



UNIVERSITI PUTRA MALAYSIA

***EFFECTS OF FINANCIAL LEVERAGE ON STOCK RETURNS IN
BURSA MALAYSIA***

LAU WEI THENG

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**EFFECTS OF FINANCIAL LEVERAGE ON STOCK RETURNS IN
BURSA MALAYSIA**

By

LAU WEI THENG

**Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in
Fulfilment of the Requirements for the Degree of Doctor of Philosophy**

February 2016

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DEDICATION

In dedication to my parents and family members for supporting me all the way
throughout years



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Abstract of thesis presented to the Senate of Universiti Putra Malaysia
in fulfilment of the requirement for the Degree of Doctor of Philosophy

**EFFECTS OF FINANCIAL LEVERAGE ON STOCK RETURNS IN
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LAU WEI THENG

February 2016

Chairman : Law Siong Hook, PhD
Faculty : Economics and Management

Motivated by the over-leveraging problem widely claimed to have triggered the recent global financial crisis, this thesis aims to provide empirical evidence to three major issues of financial leverage: the role of cash flow, the existence of the leverage threshold, and the role of leverage maturity. Employing data relating to about 500 firms from 1986-2012, the sector-specific results suggest that industry, cash flow, debt maturity, non-linearity, as well as different leverage measures are among the important factors that could affect the leverage-to-stock returns nexus.

As cash flows exhibit important implications based on different capital structure theories, the first objective of the study is to examine the role of cash flows in affecting leveraged stock returns. The panel regressions show that industry-specific analysis matters due to the various marginal effects of leverage conditional on cash flows across sectors. Cash flow from operating activities, cash flow for capital expenditure, and free cash flow are employed and each exhibits an important role in affecting the leverage-to-returns nexus in most of the sectors. Findings are robust to market and book measures of leverage, net or inclusive of cash position. The conditional leverage impacts remain robust to firm effects and time effects in handling the firm-level financial data.

The second objective of this thesis is motivated by both the proposed over-leverage issue in the financial markets nowadays as well as the arguments of trade-off theory. Panel threshold regressions show that various financial leverage thresholds are identified in relation to stock returns with their impacts differing across sectors. Apart from 3 out of 12 sectors which do not show the existence of a threshold, the empirical results reveal that financial leverage contributes negatively to stock returns, or the positive impact decreases when leverage rises further. As such, excessive financial leverage should be avoided in maximising shareholders' wealth. The empirical results are robust using two indicators of financial leverage as well as in different sample periods.

The third objective of this study is to examine whether the effects of financial leverage on returns can be explained by debt maturity, especially as maturity mismatch problems have been widely discussed since the last Asian financial crisis. When the financial leverage is divided into short-term debt and long-term debt, a total of 9 sectors reveal that either form of leverage has a significant relationship with stock returns. The

empirical findings also suggest that the claim that short-term debt carries a higher risk, therefore investors are compensated with higher returns is rebuttable. The findings are confirmed by using book leverage and market leverage, including various adjusted standard errors to accommodate the characteristics of firm-level financial data.



Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia
Sebagai memenuhi keperluan untuk Ijazah Doktor Falsafah

KESAN LEVERAGE KEWANGAN ATAS PULANGAN SAHAM DALAM BURSA MALAYSIA

Oleh

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Didorong oleh masalah leverage terlebih yang dianggap sebagai factor yang mencetuskan krisis kewangan global kebelakangan ini, tesis ini bertujuan mencari bukti empirikal untuk tiga isu utama leverage kewangan iaitu peranan aliran tunai, kewujudan threshold leverage, dan peranan jangka hutang. Dengan data manghampiri 500 firma untuk tahun 1986-2011, analisis sektor ini mencadangkan bahawa industri, aliran tunai, jangka hutang, ketaklelurusan, serta ukuran leverage yang berbeza, adalah antara faktor-faktor penting yang boleh mempengaruhi hubungan leverage dan pulangan saham.

Memandangkan aliran tunai memberi implikasi penting berdasarkan teori-teori struktur modal yang berlainan, objektif pertama kajian ini bertujuan untuk mengkaji peranan aliran tunai dalam mempengaruhi pulangan saham syarikat yang memikul hutang. Regresi panel menunjukkan bahawa analisis khusus industri adalah penting kerana pelbagai marginal leverage telah dikenalpasti berdasarkan aliran wang tunai yang berlainan dalam pelbagai sektor. Aliran tunai daripada aktiviti operasi, aliran tunai untuk perbelanjaan modal, dan aliran tunai bebas telah digunapakai, dan setiap aliran tunai tersebut mempamerkan peranan penting dalam mempengaruhi hubungan leverage-pulangan saham dalam kebanyakan sektor. Penemuan analisis adalah kukuh untuk ukuran-ukuran leverage pasaran dan buku, mengecualikan atau termasuk tunai. Kesan leverage tersebut kekal kukuh untuk kesan firma dan kesan masa dalam pengendalian data kewangan firma.

