

DETERMINANTS OF CAPITAL STRUCTURE IN ASIAN FIRMS: NEW EVIDENCE ON
THE ROLE OF FIRM LEVEL FACTORS, INDUSTRY CHARACTERISTICS, AND
INSTITUTIONS

Thesis Submitted for the Degree of Doctor of Philosophy

At the University of Leicester

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September 2014

DETERMINANTS OF CAPITAL STRUCTURE IN ASIAN FIRMS: NEW EVIDENCE ON THE ROLE OF FIRM LEVEL FACTORS, INDUSTRY CHARACTERISTICS, AND INSTITUTIONS

Abstract:

This thesis investigates the determinants of capital structure in Asian countries. The aim is to provide new evidence on the role of firm's specific factors, industry characteristics and institutions on firms' capital structure decision. The Asian markets have significantly benefitted from economic expansion and have experienced a series of financial system reforms in the recent decades. The rapid growth attained by the Asian economies, was also accompanied by periods of financial turmoil. These factors collectively call for investigating the factors affecting the decision of capital structure particularly in the last decade. The study thus provides new empirical evidence on the determinants of capital structure in Asia during the period 2006-2011.

The result reveals that financing patterns of firms can be driven by their own firm characteristics, industry nature, general economic condition and institutional attributes. Firstly, profitability, administration expenses, firm size, firm liquidity, market-to-book ratio have shown significant association to firm's capital structure decision in Asia. There empirical evidence supports the existence of dynamic capital structure, which is in line with trade-off theory. During the recent financial crisis (2008-2009), the results show no evidence of adjustment to target capital by Asian firms. In general, the firm-specific factors have a more powerful explanation on firm's financing decisions in mature industries compared to growing industries. In particular, firms from technology or healthcare sectors, most of these types of firms are still young and at start-up stage in Asia and they hardly rely on debt finance with lesser credit record, higher R&D expenses, higher risk and more future uncertainties. The institutional and macroeconomic factors have a more significant impact on a firm's long-term financing decision compared short-term financial decision. In Asia, the firms tend to excessively rely on short-term debt to meet long-term financing requirement under a weaker institutional environment.

Acknowledgement:

So far, undertaking PhD degree is one of the most challenging decisions in my life. It has been a truly life-changing experience for me and my PhD thesis would not possible to be completed without the support, encouragement and guidance that I received from many important people in my life.

Firstly, I am grateful and would like to sincerely thank my two supervisors Professor Meryem Duygun and Dr Mohamed Shaban for their guidance, understanding and patience during my PhD studying period. They also encourage me to not only learn a lot of knowledge in academia, but also they help me to be an independent and critical thinker on the way of doing academic research. I highly appreciate all their contributions of time, ideas, comments, suggestion and any little helps to both my study and personal life. Especially, Dr. Mohamed Shaban, I would like to thank you for organising training course on econometrics and providing valuable comments in my work, which benefits me a lot during these four years.

I also wish to thank all my family members, my parents, grandparents and other relatives for their unconditional support on my personal pursue. Everything they provide me is my driving force, which allows me to complete my PhD degree with their encouragement, understanding, support, inspiration and great care. In fact, in my mind, any words are impossible to express how much I love and appreciate them in my life.

My PhD dissertation would not have been completed without all my friends' suggestions and support. I am very obligated to many of my colleagues, friends and flatmates who support me in both academic and personal life aspects. I'm very certain that I could not survive in the duration of my PhD period without their help and accompany.

I would like to thank the Research Programmes Administrator Mrs Teresa Bowdrey, the PhD directors Dr Sarah Robinson, Professor Joanna Brewis and Dr Dimitris Papadopoulos who were always so helpful and provided me with their assistance and understanding throughout my dissertation.

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Abbreviations:

TDBV	Total Debt Ratio in Book Value
LTD	Long-term Debt Ratio
STD	Short-term Debt Ratio
TDMV	Total Debt Ratio in Market Value
PROF	Profitability
TANG	Tangibility
SIZE	Firm Size
ADMIN	Administration Cost
LIQUID	Liquidity
TAX	Effective Income Tax
DIV	Dividend Payout
MTB	Market-to-Book Ratio
GROWTH	Growth Opportunity
RETURN	Stock Performance
OLS	Ordinary Least Square
FE	Fixed-Effect Model
GMM	Generalized Moments of Method
FGLS	Feasible Generalized Least Square
Std Error	Standard Error
OECD	Organization of Economic Cooperation and Development
IMF	International Monetary Funding
Listed	Publicly Held Firms
Unlisted	Privately Held Firms
Small (S)	Small-sized Firms
Medium (M)	Medium-sized Firms
Large (L)	Large-sized Firms
Industry Dummy	Dummy Variables by industry
CH	China
HK SAR	Hong Kong Special Administration Region

IND	Indonesia
MAL	Malaysia
SGP	Singapore
THA	Thailand
Basel Requirement	Third Basel Accord (Regulatory Standard on Bank)
WTO	World Trade Organization
FDI	Foreign Direct Investment
AR1/AR2	First-/Second-order Autocorrelation
POT	Pecking Order Theory
DPOT	Dynamic Pecking Order Theory
NPLs	Non-Performing Loans
SMEs	Small and Medium-sized Enterprises
ICB	Industry Classification Benchmark
SOEs	State-owned Enterprises
R&D	Research & Development
JSX	Jakarta Stock Exchange
HKEX	Hong Kong Stock Exchange
SHSE	Shanghai Stock Exchange
SZSE	Shenzhen Stock Exchange
KLSE	Kuala Lumpur Stock Exchange
SET	Stock Exchange of Thailand
SGX	Singapore Stock Exchange
GEB	Growth Enterprise Board
DFIs	Development of Financial Institutions
SC	Security Commission
DBR	Disclosure-based Regulation
GLICs	Government Linked Investment Companies

Chapter 1: Introduction:

Since the introduction of Modigliani and Mille (1958) capital structure irrelevance theorem, the discussion of firm's capital structure decision has expanded exponentially to enrich the literature with many seminal theoretical and empirical studies. The firm's capital structure is one of vital corporate financing decisions. Changing the firm's financial mix may affect the firm's value, return on investment, probability of bankruptcy and shareholders' wealth. The importance of capital structure may be viewed from two angles. First, at micro-level, how a firm takes advantage of raising funding from various financing channels is one of the crucial financing decisions that influence firm's survival, daily operations and future growth potential. Moreover, a firm's capital structure reflects all of firm's debt and equity obligations, which effectively presents an overview of risk and cost of financing decisions. Second, at macro-level, a firm's capital structure decision may be affected by overall changes in the business and economic environment. Therefore, firm managers have to make financing decisions by not only considering the firm's own circumstances, but also the factors of economic growth, government regulation, social trends, development of capital markets, industry dynamics etc. The last two decades has witnessed a considerable number of studies focussing on the determinants of capital structure decisions at firm level. Some of firm-level factors have been demonstrated to have influence on capital structure decisions (i.e. profitability, tangibility, firm size, growth opportunity, market-to-book etc.). However, the effect of these factors seems to vary from country to country and is subject to exogenous factors (such as macroeconomic environment, institutions, culture, development of financial markets etc.).

