest in any projects, including negative net present value (NPV) projects that can give the managers the additional perks they are seeking.

Alternatively, agency cost of debt is the conflict of interest between shareholders and debtholders. Shareholders seek for higher rate of return, whereas debtholders seek to receive their loan repayment at a constant pace. The differences in objectives between the debtholders and shareholders lead to the problems of asset substitution and/or risk-shifting problems (Jensen and Meckling, 1976). Therefore, debtholders prefer low-risk investment projects with positive net present value because these projects generate steady income although the returns are lower than risky projects. On the contrary, equityholders, specifically those of high growth firms seek for higher returns, thus are more likely to drive the firms to invest in more risky assets. This causes underinvestment problem that forgo safer investments opportunities even if they are profitable.

In brief, agents do not always act in the best interests of the principals due to conflicting interest. Nonetheless, these agency costs can be mitigated by utilizing debt in the capital structure. Having debt in a company's capital structure is able to reduce equityholders-managers agency cost of overinvestment (Bolton and Scharfstein, 1990; Jensen, 1986), but having lower leverage in a company's capital structure, or shorten the debt maturity is able to reduce shareholders-debtholders agency cost of underinvestment (Myers, 1977). Both agency cost of overinvestment and underinvestment problems can be mitigated through monitoring the investment choices of the firms by the investors and conditions can be set for firms not to accept any negative NPV projects to prevent overinvestment problem while conditions for firms to take up certain safe and profitable projects when firms are rolling over their debt to prevent underinvestment problem.

2.2. Empirical Review

Recently, studies on capital structure have placed more emphasis on the various attributes of debt, such as debt maturity (short term debt versus long term debt) instead of the conventional debt-equity choice (Johnson, 2003). Corporate debt maturity is found to be influenced by country-specific, industry-specific and/or firm-specific factors. Demirguc-Kunt and Maksimovic (1999) carry out a cross-country research and find that corporate debt maturity structure is different between developed and developing countries. Firms tend to have more long-term debt regardless of firm size in developed countries whereas large companies have more long-term debt as compared to smaller companies in developing countries.

On top of that, Antoniou, Guney, and Paudyal (2006)'s research on three major European countries (United Kingdom, France, and Germany) argue that debt maturity decision of a firm can also be affected by the environment and tradition in which the firm operates. For example, different results are found between tax proxy and debt maturity across the three European countries. Insignificant relationship is found between tax and debt maturity structure of French and British firms, but the relationship is significantly positive among German firms due to differences in the taxation systems among these countries. Hence, Antoniou et al. (2006) claim that variation in debt maturity can be country dependent due to differences in the legal systems, financial systems, government policies as well as macroeconomic factors such as inflation rate and growth rate.

In addition, Barclay and Smith (1995) show that industry-specific factors do affect a company's debt maturity structure. Higher proportion of long-term debt should be utilised when there is regulation to decrease managerial discretion on future investment decisions. This is because long-term debt increases the value of the company by paying less tax. In their study, they find that four major industries, which include airlines, railroads, trucking, and telecommunications use more short-term debt when there is deregulation to decrease managerial influence which shows that industry-specific factors can affect a company's investment policy.

More importantly, previous empirical studies have found that corporate debt maturity is significantly determined by firm-specific characteristics such as growth, business risk, firm size, tangibility, profitability, asset maturity, and tax proxy, to name a few. (Barclay and Smith, 1995; Guedes and Opler, 1996; Stohs and Mauer,

1996; Demirguc-Kunt and Maksimovic, 1999; Antoniou et al., 2006; Cai, Fairchild, and Guney, 2008; Brockman, Martin, and Unlu, 2010; Stephan, Talavera, and Tsapin, 2011).

Shortening debt maturity can attenuates debt overhang, which causes underinvestment problem because new projects can gain from debt renegotiating between lenders and borrowers when refinancing occurs before investment options expire (Myers, 1977). Myers argues that underinvestment problems are more rigorous for greater growth companies. Thus, debtholders have more power as compared to the firms that has a smaller debt proportion in their capital structure.

Empirical results generated from the US market have provided inconsistent evidence. US firms are found to shorten their debt in their debt structure to reduce agency cost of debt due to underinvesment problem (Barclay and Smith, 1995; Hutchinson, 1995; Guedes and Opler, 1996; Dennis, Nandy, and Sharpe, 2000; Bah and Dumontier, 2001). On the other hand, Scherr and Hulburt (2001) report little evidence between growth opportunities and debt maturity structure when the analyses control for firm size. Stohs and Mauer (1996), on the contrary, find a positive relation between debt maturity and firms' growth opportunities after controlling for leverage where high growth firm has little incentive to minimize its agency cost if they have low leverage. Johnson (2003) further argues that shortening debt maturity is a trade off between the cost of underinvestment problems against the cost of increased liquidity risk. This is because shortening debt maturity increases and decreases the company's optimal leverage at the same time as it reduces the cost of underinvestment problem and increases the liquidity risk simultaneously. However, firms will choose lower

leverage in both situation to overcome the negative effect (which reduces the firm's optimal leverage) of debt maturity.

In other developed, but non-US markets, evidence is also showing mixed results. Bah and Dumontier (2001) use research and development (R & D)-intensive firms as a measurement for growth. They find that European countries use short-term debt to curb underinvestment risk, which is consistent with Ozkan (2000). He reports inverse relationship between debt maturity and growth option, evidenced from companies in the United Kingdom. On the other hand, Antoniou et al. (2006) who find that the growth opportunities is positively related to debt maturity structure in the UK, contradicts with the contracting-cost hypothesis and the asymmetric information theory where greater asymmetric information leads to higher agency cost. However, they find an insignificant relationship for this variable among companies in France and Germany, implying that these countries place less importance on the company's optimal investment policy.