Objektif kedua tesis ini didorong oleh kedua-dua isu iaitu leverage terlebih dalam pasaran kewangan masa kini, dan juga hujah-hujah teori *trade-off*. Regresi threshold panel menunjukkan bahawa pelbagai threshold leverage kewangan dikenalpasti berhubung dengan pulangan saham, dengan kesan-kesan yang berbeza dalam sector yang berlainan. Selain daripada 3 daripada 12 sektor yang tidak menunjukkan kewujudan threshold, keputusan empirikal menunjukkan bahawa leverage kewangan menyumbang secara negatif kepada pulangan saham, atau kesan positif berkurangan apabila leverage meningkat. Oleh itu, leverage kewangan yang berlebihan harus dielakkan dalam memaksimumkan kekayaan pemegang saham. Keputusan empirikal adalah kukuh menggunakan kedua-dua penunjuk leverage kewangan, dan juga dengan menggunakan tempoh sampel yang berbeza.

Objektif ketiga kajian ini bertujuan untuk mengkaji sama ada kesan leverage kewangan ke atas pulangan dapat dijelaskan oleh jangka hutang, terutamanya apabila isu masalah ketidakpadanan jangka hutang telah dibincangkan secara meluas sejak krisis kewangan Asia yang lalu. Apabila leverage kewangan dibahagikan kepada hutang jangka pendek dan hutang jangka panjang, sejumlah 9 sektor mencadangkan bahawa leverage dalam mana-mana ukuran tersebut menunjukkan hubungan yang signifikan dengan pulangan saham. Hasil kajian empirikal juga mencadangkan bahawa kenyataan di mana hutang jangka pendek membawa risiko yang lebih tinggi maka sepatutnya diikuti dengan pulangan yang lebih tinggi adalah tidak kukuh. Penemuan ini disahkan dengan menggunakan kedua-dua ukuran leverage buku dan leverage pasaran, termasuk pelbagai ralat piawai yang diselaraskan untuk menyesuaikan ciri-ciri data kewangan di peringkat firma.



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I certify that a Thesis Examination Committee has met on 23 February 2016 to conduct the final examination of Lau Wei Theng on his thesis entitled "Effects of Financial Leverage on Stock Returns in Bursa Malaysia" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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TABLE OF CONTENTS

	Page
ABSTRACT	i
ABSTRAK	iii
ACKNOWLEDGEMENTS	v
APPROVAL	vi
DECLARATION	viii
LIST OF TABLES	xii
LIST OF FIGURES	xiv
CHAPTER	
1 INTRODUCTION	1
1.1 Background of Study	1
1.2 Problem Statement	5
1.3 Contribution of the Study to the Literature	7
1.4 Research Questions and Objectives	9
1.5 Significance of the Study	9
2 LITERATURE REVIEW	11
2.1 Fundamental Theories of Capital Structure	11
2.1.1 Modigliani-Miller Propositions	11
2.1.2 Trade-Off Theory	12
2.1.3 Pecking Order Theory	14
2.1.4 Market Timing Theory	15
2.2 Firm Performance and Capital Structure	16
2.3 Implication of Cash Flow in Leverage Decision	18
2.4 Significance of Industry Factor to Capital Structure	20
2.5 Necessity of Country Specific Analysis	23
2.6 Stock Returns Predictability with Leverage	24
2.7 Decision on Debt Maturity	27
2.8 Stock Returns Determinants	29
2.8.1 Capital Assets Pricing Model	29
2.8.2 Book-to-Market Equity	30
2.8.3 Size	31
2.8.4 Earnings Yield	31
2.8.5 Momentum	31
2.9 Sector Classification of the Malaysian Stock Market	32
2.10 Chapter Summary	34
3 DATA, RESEARCH METHODOLOGY, AND FINDINGS ON OBJECTIVE I	35
3.1 Introduction	35
3.2 Methodology and Data	35
3.2.1 Hypothesis Development and Empirical Model	35
3.2.2 Estimation Methods	38
3.2.3 The Data	40
3.3 Empirical Results and Discussion	45
3.4 Chapter Summary	66

4	DATA, RESEARCH METHODOLOGY, AND FINDINGS ON OBJECTIVE II	67
	4.1 Introduction	67
	4.2 Methodology and Data	67
	4.2.1 Hypothesis Development and Empirical Model	67
	4.2.2 Estimation Methods	69
	4.2.3 The Data	71
	4.3 Empirical Results and Discussion	72
	4.4 Chapter Summary	88
5	DATA, RESEARCH METHODOLOGY, AND FINDINGS ON OBJECTIVE III	89
	5.1 Introduction	89
	5.2 Methodology and Data	89
	5.2.1 Hypothesis Development and Empirical Model	89
	5.2.2 Estimation Methods	92
	5.2.3 The Data	92
	5.3 Empirical Results and Discussion	93
	5.4 Chapter Summary	105
6	SUMMARY AND CONCLUSION	107
	6.1 Summary of The Study	107
	6.1.1 Results Summary of Research Objective I	107
	6.1.2 Results Summary of Research Objective II	108
	6.1.3 Results Summary of Research Objective III	109
	6.2 Implications of the Study	109
	6.3 Recommendation for Future Research	110
	BIBLIOGRAPHY	111
	APPENDICES	127
	BIODATA OF STUDENT	130