Modigliani and Miller's (1958) seminal paper (hereafter M&M, 1958) has ignited a wide spread of debate in the literature after them developing their capital structure model under a

perfect market. M&M's (1958) main argument is that the capital structure decision has no influence on corporate gains when capital markets are perfect and there are no effects of tax. However, their opponents have argued that some of their fundamental assumptions are unrealistic and do not bear a resemblance to real life conditions. That is M&M's 1958 theorem does not hold, and that the capital structure of a firm does matter to its wealth. Miller (1988) has relaxed some of the rigid assumptions held by M&M (1958) and suggested that a firm's value can be affected by financing choices in the following cases: 1) the presence of different tax regimes existing; 2) the presence of an asymmetry of information problem between firm management and investors; 3) agency cost; 4) other frictions (such as cost of financial distress). Miller's (1998) propositions in turn have stimulated the birth of several mainstream theories that aim to discuss the issue of capital structure.

The Pecking Order Theory (POT), originated by Myers and Majluf (1984), argues that there is no optimal capital structure for each firm that will maximise the firm's values. The managers of the firms will finance new investment projects using a pecking order mechanism (financing hierarchy) that starts with using internal financing, then turns to the issuing of less risky debts and would then think to issue equity as a last resort due to the existence of information asymmetry and a higher level of risk. One of the main underlying assumptions of the POT is that firm's managers have a better understanding of the situation of the firm than the investors.

Ross (1977) developed signalling theory to explain a firm's financing behaviours by incorporating private information possessed by managers. Ross (1977) emphasizes the existence of information asymmetry between firm managers and outside investors. He argues that the insiders may have a hidden agenda to send false signals to market so that it would mislead investment decisions for the outside investors in order to maximise their own

benefits. For example, when firms benefit from higher forecasting cash flows and return on equity, then managers would be inclined to expand debt finance, since they do not like to share financial gain with shareholders, and prefer to take on debt and pay less interest to creditors (i.e. lower cost of finance).

Modigliani and Miller (1963) introduced the trade-off theory (TOT) to argue that there is a target debt level that maximises firm value by weighting the benefits of debt against the costs of debt financing. The benefits of debt comprise tax deductions of interest and reduction of free cash flows, which implies that an increase of firm value can be obtained from a high gearing ratio¹. On the other hand, a high gearing comes at a cost to the firm in two forms: 1) financial distress costs (higher probability of bankruptcy), and 2) agency costs (conflict between shareholders and bondholders). According to trade-off theory a firm can afford to borrow up to the point where the tax savings from an extra amount of debt are equal to the costs that come from the increased probability of financial distress. Myers (1984) extends on TOT and elaborates that firms should always remain at optimal debt level. In doing so they should constantly adjust their capital towards the desired optimal level. However, imperfections in capital markets may prevent an instantaneous adjustment. Myers refers to this as the “adjustment cost” and explains that firms tend to divert away from their target capital structure when the adjustment costs are large.

The agency theory developed by Jensen and Meckling, (1976) clarifies that agency problems can take two forms of conflict: 1) between shareholders (principle) and managers (agents) due to the separation between ownership and management, and 2) between shareholders and creditors. The principle-agent problem occurs when there is a misalignment of objectives between managers and shareholders e.g. shareholders are interested in maximising firm's

¹ As the weighted average cost of capital decreases to a certain level by increasing the proportion of debt in the total capital.

value and their wealth whereas managers may be more interested in maximising their own wealth or benefits. In this situation, the managers could transfer firm resources to their personal benefits and not exert sufficient effort to maximise firm value. Jensen and Meckling (1976) suggest that the debt finance acts as a managerial incentive to exert more effort. Hence it will reduce free cash flows that a manager may use it in pursuing personal benefits and thus mitigate managerial interests. The agency cost, or the conflict between creditors (debt holders) and equity holders, exists when the firm shifts its investment plan to a riskier one after the issuance of debt. This in turn shifts wealth from creditors to shareholders and may have a detrimental effect on the value of debt.

The equity timing market theory of Baker and Wurgler (2002) challenges both trade-off and Pecking Order Theories. Baker and Wurgler (2002) argue that firms will be inclined to issue more equities when the market values of shares are high and then repurchase equities when the market value lowers. The underlying reason for timing behaviour of capital structure could be related to costs of selection. Hence, the existence of windows of opportunities for firms can be used to reduce overall cost of capital by issuing equity when market conditions are favourable.

There are numerous studies that aim to empirically examine Baker and Wurgler's (2002) assumptions. However, most of the literature seem to focus on providing empirical evidence on Pecking Order Theory and Trade-off theory in developed and developing countries (see, among others, Titman and Wessels (1988); Nivorozhkin (2002); Mazur (2004); Antoniou *et al.* (2008); Noulas and Genimakis (2011) and Sheikh and Wang (2011)). There is scant literature that provides empirical evidence on other capital structure theories (i.e. market timing and agency cost) (see among others, Stulz *et al.* (1996); Deesomsak *et al.* (2004); Kayhan and Titman (2007); Al-Najjar (2011) and Bessler *et al.* (2011)). The scarcity of these

studies is even more severe when it comes to emerging economies. A new wave in the literature departs from investigating the effect of firm-specific factors on firm's capital structure decision and considers instead the changes in firms' external environment (see among others, Demirguc-Kunt and Levine (1999); Nivorozhkin, 2002; DeJong *et al.* (2008); Fan *et al.*, (2012); Joeveer (2012)).