Nevertheless, limited studies are found to seek evidence on debt maturity structure from the emerging market. An example is a study by Deesomsak et al. (2009). They study on a total of 6,192 firm-year observations of the companies in the Asia Pacific region from 1993-2001 which include 1,726 firm-year observations for Thailand, 2,493 firm-year observations for Malaysia, 1,164 firm-year observations for Singapore and 809 firm-year observations for Australia. No evidence is found to explain the effect of growth opportunity on debt maturity. Deesomsak, et al. (2009) also find that companies in this region, especially Malaysia and Singapore, do not

use debt maturity as an instrument to reduce the underinvestment problem because of close relationship with their banks and highly concentrated ownership.

2.3. Hypotheses Development

Company's management uses debt based on the private information of the company's future growth (Lang, Ofek, and Stulz, 1996). High growth firms are companies that outperform the others in the economy in terms of sales and employment growth. Their reinvestment opportunities also tend to be profitable. But, having many investment opportunities, high growth firms are constrained financially because their financing needs exceed their internal resources (Demirguc-Kunt and Maksimovic, 1998). Hence, there are too many projects for the company to invest in that it has to give up some of the investment opportunities which causes the underinvestment problem due to financial constrained. At this point, shareholders may give up the investment opportunities that increase the value of the company and only choose those that benefit themselves (i.e. risky projects to get higher rate of return), which is consistent with the agency cost of debt theory. Therefore, this agency problem between equityholders and debtholders is expected to be exacerbated in companies with higher growth.

Moreover, existing studies suggest that high-growth firms tend to use more short term debt to reduce underinvestment problem because of the frequent monitoring by short term debt, each time the debt is rolled over (Myers 1977; Barclay and Smith, 1995; Hutchinson, 1995; Guedes and Opler, 1996; Dennis et al., 2000; Ozkan, 2000). In addition to mitigating underinvestment problem, high-growth firms are more

likely to use short-term debt to preserve debt capacity in the future. Consistently, trade-off theory also argues that growth firms should use less long-term debt because growth opportunity is intangible assets that cannot be used as collateral for debt financing or in the event of default. Furthermore, Lang et al. (1996) find that firms with valuable investment known to outside investors, measured by high Tobin's Q, are less affected by debt maturity choice. On the contrary, the relationship between leverage and growth is found to be significantly negative for firms with low Tobin's Q. Lang et al. (1996) relates the findings to the liquidity theory, whereby debt reduces a company's growth by a greater degree for firms which are of high-growth. This is due to greater asymmetrics information for high-growth firms which causes debt financing to be more expensive. Therefore, less debt will be used by high-growth companies (Smith and Watts, 1992).

Hypothesis 1(a): High-growth firm with high Tobin's Q is indifferent on firm's debt maturity choice.

Though debt decreases the value of high-growth firms, it increases the value of low-growth firms (Ahn, Denis, & Denis, 2006). This justify why low-growth firms with low Tobin's Q tend to employ more long-term debt. But, debt maturity choice does not affect high-growth firms with high Tobin's Q. Low-growth firms are companies that are growing at a slower pace in terms of sales and employment as compared to the others in the economy. Slower pace of growth leads to fewer investment opportunities for the companies. Low-growth firms are usually large companies that are already at a matured stage.

Agency problem between equityholders and manager is expected to worsen with companies that have lower growth because of lower investment opportunities. Although firms with few growth options may be able to finance their investments through internal financing according to pecking order theory, these firms will prefer long-term debt to finance the organization's investments as it can control bad investment decisions made by the management such as the overinvestment problem (Hart and Moore, 1998; Stulz, 1990).

In addition to controlling managerial investment decisions, companies with few growth options prefer long-term debt as a means of debt financing because it is cheaper than short-term debt (Myers, 1977; Barclay and Smith, 1995). Barclay and Smith further defends that the rolling of short-term debt is more expensive than long-term debt due to four reasons which include higher flotation costs, more management time is used to deal with frequent debt issues, refinancing risks, and liquidity risks. Stephan et al. (2011) also agree that firms uses long-term debt to minimize the reinvestment risks. All the uncertainties are costs to organizations which increase business risk. Therefore, organizations with few growth options will prefer long-term debt because it is less risky and cheaper than short-term debt.

Lang et al. (1996) also suggest that firms debt maturity choice is negatively related to growth for companies with low Tobin's Q value. This means that low-growth firms use more long-term debt because the company's corporate value is lack of recognition by the market, the company is poorly managed, among other reasons, increases the cost of debt for these firms because the debt borrowed does not give the lender the confidence that the debt will be used profitably.

Hypothesis 1(b): High-growth firms with low Tobin's Q is more likely to select short-term debt

Risk is another important variable that affect a company's investment policy. Companies face many risks including, but not limited to business risk, financial risk, liquidity risk, and country-specific risk. Though these risks may affect companies' debt maturity structure the similar way, not many studies are conducted to test on the relationship between business risk and debt maturity. Most of the studies done on business risk evaluate the effect on capital structure as in Castanias (1983) that find an inverse relationship between business risk and optimal debt level under tax shields-bankruptcy costs hypothesis.