LIST OF TABLES

Table		Page
1.1	Quarterly financial information of Megan Media dated 30 April 2006.	3
2.1	Sector classification according to Bursa Malaysia.	33
3.1	Sector classification of Bursa Malaysia according to ICB.	41
3.2	Regression results for the interaction between leverage and operating cash flow.	47
3.3	Regression results for the interaction between leverage and investing cash flow.	48
3.4	Regression results for the interaction between leverage and free cash flow.	49
3.5	Regression results for the interaction terms between total leverage and operating cash flow.	58
3.6	Regression results for the interaction terms between total leverage and investing cash flow.	59
3.7	Regression results for the interaction terms between total leverage and free cash flow.	60
3.8	Regression results for the interaction terms between leverage and cash flows for certain sectors when quadratic terms of leverage and cash flow are included.	61
3.9	Comparisons for the interaction terms between leverage and cash flows for certain sectors to check its robustness with panel data interaction method with Frisch-Waugh residual (see Balli and Sorensen, 2010).	62
3.10	Regression results for the interaction terms between net leverage and cash flow.	63
3.11	Dynamic panel estimation using two-step difference GMM.	64
3.12	List of chosen Malaysian government-linked companies.	65
3.13	Regression results for the interaction between leverage and cash flows for Malaysian government-linked companies.	66
4.1	Sector classification of Bursa Malaysia according to ICB.	72
4.2	Descriptive statistics of firm-level total book leverage, total market leverage, and adjusted returns according to sector classifications. Year: 1985-2010. Firms: 483.	73

4.3	Test for threshold effects of total book leverage on stock returns for various business sectors.	74
4.4	Test for threshold effects of total market leverage on stock returns for various business sectors.	75
4.5	Threshold regression results for various sectors which exhibit existence of book leverage threshold.	77
4.6	Threshold regression results for various sectors which exhibit existence of market leverage threshold.	78
4.7	Threshold regression results for various sectors which do not exhibit existence of book leverage threshold.	82
4.8	Threshold regression results for various sectors which do not exhibit existence of market leverage threshold.	83
4.9	Test for threshold effects of total book leverage on stock returns for various business sectors by randomly picking different sample periods (as shown in parentheses).	85
4.10	Test for threshold effects of total market leverage on stock returns for various business sectors by randomly picking different sample periods (as shown in parentheses).	85
4.11	Threshold results of robustness check for some selected sectors.	86
4.12	Threshold regression for the Malaysian government-linked companies.	87
5.1	Sector classification of Bursa Malaysia according to ICB.	93
5.2	Descriptive statistics of each sector.	95
5.3	Regression results for each sector by adopting book leverage.	96
5.4	Regression results for each sector by adopting market leverage.	97
5.5	Results of robustness checks for each sector by adopting book leverage.	102
5.6	Results of robustness checks for each sector by adopting market leverage.	103
5.7	Dynamic estimation using two-step Difference GMM.	104
5.8	Regression results for Malaysian government-linked companies.	105

LIST OF FIGURES

Figure		Page
1.1	Average Sector Leverage in the Main Market of Bursa Malaysia.	5
2.1	Optimal Debt Ratio.	13
2.2	Number of Listed Company on the Bursa Malaysia.	34
3.1	Marginal Effects of Financial Leverage on Stock Returns by Adopting Total Book Leverage and Operating Cash Flow.	53
3.2	Marginal Effects of Financial Leverage on Stock Returns by Adopting Total Market Leverage and Operating Cash Flow.	54
3.3	Marginal Effects of Financial Leverage on Stock Returns by Adopting Total Book Leverage and Investing Cash Flow.	55
3.4	Marginal Effects of Financial Leverage on Stock Returns by Adopting Total Book Leverage and Free Cash Flow.	55
3.5	Marginal Effects of Financial Leverage on Stock Returns by Adopting Total Market Leverage and Free Cash Flow.	56

CHAPTER 1

INTRODUCTION

1.1 Background of Study

This thesis is about capital structure. Capital structure, as a popular research area in finance state, is about the way firms finance their assets. Firms may have different proportions of equity and debt as sources of funds in their capital structure. Long-term debt, short-term debt, common shares and preferred shares are among the common forms of debt and equities (see Ross, Westerfield and Jaffe, 2005). How a firm finances its overall operations and growth is crucial. For simplicity, the term “financial leverage”, reflecting capital structure, is the proportion of a firm’s capital financed with debt. As in the real world, capital structure may not be just between debt and equity but may include other hybrid securities.