This thesis aims to investigate the dynamism of capital structure and its determinants of firm's capital structure decision from both micro- and macro-level perspectives in six Asian markets. It is motivated by lack of comparative studies on the role of firm-specific, industry level and country-level factors on firm's financing pattern in emerging economies has motivated this thesis. It is considered that it would be valuable to apply a broad set of determinants to firm, industry, and country-level institutional factors in the dynamic Asian economic and financial environment in order to catch different aspects of each level's effect on firm's financing decisions.

This thesis concentrates on the Asian countries of China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand. The high speed of growth observed in the Asian financial sectors played an important role in stimulating the considerable growth that these countries have enjoyed in the last two decades. It is no wonder that the Asian region contained the most dynamic emerging-market regions in the world at this time. However, the supernormal growth came at the price of the presence of weak institutions and a fragile financial sector, as was the case from 1980s to 1990s. The Asian financial crisis in 1997 has urged policy makers to reconsider the structure of financial systems in Asia in order to achieve positive economic outcomes. These six selected markets share several similarities. Firstly, they enjoyed a rapid economic expansion during the past two decades, which has created booming capital markets and attracted massive foreign capital inflows. Secondly, alongside the rapid economic

expansion in the Asian region, the financial systems also have been enhanced in terms of i) market size, ii) liquidity, iii) performance of the banking sector, iv) broadening financial access, v) the widening scope of formal financial system, and vi) the strengthening of regulatory frameworks in order to maintain high and stable economic growth. The growth of equity market capitalisation compared to GDP growth has exceeded the growth of the banking sectors in the some countries (i.e. Singapore, Hong Kong and China) during last few years. The Shanghai stock exchange has become the sixth largest stock exchange in the world, surpassing the Hong Kong Stock Exchange, with 2.3 trillion USD being traded in 2011. Thirdly, there is a large gap between the banking sector and the bond market. The share of bond market development to GDP growth is going up, while the development of the equity market is much slower than would be expected. Finally, the government still has the most influential power in the overall financial market, which further leads to the more serious problem of information transparency. Under such a high speed of economic and financial expansion, the interest of this study extends to investigating the speed which firms in this region are able to adjust their capital structure. This reason is also the main driver for this study examining the impact of country-level macroeconomic development and institutional features on firm's capital structure decision.

The changes in institutional factors such as qualities and settings may have significant influence on firms' financing pattern. These factors can affect firms' bankruptcy costs, agency costs, information asymmetry costs and taxation in a direct or indirect manner. Hence, it is essential to investigate how capital structure decisions might be affected by factors such as: i) ease of accessing funds, ii) information asymmetry, iii) power of law, iv) financial distress cost, v) business environment, and vi) the development of the financial sector, all of which were ignored by most of the existing empirical studies on emerging economies. Thus,

this study aims to fill the current gap by examining how institutional features affect firm's capital structure decisions in these countries.

1.2. Research Objective and Contribution:

The main objective of this thesis is to examine firm's financing pattern and speed of adjustment in six Asian markets. The study investigates the capital structure decision of listed Asian firms and explores which factors could matter to their financing decision on both micro- and macro-levels during a period of rapid growth and reform. Therefore, the study utilizes the GMM model to estimate the partial adjustment model of capital structure. This approach permits investigation of how firm-level, industry-level or macroeconomic-level factors influence the capital structure decision. In addition, it allows an understanding of the adjustment behaviour of a firm's capital structure decision.

The Thesis aims to answer the following research questions:

1. How will firm-specific factors affect the firm's capital structure decision?
2. Do Asian firms pursue an optimal capital structure? If yes: what is the speed of adjustment given the rapid changes in the economic and financial environment?
3. Do industry characteristics matter in the capital structure decision?
4. How does an industries growth prospect affect the capital structure decision?
5. What is the role of institutions and macro-economic environment in determining a firm's capital structure in Asia?

The contribution of this thesis to the existing literature is threefold. First, it provides new evidence on the dynamic nature of a firm's capital structure decision and its speed of adjustment in Asia in recent years. Second, it is the first study to provide detailed evidence from Asia on how industry factors shape the firm's financing decision by further comparing

between mature sectors² (steady growth) and knowledge-based sectors³ (high growth). Third, it is the first to consider the impact of the remarkable economic growth and rapid changes in regulations and institutions in Asia on the firms' financing decision. It is important to investigate this issue given the series of reform policies that was implemented to strengthen the financial sector stability in these countries.

1.3. The Choice of Methodology:

The Generalised Method of Moments (GMM) of Arellano and Bond (1991) is widely used in the literature for estimating a dynamic model from panel data. Flannery and Rangan (2006) and Huang and Ritter (2009) have also applied the target adjustment model to investigate the dynamism of capital structure decision. There are two GMM estimators, the GMM difference (Arellano and Bover, 1995) and GMM system (Arellano and Bover, 1995 and Blundell and Bond, 1998). In this thesis, the two-step GMM-System estimator is employed. There are five advantages of applying the two-step GMM-system in this thesis. First, the GMM estimator allows econometric problems in panel data with few time periods and many individuals to be addressed. Second, the GMM estimator also corrects for the issue of independent variables not being strictly exogenous. It does this by exploiting the restrictions of linear moment that follow from the assumption of no serial correlation in the errors. Third, due to existence of autocorrelation in the time series and endogeneity in econometric models, the GMM estimation deploys additional instruments by utilising the orthogonality conditions that exists between the disturbances and the lagged values of dependent variables to solve heteroskedasticity and autocorrelation problems within individuals. Fourth, the GMM-System estimator also overcomes the problem of weak instruments found in the GMM-Difference

² Industrials, utility, basic materials.

³ Technology and healthcare sectors.

model. Additionally, it has the advantages of robustness to endogeneity and short panel bias (Greene, 2008). Fifth, the GMM-System two-step takes advantage of one-step residuals to construct an asymptotically optimal weighting matrix. Thus it is considered more efficient than one-step estimators because it controls for the correlation of errors over time and heteroscedasticity across firms in a large sample of data (Roodman, 2009).