Evidence shows mixed results. Guedes and Opler (1996) find that low-risk firms typically has both short-term debt and long-term debt while Stohs and Mauer (1996) argue that healthy firms prefer long-term debt financing. Empirical studies agree that healthy and successful firm prefer long-term debt financing as it increases the company's value more than the average debt maturity because more interest payment from long-term debt translates into larger reduction in tax payment. Not only higher business risk translates into lower firm value, the financial distress costs or bankruptcy cost will also be higher. Thus, only lower risk firms with strong financial position can survive high business risk with the elevated bankruptcy cost. Guedes and Opler suggest that healthy firms will also have short-term debt in their capital structure because the risk of costly premature liquidation is not as risky for these

firms as compared to firms with higher risk. Therefore, healthy firms (low risk firms) is said to use more long term debt to increase the value of the company.

Hypothesis 2: Firms with low business risk are more likely to use long-term debt

3. DATA AND METHODOLOGY

This chapter discusses on data filtering processes which comprise:

3.1 Sample Selection

3.2 Variables Selection

3.3 Methodology

3.1. Sample Selection

Selected sample comprises Malaysian companies listed on the Main board and ACE board of Bursa stock exchange. The companies are categorized by the sectors, based on Global Industry Classification Standard (GICS) provided by the Bloomberg database. 144 companies in the financial industry are excluded from the sample selection due to the differences in the financial structure and regulation as compared to other industries (Rajan and Zingalis, 1995). Final sample is further reduced to 774 firms, with 8,858 firm-year observations for the fiscal year from 1995 to 2013. This sample is obtained after excluding incomplete or unavailable firm-specific data.

Table 3.1 shows that 30.23% of the sample firms comprise of industrial firms, followed by consumer discretionary (16.54%) and materials (16.41%). Only 1.29% and 1.43% of the sample firms are involved in the telecommunication services and utilities industries, respectively.

Table 3.1

Sample Distribution by GICS Sectors

GICS Sectors	No. of Firms	%	Observations	%
Consumer Discretionary	128	16.54	1542	17.41
Consumer Staples	93	12.02	1194	13.48
Energy	24	3.10	222	2.51
Health Care	22	2.84	195	2.20
Industrials	234	30.23	2740	30.93
Information Technology	103	13.31	879	9.92
Materials	127	16.41	1570	17.72
Telecommunication Services	10	1.29	89	1.00
Utilities	11	1.42	167	1.89
Others	22	2.84	260	2.94
Total in the selected sample data	774	100.00	8858	100.00

In order to examine Hypotheses 1(a) and 1(b), the sample is ranked by the firm's average Tobin's Q over the observation period to classify the firms into Top30 and Bottom30 accordingly. Tobin's Q is a measure of corporate value (Doukas, 1995; McConnell and Servaes, 1995; Lang et al., 1996). The concept is based on the theory that the market value of a firm should approximately equal to the cost of replacing the company's assets. Therefore, it is computed based on the market value of company (market capitalization + liabilities + preferred equity + minority interest or non-controlling interest) scaled by the total asset value or the replacement value of the company's total assets. In general, poorly managed, or an organization with low corporate value has an average Q value less than 1. Conversely, a well-managed, or a high corporate value company will have an average Q value greater than unity.

For robustness purpose, the sample is also ranked with reference to the firm's Tobin's Q by firm-year observation. Firm-year observation with Tobin's Q that falls into the top 30% of the total observations is included in the Top30 subsample and the opposite for Bottom30 subsample. In addition, the firms are subsampled by Tobin's Q less than 1 and Tobin's Q more than 1 to gauge the robustness of the findings.

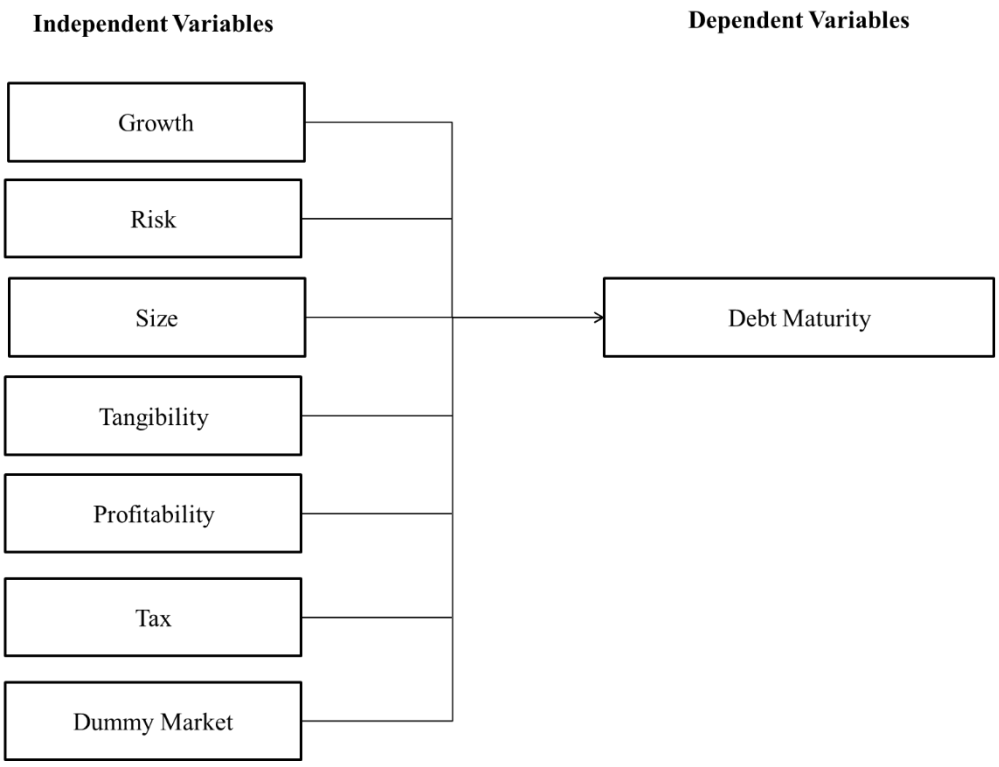
3.2. Variables Selection

The identified variables are shown in Figure 3.1 that presents the research framework of this study. Discussion of each identified variable is presented thereafter.