The main motivation of using leverage in a business, other than due to insufficiency of equity funds, is to amplify the potential gains of business owners. With less equity capital used, potential profits can be shared among a smaller base, thus increasing the potential return on equity (ROE). Certainly, it also puts the business at risk of greater losses if things turn out different than expected. This is the reason why leverage is commonly agreed as a double-edged sword. Though the basic motivation is the same, capital structures or leverage largely depend on firm-specific factors such as the size, profitability, quality and structure of assets, growth prospects, earnings volatility, etc.

The level of debt used by a firm, leverage, is regarded as a source of risk (Modigliani and Miller, 1958; Bhandari, 1988) or more particularly a financial risk. In examining the worthiness of additional risk incurred, it is not an unusual practice that market practitioners and researchers relate capital structure to corporate performance (Zeitun and Tian, 2007). Corporate performance such as productivity, profitability, and growth, are commonly related to each other. Financial indicators on such a performance includes but is not limited to ROE, earnings per share, dividend yield, price earnings ratio, sales growth, and market capitalisation as tools that measure the financial profitability and performance of a firm (Barbosa and Louri, 2005). For instance, Myers (1977) argues that a firm financed with large risky debts may prevent it from raising funds to finance positive net present value (NPV) projects. How capital structures could add value to a firm through these financial indicators becomes a matter of great interest in the markets.

Though the different proportions of debt in capital structure are claimed to have different impacts on a firm’s value, the financial performance or profitability of a firm does not automatically become real returns to a common shareholder. As being explained by all investment textbooks, shareholders’ returns come from stock price appreciation and dividend payments. The calculation of rate of returns includes both dividends and the change in the stock’s market price from the day the stock was purchased. While financial indicators or accounting numbers explain a firm’s performance, shareholder wealth is ultimately reflected only through the firm’s market value.

Since the firm's past performance and performance expectations are closely related to its equity returns, the relationship between leverage and stock returns, as a more direct return to shareholders, is given focus in this study. Under fundamental perspectives, appreciation of stock price or market value of the stock not only reflects the firm's historical performance and growth, but also growth expectations, which can be due to reinvestments of earnings, new investments, or both. The investors' decision to buy, sell or hold a stock largely depends on their expectations of the future rate of returns on investments in that particular stock. Rationally, leverage decisions that determine the sources of financing should play a significant role in determining the growth of firm. It is thus of interest to know whether leverage can be treated as a gauge in determining such growth expectations, thus playing an important role of asset pricing in the capital market.

While the basic motivation of leverage is to increase potential ROE, there is increasing doubt on the worthiness of taking up additional leverage which may backfire badly, especially during uncertain economic conditions. Since the occurrence of recent US and European financial crises, which triggered liquidity confidence problems, the importance of capital structure decisions has become more prominent. This puts plenty of firms, especially the already highly leveraged firms, at a fragile financial position. Banks become more reluctant to lend. Repaying the capability of those with high debts has been in doubt. Even countries with high levels of sovereign debts faced downgrades and credit pressures, leaving the global financial markets in fear. Not only did firms start building up cash and become more hesitant to spend, but some extreme investors also turned their interest only on firms with zero debt or with huge cash piles.

On a broader perspective, the problem of excessive firm leverage is also theoretically related to recession. For instance, if most firms in an industry carry excessive debt to the extent that they cannot borrow additional funds to purchase capital goods, they would face difficulties in sustaining sales or to increase production. Cash flow may only be sufficient to pay debts or else the firm be sued for default. Workers may need to be laid off to preserve cash. The result is stagnant growth or recession in the particular industry. Worse, over the years, both the providers and the suppliers of funds in the market may be having the wrong perception that greater borrowing is nothing to worry about. Reinhart and Rogoff (2010), and Caner, Grennes and Kohler-Geib (2010) in their respective studies also find that, on average, if the public debt of a country surpasses the thresholds of 77-90 percent to GDP, the real growth rates decline.

Over the years, not many studies actually focused on the effects of capital structure on stock returns (Gomes and Schmid, 2010). If a firm is over-leveraged, is it actually gambling with economic disaster? If investors simply judge a firm's potential without the right considerations of its leverage level, are these investors actually gambling with their hard-earned money?

Following the bust of US housing and credit bubbles, the over-leverage problem of Wall-Street banks has been widely criticised for triggering the 2007-2008 financial crisis. The issue is still on-going (as in 2014) and is further widespread to the European financial system and global economy. Due to the over-exposure of toxic

securities, even the world's biggest bank like Citigroup needed to be rescued by the government from bankruptcy once. The crisis witnessed its share price tumbling from an all-time high of more than US\$55 to less than US\$1 per share, leaving its shareholders stunned. Leverage, if considered carefully, could be a useful guideline in saving investors from a wrong investment decision which put them in unacceptable excessive risky position. Still, not many market participants realise the fact that the accounting numbers of borrowings that appear in the publicly available financial statements may provide some insights about a firm's trouble.