1.4. Main Findings of This Thesis:

The findings provide evidence of a dynamic model of firm's capital structure decisions across four debt measures in Asia, which is consistent with trade-off theory. However, during the financial crisis period, the effect of target capital structure turns out to be insignificant. This result also has shown that a firm's capital structure decision is driven by both micro- and macro-level factors. Firm characteristics, industry nature, macroeconomic development and institutional features all matter to a firm's financing decision. At micro-level, firm's characteristics in terms of profitability, size, market-to-book ratio, liquidity, and stock performance are significantly associated with a firm's capital structure decision in Asia. Moreover, the results show that a firm's financing decision varies between mature (steady growing) sector and emerging knowledge-based (high growing) sector firms, especially where there is a large gap for long-term debt across sectors in Asia. Firms from mature industries with more collateral and lower exposure risk usually find it easier to obtain funding. In comparison, the firms from the knowledge-based sector are still reliant on debt finance, with a poorer credit record, higher risk and more uncertainties. At macro-level, our findings indicate that firms tend to take advantage of very short-term banking loans to meet their long-term financing requirement in a weak institutional environment. Moreover, information asymmetry, legal system, business environment and the development of the

financial system influence all factors that are likely to affect the capital structure decision in Asia. The only exception is that cost of financial distress is positively correlated to long-term debt, which is in contrast with trade-off theory. This finding might indicate that bankruptcy law is still less active in the Asian environment and distressed firms are still able to survive to some degree with support from government.

1.5.The Structure of Thesis:

This thesis is organised in eight chapters. Chapter Two reviews literature from firm-, industry- and country-specific perspectives. Chapter Three provides a detailed background of the six selected Asian markets, mainly covering economic growth and development of the financial sector (including the banking sector and bond and equity markets). This chapter also attempts to present a comparison of these countries in terms of social culture and reform of the financial sector. Chapter 4 introduces the sample data and variables from firm-, industrial- and institutional perspectives. This chapter also explains the methodologies (OLS, Fixed Effect and GMM models) used to obtain the empirical results. The empirical chapters are presented in Chapters Five to Seven and reveal the empirical findings of the thesis. More narrowly, Chapter Five focuses on the impact of firm-specific factors on capital structure decision and compares the adjustment speed of debt finance across four debt measures. The robust check by employing dummy variables is also applied to examine the empirical results of the thesis. Chapter Six investigates whether or not, and how capital structure decision changes by industrial factor. In particular, it compares the those traditional mature sectors and growing technology-based sectors in order to determine whether or not these emerging innovative-based sectors could gained sufficient support during economic transition and expansion periods. Chapter Seven examines how country- and institutional factors change the

capital structure decisions of firms in these countries. Chapter Eight concludes the empirical findings. This chapter also provides a summary of empirical findings and resulting policy implications from the perspective of the financing environment and the development of future financial systems in the Asian region. At the end of this section, the limitations of this thesis and suggestions for future research are given.

Chapter 2: Literature Review:

2.1. Introduction:

Over the last few decades, the issue of capital structure has been debated and investigated in a number of studies from both theoretical and empirical perspectives. Modigliani and Miller (1958) ignited a wide spread of debate in the literature after developing their capital structure model under a perfect and efficient market. The M&M (1958) theory argues that firm's capital structure decision is unrelated to a firm's value when market is perfect and there is no impact of taxes. However, their opponents find that some of their fundamental assumptions seem unrealistic in real life. The M&M theorem (1958) does not hold when the rigid propositions imposed are relaxed and firm's capital structure does matter to firm's value. M&M's (1958) theory was just the beginning of a heated debate on the capital structure issue that still takes place. Hence, since its inception, an increasing number of theoretical and empirical studies were conducted to further investigate the effects of capital structure choices on firm value.

Overall, the present chapter aims to review theoretical and empirical literature on the determinants of capital structure from three perspectives; namely firm-specific, industrial-specific, country level institutional-specific. The chapter provides a relatively comprehensive review studies conducted in different countries worldwide with a special focus on studies of the Asian economies in order to perform a comparison with those of developed economies.

The chapter is organised as follows. The first section reviews six mainstream theories and empirical findings from the firm-specific, industrial and institutional-specific perspectives respectively. The second section presents capital structure studies applied to Asian countries. The third section provides a conclusion of this chapter.

2.2. Theoretical Models of Capital Structure and Empirical Literature:

2.2.1. MM Theory Background and Empirical Literature:

The modern theory of capital structure began from Modigliani and Miller (1958) as pioneers to investigate how firm's capital structure works on firm value in a perfect business environment. The M&M (1958) assumes that firm's capital structure decision between debt and equity has no influence on corporate gains when there are no effects of tax and capital market is perfect. However, in real world, Modigliani and Miller's theorem does not hold and different types of firms usually have a variety of capital structure decisions from different perspectives. The theory of M&M (1958) is a beginning of capital structure issue. When the fundamental assumptions are removed, the choice of capital structure becomes an important value-determining factor and capital structure of a firm does matter to the wealth of a firm. Based on M&M theorem (1958), an increasing number of studies are conducted to further investigate the effects of capital structure on firm's value. Miller (1988) has relaxed some of the rigid assumptions according to M&M (1958) and suggested that, a firm's value can be affected by financing choices in several conditions: 1) the presence of different tax regimes exist; 2) the presence of information asymmetries between the firm's management and outside investors are presented; 3) agency costs; 4) other frictions (such as costs of financial distress). Hence, the firm's capital structure could change the cost of capital when many determining factors are taken into account (i.e. tax structure, imbalance of information, costs of financial distress and agency problems). Miller (1998) propositions in turn have stimulated the birth of several strands of mainstream theories from different perspectives to further discuss how capital structure decision has influenced on firm's value.

2.2.2. Pecking Order Theory (POT) and its Empirical Literature:

A) Theoretical Background:

The Pecking Order Theory (POT) originated by Myers and Majluf (1984)'s study that there is no an optimal capital structure under two prominent assumptions. Firstly, the managers are able to get better information about prospects of their company than those outsiders. Secondly, the managers act or consider from the interest of shareholders. Under these conditions, firms usually would rather forego a positive net present value project if they are forced to issue undervalued equity to new investors. It provides a rationale about how the firm makes use of large cash or unused debt to value financial slack. Generally, considering the impacts of risky securities and usage of information, the managers of firms will finance new investment projects using a pecking order mechanism (financing hierarchy) that start with using internal financing, then turn to issuing less risky debts and would think to issue equity as a last resort.