The dependent variable, debt maturity, is measured by short-term debt and long term debt, scaled by total debt (total of short-term debt and long-term debt) (Barclay and Smith, 1995; Antoniou et al., 2006). Debt with maturity less than a year is considered as short-term debt, whereas debt with maturity that is not due within a year is considered as long-term debt. This study considers seven (7) explanatory variables (refer Figure 3.1), identified from existing literature to examine firms' debt maturity structure.

Figure 3.1

Research Framework



Company's growth or growth opportunities (*Growth*) is measured by market-to-book ratio (Lang et al., 1996). Market-to-book ratio is also termed as price-to-book ratio uses the firm's last share price scaled by book value per share. Book value per share is derived from total book value divided by the number of outstanding shares. Existing studies argue that higher market-to-book ratio signifies higher agency costs of underinvestment, debt overhang, asset substitution and risk-shifting problems. Thus, to mitigate these problems, a company tend to have higher level of short-term debt, but lower level of long term debt (Myers, 1977; Barnea, Haugen, and Senbet, 1980; Guedes and Opler, 1996; Johnson, 2003).

Moreover, firms with higher market-to-book tend to use less long-term debt in financing their investment projects (Smith and Watts, 1992; Jung et al., 1996; Lang et al., 1996; Ahn et al., 2006) to reduce its bankruptcy risk because debt is an expensive choice of financing due to higher asymmetric information. Therefore, with less debt in a company, the firm will not use debt maturity structure as a means to mitigate its problems because it will not work. However, low market-to-book ratio firm will employ debt to mitigate its higher agency cost between equityholders and managers due to overinvestment problem. Long-term debt maturity will be chosen because it provides more value for the company due to lower overall costs and easy access gained from economies of scale (Titman and Wessels, 1988).

Business risk (*Risk)* is measured by volatility in earnings where it is the standard deviation of earnings before interest and taxes (EBIT) of three years scaled by total sales. Unlike the empirical studies that use book value of assets to compute volatility in earnings (Stohs and Mauer, 1996; Cai, et al., 2008), total sales is used in this research paper to reflect the market value (true value or current value) of firms. Earnings volatility refers to the fluctuation of sales amount over time reflects the stability and/or uncertainty of the firms' earnings. A lower value computed means that the company's sales can change over a smaller range of values over the years which makes the business less risky as compared to a higher volatility firm where company's earnings can vary dramatically throughout the years. A lower volatility in earnings makes it easier for management to predict the company's sales. Its likeliness to cause financial distress to the firm is lesser because lower volatility eases the planning for the company's future which allows the firm to plan for sufficient cash flow to honour its debt obligation.

Trade-off theory suggests that firms of lower risks should increase their risks in order to increase the value of the firm, while more risky firms should do the opposite (decrease their risks) by normalizing their volatility in earnings to reduce the probability of bankruptcy. Therefore, less risky firms increase their risk by increasing their debt capacity. Empirical studies find that the debt that lower risk firms tend to use is of long-term to finance their investment (Guedes and Opler, 1996; Stohs and Mauer, 1996). This is because companies will benefit from the tax reduction.

Control variables such as firm size, tangibility, profitability, and tax proxy are also included to account for the effects of trade-off theory and pecking order hypothesis on debt maturity. These control variables are the commonly used firm-specific variables identified from the capital structure literature. Firm size (*Size)* is measured by the natural logarithm of total assets. Natural logarithm of total assets is taken to smooth the distribution of the ratio. The size of a company is claimed to be positively related to debt maturity (Titman and Wessels, 1988; Stohs and Mauer, 1996). High-growth firms are usually small firms because they have a lot of room to grow. Higher asymmetric information is also expected in smaller firms because the company's information does not need to be made available publicly. In turn, cost of debt financing for small companies are higher than big companies (Smith, 1977). This suggests that small firms which may be more leveraged than large firms prefer short-term debt financing due to the lower financing costs. This is consistent with Titman and Wessels (1988) finding where smaller size firms are found to choose short-term debt financing because of the lower interest rate of short-term debt.

On the other hand, larger size firms are more likely to opt for higher levels of long-term debt instead of short-term debt. As firm size is also a proxy of financial distress and bankruptcy cost, larger size firms which tend to be more diversified are considered to have lower bankruptcy cost makes it easier for these companies to obtain long-term external financing (Chittenden, Hall, & Hutchison, 1996). Larger size firms are also claimed to prefer long-term debt financing due to lower overall costs, given the advantage from economic of scale.