On the Malaysian market front, one example is the renowned fraud case of Megan Media Holdings Berhad back in 2007. In its report for the financial period ending 30 April 2006 announced on 30 June 2006, it reported earnings per share of 29.48 sen that was translated to an accounting ROE of 14% and so the firm was deemed healthy. The profit before tax surged to 26%. However, investors may or may not have been aware that borrowings have rocketed from RM593 million to RM839 million, and the bulk of the 41% increase was merely to finance account receivables without involving any substantial investment, which also resulted in a full-year negative operating cash flow of RM66.5 million. The main issue was that, in spite of the accounting ROE being reported as "healthy", in the end it did not actually turn to positive real gains for its shareholders in terms of stock returns.

Table 1.1: Quarterly financial information of Megan Media dated 30 April 2006.
Extracted from income statement (RM'000):

	Year ended 30/4/05	Year ended 30/4/06	Change (%)
Net Profit Before Tax	68,633	86,792	26%

Extracted from balance sheet (RM'000):

	As at 30/4/05	As at 30/4/06	Change (%)
Short-term borrowings	362,919	290,294	-20%
Long-term borrowings	230,076	548,375	138%
Total borrowings	592,995	838,669	41%
Property, plant and equipment	712,071	660,983	-7%
Trade receivables	251,276	319,001	27%
Other receivables, deposits & prepayments	47,636	243,760	412%

Extracted from cash flow statement (RM'000):

	Year ended 30/4/05	Year ended 30/4/06	Change (%)
Cash from operating activities	167,762	(66,458)	-

(Source: Quarterly report on results for the financial quarter ended 30 April; Megan Media Holdings Berhad, 2006)

The accounting numbers should raise at least two questions. First, should the market respond to such changes of borrowings or leverage? If yes, what should the expectation be? Regardless of whether the account was a fraud alert, the presentation

of those numbers should turn out to be a warning sign for those who care about leverage. On 4 May 2007, the company announced that its subsidiaries had defaulted on trade facilities due to insufficiency of cash flow. The company was then investigated by the Security Commission and finally delisted from Bursa Malaysia on 23 April 2008. Investors who had bought the shares for its accounting ROE and profit growth without considering the quality of its leverage suffered significant losses. This is just an example to reflect on how leverage information could play an important role in investment decisions and market efficiency. Moreover, while the quality of earnings is usually associated with cash earnings, low operating cash flows may indicate possible earning quality issues.

The liquidity or cash flow conditions as above could also be related to the ability and reasons of firms for borrowing different maturities. The table above shows that short-term debt of Megan Media had decreased 20% while long-term debt had surged 138%. The huge changes in the mix of debt maturity could help indicate the ability of the firm to repay or the quality of its earnings. This is important, especially under current conditions as more researchers have started focusing on examining how debt maturity mix, i.e. the choice between short-term and long-term debt, is determined.

Maturity mismatch has been widely claimed as one of the main factors that exaggerated the Asian financial crisis in the 1990's. Since then, Asian governments have intensified efforts to develop the bond market to offer alternative sources of finance and mitigate the issue of funding mismatches. For instance, the size of the local currency bond market in percentage of GDP has grown from 73.3% in Dec 2000 to 96.0% in Mar 2015. In terms of value, it has even grown several folds from MYR261 billion to MYR1073 billion.¹ Despite the consensus on the advantages of long-term bonds, there are still limited empirical studies discussing the issue of debt maturity in firm-level financial leverage decisions.

Besides, there are always efforts to identify close optimal capital structures for a value maximisation purpose. A firm could issue various securities in countless mixtures to establish its capital structure, but the optimal capital structure is always difficult to determine. Optimal capital structure means that a particular combination of financing sources that can maximise a firm's overall value. It should have a minimum weighted-average cost of capital and therefore a maximum firm value. Despite the popularity of trade-off theory, pecking order theory and signaling theory research topic that has been widely done over the years and yet no formula or theory has so far conclusively provided optimal solutions for financing strategy (Myers, 2001).

Industry affiliation, as well as the characteristics of the country where the firm operates would have impact on the differences in leverage among firms (Titman and Wessels, 1988; Booth, Aivazian, Kunt and Maksimovic, 2001). This study will try to examine the possible existence of an optimal threshold of capital structure from the perspective of asset pricing across various sectors in Malaysia. Figure 1.1 shows the average leverage (in debt-to-equity terms) of different sectors of Bursa Malaysia (Main Market) by the end of 2011 as an example. While most of the sector leverage

¹ Source: Asian Bonds Online accessed in June 2015.