First, this theory reflects that the firm's managers have a better understanding on the situation of a firm than the investors and they take financing decisions into account from internal funds as the best choice. Second, the managers try to avoid a higher debt level in a situation of poor performance so as to avoid undertaking higher risks of debt defaults. Moreover, the debt defaults could further result in job loss for those professional managers. Third, equity financing is regarded as the last resort, those investors do not prefer to invest new equity financing due to existence of information asymmetry and even higher risk level. More importantly, they usually expect more returns to ensure more compensation from new equity financing. The study of Booth *et al.* (2001) has identified the existence of significant information asymmetries that is consistent with Pecking Order Hypothesis, which means that

company managers know more growth opportunities for the company better than the investors.

B) Empirical Literature:

A strand of empirical studies have provided fruitful analysis on examining pecking order theory (POT) and testing its empirical viability (Agarwal and O'Hara, 2006; Chang *et al.*, 2006; Dittmar and Thakor, 2007; Gomes and Philips, 2007; Bharat *et al.*, 2008; Autore and Kovacs, 2009). For instance, Shyam-Sunder and Myers (1999) argue that the pecking order theory (POT) has more powerful explanations on a firm's financing behaviours than trade-off theory. Their study also finds out that pecking order theory (POT) is more supportive for those large firms since there are less asymmetric information problems in larger firms. However, some conflicting results shed doubt on the capacity of pecking order theory (POT) to explain capital structure behaviours. For example, Frank and Goyal (2009) find out that the issuances of net equity track more closely with financing deficit than issuances of net debt, which is a contrary to pecking order theory (POT). Moreover, their study also has shown that external financing is heavily used than internal funds, and the equity finance gradually plays an increasingly important role.

In this section, some empirical findings from existing studies would be included in order to examine how powerful pecking order theory (POT) is to explain capital structure decision by applying various types of variables.

a. Profitability:

There is a large amount of studies that have provided evidence to support pecking order theory (POT) in many empirical studies (i.e. Titman and Wessels (1988), Wiwattanakantang (1999); Nivorozhkin (2002); Chen (2004); Crnigoj and Mramor (2009); Deesomask *et al.*

(2004); Voulagris *et al.* (2010); Akhtar (2005); Chen and Strange (2005), Huang and Song (2006); Antoniou *et al.* 2008; Daskalakis and Psillaki (2008); Al-Najjar (2011); Nunes and Serrasqueiro (2011); Sheikh and Wang (2011)). A negative relationship between profitability and leverage not only shows that a more profitable firm prefers to make more use of internal capital, rather than external capital, but also this finding indicates a fact of higher cost of external finance since the existence of information asymmetric problem and costs of bankruptcy for external finance.

b. *Asset liquidity:*

The firms with more current assets are expected to have more internal capital that can be used. As the prediction of pecking order theory (POT), the firms with a high level of liquidity are supposed to borrow less due to the preference of internal capital. Therefore, it is expected to have a negative relationship between liquidity and leverage ratio. Rajan and Zingales (1995); Bevan and Danbolt (2002); Suto (2003); Deesomsak *et al.* (2004); Viviani (2008); Sheikh and Wang (2011) have demonstrated that the firms with more abundant liquidity are less dependent on debt finance. Mazur (2004) also demonstrated that this correlation is especially significant among those firms with dividends paying.

c. *Firm size:*

The pecking order theory (POT) has indicated that the problem of information asymmetry is much less in larger companies than those smaller companies, so the larger firms are supposed to have more equity issuance. In other words, the larger firms tend to provide more information to lenders than those smaller ones. As a result, we can expect a negative relationship between firm size and debt ratio. Chen and Strange (2005) have demonstrated

that firm size has a negative effect on book value of the debt ratio in China due to a more reliable credit from government support for those state-owned banks. Rajan and Zingales (1995); Timan and Wessels (1988) and Mazur (2004) also found evidence to support a negative hypothesis between size and leverage. Chen (2004) has shown there is a negative relationship between long-term debt and firm size, which presents that the larger firms would like to have better reputation and attraction of capital gains in bond market due to the lower bankruptcy cost.

d. Growth opportunity:

The firms with greater growth opportunity are supposed to have higher requirements of funds, thus, it can be expected to borrow more. Bevan and Danbolt (2002); Crnigoj and Mramor (2009); Daskalakis and Psillaki (2008); Noulas and Genimakis (2011) found that growth expectation has a positively correlated to total debt. Voulagris *et al.* (2004) found that growth opportunity significantly affects capital structure decisions through higher use of short-term debt. Moreover, it further confirmed that the difficult access to capital market and long-term borrowing results in higher use of short-term debt. In addition, Crnigoj and Mramor (2009) also suggest that the effect of growth rate on leverage is smaller in small firms.

e. Tangibility:

According to the prediction of pecking order theory (POT), the firms with more fixed assets are supposed to issue less debt since internal capital is preferred. What is more, firms holding more tangible assets will be less prone to asymmetric information problems, thus are less likely to have debts. Therefore, tangibility is inversely related to capital structure decision. Besides, many existing findings are consistent with our prediction (Chung (1993); Walsh and

Ryan (1997); Booth *et al.* (2001); Bauer (2004), Mazur (2004); Daskalakis and Psillaki (2008); Crnigoj and Mramor (2009); Kaadeniz *et al.* (2009); Sheikh and Wang (2011)). Moreover, the findings in Crnigoj and Mramor (2009)'s study also present that the effect of tangibility of assets proved to be less negative in small firms, suggesting that collateral assets probably play a more important role for firms than those medium-sized and large firms.

f. Country-level effect:

The country-level determinants could affect firm's capital structure in direct and indirect aspects. In terms of direct impact, since the Pecking Order Theory (POT) states that the more internal funds and lesser investment opportunities lead to less external finance (less debts). Moreover, higher adverse selection costs also could result in higher debts. Accordingly, lower information transparency and sharing, weaker disclosure and enforcement standards should result in higher firm's debts. In terms of indirect impact of country-specific determinants on firm's capital structure, if country attributes are substitute (or complementary) for adverse selection costs, the firm-specific factor could affect firm's capital structure decision through the country-level attributes.