Tangible assets (*Tangibility)* are physical form of assets (fixed and current assets) that can be used as collateral against loans. It is found to have significantly positive relationship with debt maturity (Kirch and Terra, 2012; Fan, Titman, and Twite, 2012). A company with higher tangibility has lower bankruptcy costs because more assets can be used as collateral against loans, which reduces the bankruptcy costs as compared to a company with lower tangible assets. Firms with higher tangible assets will borrow more long-term debt to take advantage of tax deductibility benefit. In the emerging markets, tangible assets play an important role because collateralized assets will determine if a company has the capacity to borrow longer-term debts (Kirch and Terra, 2012). Tangibility is measured by net fixed assets scaled by total book assets.

Profitability (*Profitability)* is measured by return on assets and empirical studies found contrasting results on this variable. According to asymmetric information's argument, company signals the market by issuing short-term debt if it has private information on the company's future profitability (Diamond, 1991, 1993). Profitable firms with future profitable growth prospect will opt for short-term debt to signal to

the market that the firm has the ability to rollover debt and hope that favourable terms can be negotiated during the rollover. This inverse relationship is also supported by Stephan et al. (2011) where profitable firms tend to have larger debt turnover. However, choosing short-term debt trades off between liquidity risks and lower interest payment of rollover debt due to improving company's profitability. Deesomsak et al. (2009) on the other hand found that profitability and debt maturity is significantly positively related only in the emerging countries. This does not support Diamond's signalling theory due to tax avoidance which is argued to be more attractive for companies with high profitability (Brick and Ravid, 1985).

Tax proxy (*Tax*) uses effective tax rate that is income tax scaled by pre-tax income, as the measurement. Tax hypothesis suggests that leverage (long-term debt) increases the value of the firm by reducing the taxable income. Brick and Ravid (1985), Kane et al. (1985), Stohs and Mauer (1996) and Pour and Lasfer (2013) argue that when firm uses long-term debt, company's savings gain from the present value tax shield is accelerated from the increasing debt payment proportion allocated to long-term debt on an upward sloping yield curve in a healthy economy.

Dummy Market is included in the variable selection to control for the listing of companies. It is a dummy equals to one for companies listed on the Main board of Bursa Malaysia and zero for firms listed on the Ace board of Bursa Malaysia.

3.3. Methodology

Regression is a statistical model that predicts the response of the dependent variable based on the values of the explanatory variables.

To begin with, this study uses pooled cross-sectional regression with robust standard error model to examine the hypotheses. Nonetheless, there could be potential bias in pooled cross-sectional regression due to correlation of the error terms across years. Since the dataset of this study have both cross sectional and time-series dimensions, it is more robust to employ panel data regression (Akhtar, 2005). The panel data is unbalanced because some firm-year observations are not available.

The regression equation for this study is written as:

$$DebtMaturity_{it} = \beta_0 + \beta_1 Growth_{it} + \beta_2 Risk_{it} + \beta_3 Size_{it} + \beta_4 Tangibility_{it} + \beta_5 Profitability_{it} + \beta_6 Tax_{it} + \beta_7 Dummy\ Market_{it} + \varepsilon_{it}$$

Table 3.2

Variables Descriptions and the Expected Signs

Variables	Description	Expected Sign	
		Long-term debt model	Short-term debt model
Debt Maturity	Both short-term debt and long term debt are individually scaled by total debt.		
Growth	Market-to-book value	–	+
Risk	Standard deviation of earnings before interest and taxes (EBIT) of three years scaled by total sales	–	–
Size	Natural logarithm of total assets	+	–
Tangibility	Net fixed assets scaled by total book assets	+	–
Profitability	Net income scaled by total assets	–	+
Tax	Income tax scaled by pre-tax income	+	–
Dummy Market	A dummy equals to one if the company is listed on the Main board of Bursa Malaysia and zero if the company is listed on ACE.	–	+

4. EMPIRICAL RESULTS AND DISCUSSION

This chapter discusses the results generated from the tests on factors that influence debt maturity structures of companies using Stata and they comprise:

4.1 Sample Description

4.2 Correlation Analysis

4.3 Pooled Cross-sectional Regression

4.4 Fixed Effects Panel Data Regression

4.5 Comparison between High Tobin's Q and Low Tobin's Q Firms

4.1. Sample Description

Table 4.1 presents the summary statistics of the observed variables for the selected sample. The sample firms are found to use more short-term term, but less long-term debt, which is consistent with previous studies (Barclay and Smith, 1995 and Antoniou et al., 2006). On average, the firms maintain 56.76% of short-term debt and 33.21% of long-term debt, scaled by total debt, in their debt structure. The remaining 10.03% of the sample are all-equity observations, meaning that the total debt equals to zero. The main findings remain statistically significant even when the all-equity observations are excluded from the sample.

The average for Tobin's Q and growth is 1.227 and 1.853, respectively, suggesting that on average the sample firms have good growth opportunities. A separate set of regression has been carried out using an alternative sample to analyse the accuracy of the growth data because there is a huge difference between the minimum and

maximum value. The alternative sample is constructed by excluding the outliers of the growth data. Results show insignificant difference between these two set regressions. Nonetheless, only the regression estimates using the full sample are reported for brevity. Business risk and tax proxies of the sample firms each average at 11.024%, and 17.939%. On the other hand, the average tangibility of the sample is at 39.401%, whereas the mean profitability is at 3.509%.

4.2. Correlation Analysis

Table 4.2 presents the correlation analysis of the explanatory variables. The analysis suggests that this study have insignificant multicollinearity problem because the correlation coefficient values are generally less than 0.4.