² In the literature of capital structure, the term "market leverage" is usually used when market equity value is applied in the computation of leverage ratio. When book equity value is applied, the leverage

observed was contained below 80% of debt-to-equity, different sectors are being financed with different levels of capital structure.

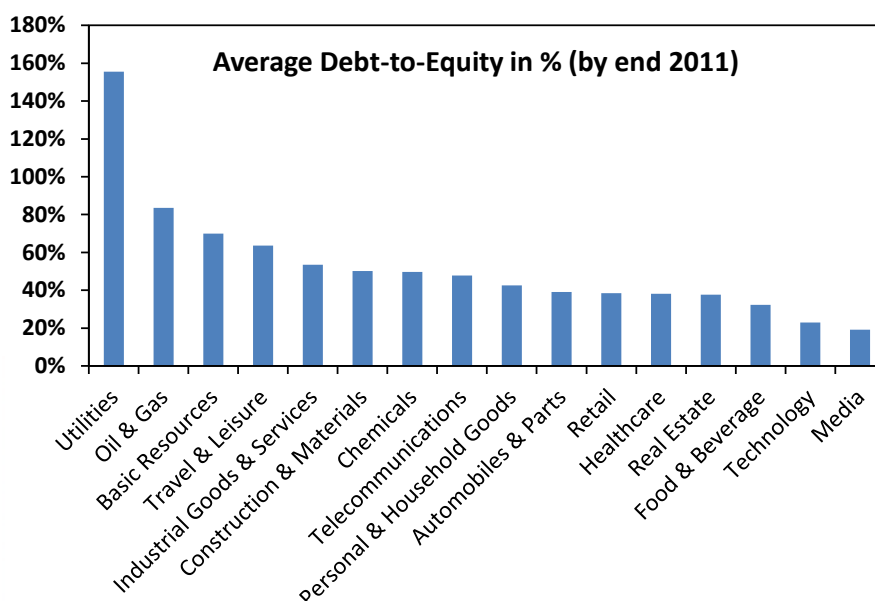


Figure 1.1: Average Sector Leverage in the Main Market of Bursa Malaysia.
(Data source: Thomson Reuters DataStream, for firms listed prior to 1 Jan 2002)

1.2 Problem Statement

The above-mentioned U.S. and Malaysian scenarios are just examples of extreme cases that have put many investors through massive losses. There are many other over-leveraged firms in the markets which are still surviving, but have probably not been able to create adequate value to compensate the additional risk taken up by shareholders. Some may even cause values to diminish. Typical cases are like debt restructuring and right issue of shares that are to shareholders' disadvantages. In cases like those above, it is again worth noting that the information of financial leverage could save investors from losses if studied properly.

Nevertheless, financial leverage is not considered often in a proper way. Such negligence may lead to erroneous perceptions in the market and detrimental equity investments across industries. Unfortunately, it has not been a common practice in the market, especially among retail investors, to differentiate between "value-added leverage" and "value-destructive leverage". The recent global financial crisis further witnessed the severity of over-leverage problems in the market.

The proper way to examine leverage, however, could become an argument itself. Conventional texts suggest a reasonably straightforward relation between leverage and expected returns i.e. increases in leverage would increase the risk of cash flows to shareholders. Therefore, higher leverage should be associated with a higher required rate of return by shareholders. Despite this, previous studies show mixed results on how the level of debt affects stock returns, for example by Joseph (1968), Bhandari (1988), Fama and French (1992), Penman, Richardson and Tuna (2007),

and George and Hwang (2010). This may send puzzling hints to the market. If the uniqueness of leverage effects is not able to be explained, it may not become a convincing parameter for investment evaluation.

First, a firm may have various reasons to raise debt. The impact of debt-raising by a firm needing funds for new investment should be different from the impact of debt-raising by a firm needing cash due to operational problem (Dimitrov and Jain, 2008; Frank and Goyal, 2008), as in the above-mentioned fraud case. The needs and the benefits from leverage should not be evaluated from the amount of debt alone without taking the need and use of cash into consideration. If leverage alone is not able to convincingly explain a company's expected return, the analysis of leverage itself may not be adding adequate value to the investment's decision. This is not to mention that earning quality may sometimes compromise for leveraged firms that are aggressive in achieving earning growth to satisfy market expectations. Consequently, investors who fancy leverage and high accounting ROE may misinterpret excessive debt which does not actually add value. Vice versa, investors who dislike leverage may miss a worthy investment opportunity when debt is raised to fund positive NPV projects.

Second, along with leverage level and liquidity constraints, managers also choose the debt maturity structure to maximise the value of their firms. Kose (2012) argues that debt maturity helps explain why empirical relations between leverage and returns have been mixed. Besides, unlike developed financial systems, developing markets are usually associated with different restrictions that hinder firms to set up optimal debt maturity (Stephan, Talavera and Tsapin, 2011). While debt maturity mismatch has been criticised as one of the major factors of the last Asian financial crisis, investors often question the ability of firms in servicing their debt obligations on different maturities. Such consideration is especially crucial during unstable economic conditions.