2.2.3. Trade-off theory and Empirical Literature:

A) Theoretical Background:

Modigliani and Miller (1963) introduced the trade-off theory (TOT) developed and argued that there is a targeted leverage level to maximise firm values by weighting the benefits of debt and costs of debt financing. The benefits of debt comprise tax deduction of interest and reduction of free cash flows, which implies that an increase of firm value comes from a higher gearing ratio. Modigliani and Miller (1963) proposed that firms are supposed to use

debt finance as much as possible as consideration of tax-deductible interest payments. Also, the value of an indebted firm exceeds that of an unindebted firm, and its excess equals to the present value of tax savings that arises from the use of debt. On the other hand, this mode of finance is not free costs, the benefits of higher leverage ratios can also be offset by the cost of financial distress. The higher gearing comes at cost to the firm in two forms 1) the expected financial distress costs (higher probability of bankruptcy) and 2) agency cost (conflict between shareholders and bondholders). Two types of bankruptcy costs are presented in two ways, one is direct and another one is indirect. Direct bankruptcy costs include fees of lawyers and accountants, other professional fees, the value of managerial time on administering bankruptcy. The indirect costs include lost sales, lost profits, and the possibility of inability to obtain credit. Warner (1977) finds out that the ratio of direct bankruptcy costs to the market value of the firm appears to reduce as an increase of firm value, and the cost of bankruptcy is approximately one per cent of the market value of the firm prior to the bankruptcy. Furthermore, his finding also has shown that direct costs of bankruptcy (i.e. legal fees) seem to decrease as a function of the size of bankrupt firm. In terms of indirect financial distress cost, it refers to the reduction of impaired service and loss of trust with customers and suppliers.

On the whole, trade-off theory (TOT) can be stated that there is an optimal capital structure that is able to maximise firm value in various forms and firms borrow up to the point where the tax savings from an extra amount of money in debt are exactly equal to the costs that come from the increased probability of financial distress. The more profitable firms should make more use of debts in order to increase tax benefits from deduction of financial charges on debt. However, the excessive level of debt will increase the degree of risk of company bankruptcy. Based on this theory framework, Myers (1984) extends on TOT and elaborates that firms should always stay at optimal debt. In doing so, the firms should constantly and

gradually adjust their capital structure toward the desired optimal debt, which maximises the firms' value. At the same time, this theory highlights a deviation from this target level of debt and pushes firms to adopt an adjustment process towards this optimum. However, imperfections in capital markets may prevent an instantaneous adjustment. Myer (1984) refers this as "adjustment costs" and explains that the firm's divert away from their target capital structure when the adjustment costs are large.

B) Empirical Literature:

a. Business Risk:

The risk factor is one of the most influential factors on financing choices (Kjellman and Hansen, 1995). Based on trade-off theory, the higher risks could be more likely to cause a higher possibility of bankruptcy. The investment with a higher level of business risks is likely to choose equity finance or internal finance, instead of debt finance in order to avoid higher distressed cost. Hence, a negative relationship is expected between business risk and leverage in trade-off theory. Numerous studies show that there is a consistent result with this prediction. Qiu and La (2010) suggested that an inverse relationship is shown between debt ratio and business risk for those indebted firms, which also indicated that the leveraged firms are concerned more about cost of issuing new securities rather than the tax advantage of debt finance. In contrast, Suto (2003) and Huang and Song (2006) have presented a positive relationship between business risk and debt ratio. Suto (2003) also pointed out that the positive sign between risk and leverage of market value only exists when the stock market is booming. Huang and Ritter (2009) also suggested that firms fund a larger proportion of their financing deficit with net external equity when the expected risk premium is low.

b. *Income taxes:*

According to trade-off theory, the firms have higher income tax; the more debts are issued by a company due to a benefit of tax deduction of interest from debt finance, accordingly, a positive relation is expected. Some empirical studies have shown that there is a positive relationship between income tax and leverage ratio. Huang and Song (2006) show that tax rate has a positive correlation with long-term debt ratio and total debt ratio. Wiwattanakantang (1999) indicated that firms with high taxable income are more likely to have high non-debt tax shields, which stimulate the use of a high debt-equity ratio. On the other hand, firms that face tax exhaustion (i.e. pay little or no tax) are likely to issue less debt because the associated interest deduction is cancelled out by non-debt tax shields.

c. *Profitability:*

Based on the prediction of the model of trade-off theory, it should have a positive relationship between profitability and leverage. More specifically, the more profitable firms are supposed to make more use of debt finance since the risks of bankruptcy are lower; as a result, the firms are able to benefit from more tax advantages from deduction of interest. Qiu and La (2010) pointed out that profitable firms follow pecking order of finance to reduce costs of issuing securities, while unprofitable firms are concerned more about financial distress costs. Mazur (2004) also found a positive relationship between profitability and leverage ratio for those highly profitable firms. This result also confirmed that the highly profitable firms would like to accept financial risk connected with debt financing when the bankruptcy risk is lower (Lucas *et al.*, 1997). In recent years, a new idea has been raised in the latest research studies. In the traditional trade-off model, leverage is determined by trade-off between present value of expected costs of financial distress and present value of expected debt tax shields, both depend on expected future profitability, instead of realised past profitability. Xu

(2012) has pointed out that higher expected profitability corresponds to higher benefits of debt and lower costs of financial distress. His study has provided direct evidence on prediction of traditional trade-off theories by using US manufacturing firm data. Moreover, his result found that expected profitability declines with increase of competition import, and the problem of import competition also alleviates the free cash flow problem (Jensen, 1986).

d. Firm size:

According to trade-off theory, we can expect a positive relationship between firm size and debt ratio, because the larger firms usually have relatively lower risks and costs of bankruptcy. The larger firms are also easier to diversify, have relatively smaller monitoring costs, less volatile cash flows and easier access to credit market (Wiwattanakantang, 1999). In other words, firm size also can be regarded as a reverse proxy of bankruptcy costs. Wiwattanakantang (1999) has indicated that large and well-known firms are easier to obtain loans without provided collateral. Thus, it requires more debt to fully benefit from the tax shield. On the other hand, this positive relationship also can explain how the problem of information asymmetry probably does not decrease as an increase of firm size (Crnigoj and Mramor, 2009); Baharuddin *et al.*, 2011; Noulas and Genimakis, 2011). Nunes and Serrasqueiro (2010) also found out that the influence of firm size on financing decision is significant in a particular industry (i.e. service industry). It has indicated that the larger firms prefer to resort to more debts due to a lower possibility of bankruptcy. Al-Najjar (2011) also has presented a positive relationship between size and capital structure. Marsh (1982) also has indicated that large firms tend to choose long-term debt, while small firms choose short-term debt. Qiu and La (2010) suggested that indebted firms are five times larger than firms that do not use debt financing in Australia. However, both listed and unlisted firms are less reliant on long-term debt due to limited access to capital markets and high transaction costs of issuing debt securities (Cassar and Holmes, 2003; Chittenden *et al.*, 1996). In addition,