Table 4.1

Summary Statistics of the Observed Variables

Variables	Mean	Standard deviation	Minimum	Maximum
Long-term debt ratio	0.332	0.309	0.000	1.000
Short-term debt ratio	0.568	0.345	0.000	1.000
Tobin's Q	1.227	0.963	0.103	17.129
Growth	1.853	51.551	0.009	4818.575
Risk	0.110	1.161	0.000	71.686
Size	5.665	1.486	0.954	11.503
Tangibility	0.394	0.207	0.000	1.087
Profitability	0.035	0.131	-1.677	5.761
Tax	0.179	2.184	-63.166	105.945
Dummy Market	0.927	0.261	0.000	1.000
Firm-year observations		8858		

Table 4.2

Correlation Matrix of the Observed Variables

	Tobin's Q	Growth	Risk	Size	Tangibility	Profitability	Tax	Dummy Market
Tobin's Q	1.000							
Growth	0.053***	1.000						
Risk	0.004	0.000	1.000					
Size	-0.005	-0.004	-0.022**	1.000				
Tangibility	-0.096***	-0.018*	-0.023**	0.097***	1.000			
Profitability	0.220***	-0.022**	-0.035***	0.126***	-0.097***	1.000		
Tax	-0.004	-0.001	-0.004	-0.008	-0.006	0.013	1.000	
Dummy Market	-0.055***	0.002	-0.036***	0.379***	0.159***	0.098***	0.011	1.000

A superscript *, ** or *** indicates significance at the 90%, 95% or 99% confidence levels, respectively.

Table 4.3

Debt Maturity Structure of Malaysian Companies using Cross-sectional Regression

Variables	Long Term Debt		Short Term Debt		Long Term Debt		Short Term Debt	
	Coefficient	t-value	Coefficient	t-value	Coefficient	t-value	Coefficient	t-value
Growth	0.000***	-3.53	0.000***	4.17	0.000***	-3.28	0.000***	3.70
Risk	-0.002*	-1.85	-0.003	-0.60	-0.002*	-1.84	-0.003	-0.62
Size	0.072***	34.12	-0.052***	-20.97	0.071***	32.06	-0.052***	-19.74
Tangibility	0.311***	20.10	-0.141***	-7.88	0.311***	20.07	-0.139***	-7.77
Profitability	0.028	1.24	-0.329***	-6.09	0.028	1.25	-0.330***	-5.99
Tax	0.001	0.85	0.000	-0.22	0.001	0.86	0.000	-0.31
Dummy market	-0.221***	-16.47	0.258***	16.47	-0.220***	-16.35	0.256***	16.23
Intercept	0.005	0.31	0.691***	38.06	0.024	0.88	0.691***	22.63
Year Effect	No		No		Yes		Yes	
R square	0.15		0.08		0.15		0.08	
Observation	8858		8858		8858		8858	

A superscript *, ** or *** indicates significance at the 90%, 95% or 99% confidence levels, respectively.

4.3. Pooled Cross-sectional Regression

Table 4.3 illustrates the estimates from pooled cross-sectional regression with robust standard errors to control for heteroskedasticity.

The growth explanatory variable, measured by market-to-book ratio, shows that growth is inversely related to long-term debt and it is positively related to short-term debt. Both relationships are significant at the 1% level. This means that high-growth companies are more likely to use less long-term debt but more short-term debt, which supports the agency cost of debt theory and trade-off theory. This is also consistent with the empirical studies of Myers (1977), Barclay and Smith (1995), Hutchinson (1995), Guedes and Opler (1996), Dennis et al. (2000), and Ozkan (2000) that find more short-term debt are employed by firms to reduce underinvestment problem.

Business risk is found to have negative relationship with long term debt, marginally significant at the 10% level. A firm with high business risk is less likely to opt for long-term debt financing because of the increasing financial distress cost as business risk increases. This is consistent with Guedes and Opler (1996), as well as Stohs and Mauer (1996). They argue that low business risk firms tend to use more long-term debt because it provides more value for the companies through larger tax deduction from increased interest payment. Furthermore, as supported by Myers' (1977) trade-off theory, low business risk companies can afford to take more long-term debt as they are able to take the increased risks because they are able to balance their

financial distress cost to enjoy the benefits of the tax deduction. On the other hand, business risk is found to be insignificant in affecting short term debt.

For the control variables, both firm size and tangibility are found to be positively related to long-term debt and inversely related to short-term debt, significant at 1% level. The results remain consistent even with panel data regression. The positive relationship of firm size and long-term debt maturity is consistent with the previous studies (Titman and Wessels, 1988; Stohs and Mauer, 1996). Small firms prefer short-term debt financing to lower their financing costs not only due to higher asymmetric information (Smith, 1977), but also the costs of short-term debt is relatively cheaper than long-term debt. On the other hand, larger firms tend to be more established than smaller firms thus larger size firms are more likely to opt for long-term debt financing because they have the ability to absorb higher bankruptcy cost.

The relationship between tangibility and debt maturity is also consistent with previous studies (Kirch and Terra, 2012; Fan, Titman, and Twite, 2012). Tangibility and firm size behaves similarly to debt maturity because larger firms tend to have more tangible assets that can be used as collateral against loans. As a result, companies with higher tangibility prefer long-term debt because of the tax deductability advantage which supports Kirch and Terra (2012) argument that tangible assets determine the capacity of companies borrowing long-term debt in the developing markets.