Following the recent 2012-2015 debt crisis due to over-leverage problems, this study basically raises the concern as to whether firm-level leverage, if being ignored, would be harmful to equity investment. Therefore lastly, investors and firms need to be aware of the problem of over-leverage should there exist an optimal threshold of leverage as claimed by the conventional theory. In the case of such levels of optimal threshold existing, they are varied across different industrial setups. A possible wrong consideration of linear impact of leverage can be worse than a "no consideration".

Besides, some investors may not reckon the industrial factor in the assessment of leverage. Considerable debt may bring positive effects for some firms but at the same time, cause negative effects for some others. This may be due to different nature of businesses, which operates under different industrial setups. An under-leverage problem for one firm may be deemed overleveraged for another. On a broader viewpoint, the left-unattended over-leverage problem across firms and industries could cause instability in the market since artificial growth confidence spurring through the misuse of leverage is unsustainable. This is also a reason as to why de-leveraging has become an important issue that has raised market concerns across countries and firms nowadays.

Extensive discussions and research have shown that information embedded in financial leverage could be assessed from various perspectives. If the leverage is not considered in an appropriate manner, their impacts could be improperly assessed and thus wrong decisions could be made. Based on the available empirical evidence, it is believed that the factors discussed above have not been widely considered by market practitioners or received sufficient attentions from academics.

1.3 Contribution of the Study to the Literature

The study of the relationship between leverage and stock returns started decades ago, yet the empirical results on the usefulness of leverage in investment strategies have always been inconclusive. It should become a renewed concern in the middle of global financial crisis due to the contagion issue of debt and liquidity problems.

First, this study recognises the existence of various cash flows in affecting the relationship between leverage and stock returns. The literature shows that capital structure is not only closely-related to company-specific factors such as profitability, operating efficiency and growth prospects, but there have also been studies on the relationship between leverage and cash flows such as by Shenoy and Koch (1996), Minton and Schrand (1999), and Byoun (2008). For instance, Faulkender, Flannery, Hankins and Smith (2012) indicate that cash flows largely affect the endogenous decision to adjust leverage. Conventional capital structure theories usually have implications on cash flows. Trade-off theory implies that the volatility of cash flow tends to affect financial distress cost. Agency theory and signalling theory imply that high free cash flow should be associated with high leverage (Ross, 1977; Harris and Raviv, 1991) which may cause a tendency of overinvestment. Pecking order theory implies that a higher free cash flow should be followed by lower leverage; or rather leverage is limited by the degree of free cash flow and thus causes a tendency of underinvestment.

Despite their important implications on companies' funding capabilities and performance, cash flows were seldom given much attention in previous studies examining the impact of leverage on a company's stock returns. For example, the strength of cash flows could help differentiate firms which finance through leverage merely due to cash management problems from uses of leverage for growth purpose. It could largely affect the impact of leverage on returns. As such, failure to consider the differences of cash flow characteristics may cause distortive understandings of the impact of leverage. This study thus tries to look into the relationship by considering different cash flows, which should be deemed important but are easily overlooked.

Cash flows from operating activities cover continuing business cash-flow by generating capabilities and are usually associated with the quality of reported earnings (Chan, Louis Chan, Jegadeesh and Lakonishok, 2006). It takes the cash conversion cycle into consideration due to the nature of business. Receivable collection difficulties or inventory conversion problems can be captured. Cash flows from investing activities, or more specifically capital expenditure, indicate funds required for new investments for the expansion or growth purposes. Free cash flow is merely the excessive cash flow after deducting required funding for positive NPV

projects from operating cash flow (Jensen, 1986). Acharya, Almeida and Campello (2007) suggest that financially constrained firms prefer higher cash to lower debt to hedge future investments against income shortfalls.

In examining the issue of over-leverage or under-leverage, the basic objective of optimising capital structure is to decide on the proportion of various forms of debts and equities that maximises firm value. Trade-off theory, suggested by Kraus and Litzenberger (1973) and Myers (1984), reflects the idea that a company chooses how much debt finance and equity finance to use by balancing costs and benefits, thus leveraging up until the optimal leverage level (Korteweg, 2010). The implication is that shareholder returns of a firm can be improved when the firm's leverage moves towards the theoretical optimal level and should be decreased (or at least adversely affected) when it deviates from the optimal level. Nevertheless, there has been little discussion on such under-levered or over-levered issues on equity returns across industries. Empirical evidence is also hardly found to test such a phenomenon of non-linearity in the Malaysian market. Therefore, the second objective of this study could contribute by identifying the possible existence of such optimal levels of leverage, which would have a significant impact in financing and investment strategy adoptions by market participants.