many studies provide supportive results (Suto, 2003; Crnigoj and Mramor, 2009; Deesomask *et al.*, 2004; Voulgaris *et al.*, 2004; Akhtar, 2005; De Jong *et al.*, 2007; Daskalakis and Psillaki, 2008; Crnigoj and Mramor, 2009; Bessler *et al.*, 2011; Sheikh and Wang, 2011). Voulgaris *et al.* (2004) also found that the informational asymmetry problem is greater for small firms as there is a lack of financial disclosure and theory owner-manager nature, which is opposite to the findings of Crnigoj and Mramor (2009).

e. Growth Opportunity:

According to trade-off theory, it is predicted that growth opportunity should have a negative relationship in trade-off theory, since it is encouraged to invest in a riskier project for a company with better growth opportunity. Huang and Song (2006) and Antoniou *et al.* (2008) have found a negative relationship between leverage and growth opportunity. One possible reason is that growth opportunity can be regarded as a type of intangible asset, and it could be influenced or damaged by the financial distress or other uncertain factors. In addition, Wiwattanakantang (1999) also figured out that low growth firms are subject to a lower degree of asset-substitution problem, and thus have a higher capacity of using debt.

f. Tangibility:

The trade-off theory predicts a positive relationship between leverage and fixed asset. The firms with more fixed assets as collateral security are easier to finance from external capital, since they usually have enough financial slack or debt capacity. Nivorozhkin (2002) shows a positive relationship between tangibility and long-term debt ratio, which means that tangible assets play a role as collateral for long-term debts to mitigate the lenders' risk. Huang and Song (2006) also found out that tangibility has positive relationships to market total leverage,

long-term debt and total debt ratios respectively. Besides, Many empirical studies have provided supportive results i.e. Timan and Wessels (1988); Rajan and Zingales (1995); Wald (1999); Wiwattanakantang (1999); Suto (2003); Deesomask *et al.* (2004); Akhtar (2005); Jong *et al* (2007); Antoniou *et al.* 2008; Baharuddin *et al.* (2011); Bessler *et al.* (2011); Noulas and Genimakis (2011) that have provided positive evidence between tangibility and leverage. In addition, Antoniou *et al.* (2008) have figured out that the effect of asset tangibility on corporate debt is more prominent in bank-oriented (i.e. France, Germany and Japan) than in capital market-oriented (i.e. the US and the UK) economies.

g. Firm liquidity:

Based on the agency view of trade-off theory, higher liquidity reduces agency costs of debt, while it increases agency costs of equity. More specifically, the firms with more liquidity are supposed to be used or sold without significant loss of firm value as collaterals for a higher debt level. Therefore, based on trade-off models of capital structure, the firms with higher levels of liquidity are regarded to have more liquid assets, which are supposed to have a higher leverage ratio due to their ability to meet contractual obligations on time. Moreover, firms would choose to have a high level of debt in order to benefit advantage of tax saving from issuing debt (Harris and Raviv, 1991).

2.2.4. Agency Cost and Empirical Literature:

A) Theoretical Review:

The agency theory developed by Jensen and Meckling (1976) represents that the appropriate mix of debt and equity is still an important issue in corporate governance even if markets are perfect and there is no impact of taxes. In an organisation, people usually pursue different

profits from their own perspectives. Agency theory clarifies agency problem based on the two conflicts 1) between shareholders (principle) and managers of company (agents) and 2) between shareholders and creditors to discuss how agency costs affect corporate financing decisions (Harris and Raviv, 1991).

As a result of different corporate interests, the conflict does exist between shareholders and managers. The principle-agent problem occurs when there is misalignment of objectives between managers and shareholders. Shareholders are interested in maximising firm's value and their wealth, whereas the managers may be interested in maximising their own wealth or benefits and they usually operate from their personal profits. Under this situation, the managers bear entire costs from their activities of profit enhancement and just occupy a fraction of gains from these activities, which leads the managers do not exert sufficient effort to maximise firm value. What is worse, the managers perhaps transfer firm resources to their personal benefits. However, the debt finance contributes to reduce the losses of conflicts between managers and shareholders. As Jensen (1986) has pointed out, the debt factor reduces free cash flows to engage in other usages for pursuing a manager's personal benefits. In addition, Grossman and Hart (1982) pointed out, in the case of high bankruptcy cost, debt factor as an incentive force professional managers to work harder, make better investment decisions for companies and consume fewer perquisites so as to avoid the loss of control or compromise their reputations. Hence, the more probability there is that bankruptcy can be avoided.

Another conflict comes from debt-holders and equity-holders. In general, the holders of debts (bondholders or creditors) are given a fixed repayment schedule and they have little rights to control the company. In a comparison, the holder of equity has the right to vote for important corporate issues and the board of director. More specifically, the holders of equity are able to participate in those decisions of firm management and operation. They are even entitled to

receive dividends or other distributions, such as preferred stock. For instance, in a high yield investment, equity holders capture most of the gains. However, if the investment fails, debt holders have to bear the consequences due to limited liabilities. Hence, when management engages in projects, shareholders would benefit more than creditors, and then the agency cost of debt financing takes place. To sum up, the agency costs (conflict) does exist between creditors (debtholders) and equity holders when firm shifts its investment plan to a riskier one after the issuance of debt. This in turn shifts wealth from creditors to shareholders and will have detrimental effect on the value of debt.