Profitability is found to have insignificant effect on long-term debt. However, it is negatively related to short-term debt, significant at 1% level, supports the signalling theory by Diamond (1991, 1993) and Stephan et al. (2011) where profitable firms will choose short-term debt to signal to the market that their companies has the ability to rollover their debt.

Tax proxy is found to have insignificant effects on debt maturity in the selected samples. The result remains even the test was done using panel data regression. This is inconsistent with previous studies, which suggest firms that use long-term debt benefits from its present value tax shield and the savings is accelerated on an upward sloping yield curve (Brick and Ravid, 1985; Kane et al., 1985; Stohs and Mauer, 1996 and Pour and Lasfer, 2013). The insginificant relationship could imply that Malaysia has a low effective tax rate and its yield curve could be flat.

The results of the study remains consistent even controlling for companies listed on the Main board or ACE board of Bursa Malaysia as well as year effect. Results show that companies listed on the Main board are less likely to use long-term debt but are more likely to use short-term debt to mitigate their agency cost of debt. In brief, the reported results not only support the agency cost of debt theory, in which companies tend to use more short-term debt to mitigate the underinvestment problem, but also support the signalling theory, which states that companies use short-term debt to signal to the market that the company has the ability to rollover its debt.

4.4. Fixed Effects Panel Data Regression

This section repeats the analysis in Section 4.3 using panel data regression to control for any potential bias due to correlation of the error terms across years in the cross sectional analysis. Moreover, panel data regression provides more robust analysis since the dataset of this study have dimensions of both cross-sectional and time-series. Results are presented in Table 4.4.

Table 4.4

Debt Maturity Structure of Malaysian Companies using Panel Data Regression

Variables	Long Term Debt		Short Term Debt	
	Coefficient	t-value	Coefficient	t-value
Growth	0.000	-0.78	0.000	1.15
Risk	-0.008***	-3.72	0.006**	2.44
Size	0.100***	20.26	-0.059***	-10.8
Tangibility	0.277***	13.15	-0.137***	-5.83
Profitability	0.109***	5.09	-0.191***	-8.01
Tax	0.001	0.79	-0.001	-1.04
Intercept	-0.346***	-11.45	0.964***	28.6
R square	0.12		0.04	
N	8858		8858	

A superscript *, ** or *** indicates significance at the 90%, 95% or 99% confidence levels, respectively.

Note that when panel data regression is considered, growth is found to have insignificant effect on debt maturity choice of a firm which is contrary to cross-sectional regression. This relationship is further examined in the next section 4.5, in which the sample firms are divided by the corporate values, measured by Tobin's Q in order to recognize the heterogeneous feature of the sample firms. On the other hand, firms with higher business risk are found to use less long-term debt but more short-term debt to mitigate the financial distress cost, which is significant at the 1%

and 5% levels, respectively. Conversely, lower business firms tend to prefer long-term debt than short-term debt to take advantage of the tax deductibility benefit of long-term debt financing. Therefore, these findings consistently support the second hypothesis (H2).

Most of the control variables are consistently significant at the 1% level, except profitability. Profitability is found to be positively related to long-term debt, at the 1% significance level. The result is consistent with Deesomsak et al. (2009) as well as Brick and Ravid (1985) who argue that profitable companies prefer long-term debt.

4.5. Comparison between High Tobin's Q and Low Tobin's Q Firms

To examine hypothesis 1(a) and 1(b), the sample firms are ranked by their corporate values, measured by Tobin's Q, to classify them into Top30 and Bottom30 firms. Top30 firms are firms with valuable investment known to outside investors. These firms are also overvalued by the market and the contrary for Bottom30 firms. Top30 firms are expected to be indifferent between long-term debt and short-term debt financing. In contrast, Bottom30 firms are hypothesized to prefer short-term debt than long-term debt. Panel A of Table 4.5 reports the results for Top30 firms, whereas Panel B reports the estimates for Bottom30 firms.

For the Top30 firms, the growth variables has insignificant effect on debt maturity structure, supporting Hypothesis 1(a) that argues high-growth firm with high Tobin's Q is indifferent between long-term debt and short-term debt. On the other hand, for Bottom30 firms, growth is found to have significant negative relationship with long-

term debt (refer Panel B of Table 4.5), also supporting the hypothesized H1(b), in which high-growth firm with low Tobin's Q are less likely to select long-term debt as their mode of financing because the company's corporate value is lack of recognition by the market (Myers, 1977; Barclay and Smith, 1995; Lang et al.. 1996). These findings are consistent across three models. In Model 1, the sample firms are ranked by the Q's firm-year observations, whereas in Model 2 the sample firms are ranked by the average Q of individual firm. Then, the sample firms are grouped into Top30 and Bottom30 firms. In addition, as a robustness check, a firm is grouped by the cut-off value of 1. A firm is considered to have high Tobin's Q if the Q's ratio is greater than 1 and the opposite for Q's ratio less than 1, represented by Model 3.

Business risk and profitability are shown to be insignificant in influencing the level of long-term debt of the Top30 firms in Models 1 and 2. In contrast, Model 3 shows that firms with Q's ratio greater than 1 are less likely to use long-term debt when business risk increases. Instead, business risk and profitability are shown to be inversely related to short-term debt, implying that as business risk and profitability increases, high corporate value firms use less short-term debt. The firm size and tangibility variables of Top30 firms are positively related to long-term debt, significant at 1% level. Similar findings are observed for Bottom30 firms too. These variables support the tax advantage theory where the larger the firm size and the higher the firm's tangibility, firms will opt for long-term debt instead of short term debt.