Furthermore, as a new branch of capital structure, debt maturity structure has yet to receive as much attention as the debt-equity mix, especially in the studies of its relationship with stock returns. Further refining of leverage levels to different maturity in the study of such relationships could contribute to the existing literature. This study tries to seek a possible explanation for the mixed results of previous leverage studies by adopting sector specific analysis and by disaggregating the total leverage into long maturity and short maturity. If there is discrepancy between the impacts of long-term debt and short-term debt, investors or financial policy makers should be more aware of the choices of debt maturity other than purely focusing on the conventional debt-equity capital structure decisions.

The analysis throughout this study is based on industry classification. Leverage is associated to the industry that the firms operate in (Modigliani and Miller, 1958; Mackay and Phillips, 2005). However, prior studies of relationships between leverage and stock returns seldom addressed the issue from this perspective. Failure of taking into consideration the factor of industry might provide misleading results as different industry characteristics could be important in explaining the firm's performance which may be highly correlated to the relation between returns and leverage (Muradoglu and Sivaprasad, 2012).

To date, published research on capital structure has tended to focus on developed markets. Though some of the intuitions of capital structure theory are portable across countries, country-specific research matters (Mohamad 1995; Booth et al., 2001) because researchers generally agree that there are differences in the capital structures among countries. Thus, a deeper understanding of the effects of institutional differences is important (Rajan and Zingales, 1995). Institutional structures, tax policy, regulation, etc. may largely explain the different degrees of leverage of firms in two countries. This study aims to provide some reliable evidence of the effect of leverage to inspire further relevant studies in Malaysia. While there are capital structure studies available on the Malaysian market throughout the years, to the best

knowledge of the author, there is still no publicly available discussions on the above-mentioned specific issues.

1.4 Research Questions and Objectives

The main interest of the study is to investigate the effects of firm leverage on the direct returns to shareholders. In a nutshell, the main interest of this thesis centres on the question of how leverage would play a role in influencing stock returns under different conditions, and how such role would be useful for the investment and trading strategies in the Malaysian stock market. The research questions arisen are:

- (i) Do cash flows improve the leverage-to-stock returns relationship in Malaysia? In other words, would the combined effect or indirect effect through cash flows be significant in the determination of stock returns in Malaysia?
- (ii) Does a common optimal level of firm leverage exist in the determination of stock returns across different industries in Malaysia?
- (iii) Can firm-level leverage maturity explain the variations of stock returns across major industries or sectors in Malaysia?

This study concentrates on the empirical relations between stock returns and firm leverage and the objectives of this study are:

- (i) To examine the effect of interactions of different cash flows and leverage in influencing stock returns in Malaysia.
- (ii) To determine the possible existence of common optimal level(s) of leverage in determining stocks returns in various sectors in the Bursa Malaysia.
- (iii) To examine the significance of firm-level short-term and long-term leverage to the stock returns across major sectors in Malaysia.

1.5.1 Significance of the Study

In view of the 2012-2015 outbreak of global financial crisis, leverage has become a renewed central focus in growth story, whether it be in micro or macro levels. This study contributes to the literature as there is still insufficient empirical evidence on the usefulness of leverage in the determination of stock returns as compared to using other popular variables like earnings yield, book to market, size, etc. This study is thus aimed at providing support to the views on how leverage should be treated as a main consideration in firm-level financing and investment decisions. The market could be more careful in response to the different leverage decisions adopted by firms within certain industries.

The significance of this study arises from detailed studies in such areas for the Malaysian market, as one of the important developing financial markets, are not widely available as compared to developed markets such as the U.S. and Europe. A relatively thorough analysis across major sectors in Bursa Malaysia should be able to provide some empirical guidelines for Malaysian market participants in making investment and financing decisions, and for the purpose of future relevant research.

Besides, this study should be able to provide a further understanding of leverage through different considerations of cash flow. This helps to explain the general behaviour of the market whether the investors appreciate cash-flow factors when looking at a firms' leverage. The implication is that it could provide an instrument for shareholders to differentiate an opportunistic leverage from a risky leverage. The study also differentiates itself by adopting both total leverage and net leverage in identifying its relationship with stock returns, which is not commonly emphasised by other studies.

Last but not least, if empirical evidence is found for the existence of optimal leverage level in its relationship with stock returns, market practitioners and researchers in Malaysia who either love or dislike leverage should handle the critical level of leverage with greater care. A direct implication is that if this threshold value of optimal level is verified, the financial managers should increase debt levels in the low debt regime of debt ratio lower than the threshold and vice versa. Investors could be more alert when firms move too far from the optimal thresholds. The optimal level of leverage, if found relevant, would help control overleverage problems that are detrimental to firm and investment value.

Following this introduction, Chapter 2 attempts to review the studies, ultimately motivating the interest of the relationship of firm-level leverage and stock returns. Chapters 3 to 5 attempt to address the first to the third objective respectively. Chapters 3 to 5 focus on data and variables determination, testing methodology, and result discussions. General conclusions and recommendations are drawn in Chapter 6.

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