To conclude, the results provide evidence to support the hypothesized Hypothesis 1(a) and 1(b), in which high-growth firm with high Tobin's Q is indifferent between

long-term debt and short-term debt, but high-growth firm with low Tobin's Q are less likely to opt for long-term debt. This also implies the importance to recognize the heterogeneity of sample firms such as corporate value or the Q's ratio, presented in this study.

Table 4.5

Comparison between High Tobin's Q and Low Tobin's Q firms

Panel A: Top30 firms (High Tobin's Q firms)

	MODEL 1				MODEL 2				MODEL 3			
	Rank by Q's observation				Rank by average Q				Tobin's Q > 1			
Variables	**Long Term Debt**		**Short Term Debt**		**Long Term Debt**		**Short Term Debt**		**Long Term Debt**		**Short Term Debt**	
	Coefficient	**t-value**	**Coefficient**	**t-value**	**Coefficient**	**t-value**	**Coefficient**	**t-value**	**Coefficient**	**t-value**	**Coefficient**	**t-value**
Growth	0.000	-0.83	0.000	1.38	0.000	-0.58	0.000	1.17	0.000	-0.75	0.000	1.16
Risk	-0.011	-1.36	-0.019**	-2.02	-0.001	-0.11	-0.025*	-1.95	-0.008***	-3.43	0.005**	1.98
Size	0.126***	13.56	-0.058***	-5.69	0.113***	13.68	-0.050***	-5.43	0.107***	15.07	-0.059***	-7.55
Tangibility	0.227***	4.67	0.015	0.28	0.292***	6.67	-0.063	-1.29	0.208***	5.98	-0.052	-1.35
Profitability	0.033	0.88	-0.090**	-2.17	0.064	1.64	-0.133***	-3.05	0.061*	1.86	-0.119***	-3.32
Tax	-0.003	-0.94	0.000	0.04	0.003	1.07	-0.002	-0.52	-0.001	-0.31	-0.001	-0.32
Intercept	-0.453***	-7.67	0.825***	12.67	-0.407***	-7.74	0.796***	13.54	-0.350***	-7.83	0.886***	17.94
R square	0.15		0.05		0.16		0.04		0.14		0.05	
N	2658		2658		2501		2501		4156		4156	

Panel B: Bottom30 firms (Low Tobin's Q firms)

	MODEL 1				MODEL 2				MODEL 3			
	Rank by Q's observation				Rank by average Q				Tobin's Q > 1			
Variables	**Long Term Debt**		**Short Term Debt**		**Long Term Debt**		**Short Term Debt**		**Long Term Debt**		**Short Term Debt**	
	Coefficient	**t-value**	**Coefficient**	**t-value**	**Coefficient**	**t-value**	**Coefficient**	**t-value**	**Coefficient**	**t-value**	**Coefficient**	**t-value**
Growth	-0.060*	-1.81	-0.021	-0.57	-0.029***	-4.72	0.029***	4.15	-0.069***	-4.04	0.012	0.62
Risk	-0.022	-0.99	-0.019	-0.76	-0.046	-1.54	0.015	0.43	-0.031*	-1.93	0.006	0.32
Size	0.119***	7.47	-0.078***	-4.31	0.065***	5.48	-0.037***	-2.75	0.097***	10.97	-0.061***	-6.13
Tangibility	0.139***	3.29	-0.054	-1.12	0.218***	5.55	-0.103**	-2.31	0.290***	10.17	-0.166***	-5.14
Profitability	0.197***	2.63	-0.354***	-4.16	0.331***	5.28	-0.333***	-4.68	0.106***	3.46	-0.221***	-6.41
Tax	0.000	0.32	-0.001	-0.38	0.001	0.37	-0.001	-0.54	0.002	1.45	-0.002	-1.45
Intercept	-0.378***	-4.12	1.082***	10.34	-0.131*	-1.85	0.871***	10.85	-0.300***	-5.68	1.015***	16.97
R square	0.05		0.02		0.14		0.07		0.08		0.02	
N	2657		2657		2538		2538		4702		4702	

A superscript *, ** or *** indicates significance at the 90%, 95% or 99% confidence levels, respectively.

5. CONCLUSION

This chapter concludes this study. Previous studies show that high-growth firms have more short-term debt to mitigate underinvestment problem and preserve its future debt. However, there are contradicting results on the empirical studies which show that high-growth firms with high corporate value do not affect the debt maturity choices of companies due to its low leverage. Motivated by this conflicting result, as well as the increasing empirical studies which focuses on debt maturity structure of companies, this study analyses whether growth affects the debt financing decision of Malaysian companies by their corporate values, denoted by Tobin's Q ratio.

This study recognizes that debt maturity does not affect high-growth firms with high Tobin's Q value. However, a high-growth firm with low Tobin's Q has an inverse relationship with long-term debt, which support hypothesis H1(b). This is because the company's corporate value is either lack of recognition by the market or the company is poorly managed, among other reasons, increases the cost of debt for these firms because the debt borrowed does not give the lender the confidence that the debt will be used profitably. Consistently, the results presented in this study provide significant evidence to support the agency costs and trade off theories. In brief, this study provides additional insight to the studies on debt maturity structure by recognizing the firms by their corporate values.

Potentially, future study can incorporate industries effect into consideration. The study may examine the debt maturity structure of Malaysian listed firms by their respective industry because each industry has its own specific characteristics. Moreover, future study perform comparative study among the developing countries such as the ASEAN or Asian countries.

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