B) Empirical Literature:

a. *Tangibility:*

Based on the understanding of agency cost theory, it is expected that there is a positive correlation between leverage and tangible asset in agency theory. The more fixed asset is able to diminish agency costs existing between shareholders and debt-holders due to a decrease of bankruptcy cost. Al-Najjar (2011) has demonstrated that there is a positive relationship between tangible assets and capital structure. However, Grossman and Hart (1982), Jensen (1986) and Stulz *et al.* (1996) claimed that a negative relationship existed due to a conflict between shareholders and managers. More specifically, a company with more floating assets, the managers find it easier to spend more beyond the optimal amount. In order to reduce the conflicts between shareholders and managers, the debt level will increase so as to discipline the company management. Nunes and Serrasqueiro (2007) have shown that there is a negative relationship in Portuguese service industries, which indicated that there is a greater explanation agency problem between shareholders and managers and a less relevant agency problem existing between shareholders and creditors. Nivorozhkin (2002) also found a negative relationship between tangible asset and short-term debt, which further presents a

better explanation of agency problem between shareholders and managers. And meanwhile, it is also shown that the tangible asset does not play a role as collateral for short-term debts. Sheikh and Wang (2011) also showed a significantly negative sign, which indicated that firms with less collateralisable assets may choose higher levels to limit their managers' personal benefits and prerequisites.

b. *Growth opportunity:*

According to the conflicts between managers and shareholders in agency cost, the management and shareholders interest are coincidental for firms with a greater growth opportunity, which means there are less agency costs for firms with a greater prospect. Therefore, growth opportunity has a positive impact on leverage, and the issuance of debt contributes to limit agency costs of managerial discretion for firms which lack investment opportunity. Al-Najjar (2011) has found that firms with high growth opportunities tend to face different financing alternatives, and they prefer debt financing for their future investment. Crnigoj and Mramor (2009) also find a positive relationship between growth rate and leverage in Slovenian firms. At the same time, the effect of growth rate is relatively significant for large firms. However, based on the conflict between shareholders and creditors, the firms with a greater growth opportunity should have more options for future investment. If firms choose debt finance, it could forgo this opportunity as the wealth is transferred from shareholders to creditors. And more conflicts and agency cost could arise between shareholders and creditors. As a result, a negative relationship is expected between leverage and growth opportunity. Many existing literatures have demonstrated that growth firms can be expected to rely on internal funds and equity finance, and equity finance is more possible to provide more funding support for firms with large funding requirements and

growth potential (i.e. Nivorozhkin (2002); Deesomsak *et al.* (2004); Huang and Song (2006); De Jong *et al.* (2007); Qiu and La (2010)).

c. *Asset liquidity:*

Based on understanding of conflict between shareholders and managers, the firms with more liquid assets should have more “free cash” for managers, or the firms with more current assets tend to be likely to invest in riskier projects. Thus, there are more agency costs that arise between shareholders and creditors as the wealth transfers from creditors to shareholders. In this way, a firm’s liquidity position should have a negative impact on its leverage ratio. However, Jensen (1986) argues that cash-rich firms should acquire new debt to prevent managers from wasting free cash flows. Besides, managers can manipulate liquid assets in favour of shareholders against the interest of debt holders, which would increase agency cost as well. Similarly, Myers and Rajan (1998) argue that outside creditors limit the amount of debt financing to the company when agency costs of liquidity are very high. De Jong *et al.* (2007) suggest that most of significant negative coefficients exist in those advanced economies, while there is limited significant result in developing countries. Mazur (2004) also pointed out that the leverage of big companies is negatively influenced by liquidity.

d. *Profitability:*

Based on the understanding of the agency problem, the more profitable the firm, the less agency problem between shareholders and creditors it has due to less risk and cost of bankruptcy. Therefore, it is expected to have a positive relationship between leverage and profitability. However, from another perspective to consider, the conflicts between managers and shareholders are relatively lesser for those profitable firms. Chen and Strange (2005)

have shown that the more profitable firms tend to avoid finance by issuing debt as to avoid the constraint between managers and shareholders.

e. Firm size:

In agency cost theory, according to the conflict between management and shareholders, it can be further argued that agency theory suggests that large firms issue more long-term debt in order to have better control management behaviours due to a diluted ownership. In contrast, for those small firms, firm size is expected to have less debt level, because a small number of managers usually occupy a sizeable percentage of the listed firms' stock, which is able to further force management to act in the shareholders' interests. Therefore, a positive relationship is expected as the prediction of agency cost between shareholders and managers. Kjellman and Hansen (1995) provide evidence that financing preference differs by firm size, for example, their finding has shown that smaller firms seem to regard voting control as a vital objective than bigger firms due to the consideration of avoiding control dilution.

f. country-level factors:

As the agency cost suggests, the problem of moral hazard could arise from the divergence of interests between shareholders and creditors. The adjustment of property of the debt contracts could mitigate the agency cost of debt. Hence, enforcing debt contracts and better creditor rights attached to debt contracts could help to against shareholder expropriation. In terms of the agency cost between managers and shareholders, the problem of moral hazards also could be raised from the separation of ownership and manager control. External disciplinary and monitoring mechanisms (i.e. the quality of government, legal rule) could decide the

perseverance of agency cost, since these proxies can be regarded as pressures to correct conflict between managers and shareholders.

2.2.5. Equity Market Timing and Empirical Literature:

A) Theoretical Background:

The equity timing market theory by Baker and Wurgler (2002) challenges both trade-off (TOT) and pecking order theories (POT), which argues that firms time issuance to periods of high market performance. It means that the firms are inclined to issue more equities when market values of shares are high, and then firms will repurchase equities when market value of shares is low. The underlying reason for timing behaviour of corporate finance decisions could be related to the costs of selection. The intention is to exploit the temporary fluctuation in the cost equity relative to other forms of capital. This theory reflects that it is a reverse relationship between market value and capital structure, and it presents that leverage changes are strongly and positively related to their market timing measure. Thus, the capital structure of a firm is the cumulative outcome of past attempts to time the equity market.

Baker and Wurgler (2002) argue that the existence of windows of opportunities allows firms to reduce overall cost of capital by issuing equity when market conditions are favourable. It predicts that firms tend to announce equity issuances after information releases. Hence, since this theory assumes that the degree of information asymmetry is time-varying, the firms will issue equity and build up cash reserves for future periods or hoard financial slack when information asymmetry is temporarily low. Moreover, due to corporate governance problems and lack of company law, share capital has become a “free” source of finance and no binding. Bessler *et al.* (2011) have demonstrated that cash would increase dramatically when a firm issues equity and information asymmetry is temporarily low, which has further suggested that

equity issuances can generate a large amount of money in a short time compared to other financing options.

B) Empirical Literature:

The survey in Graham and Harvey (2001) has revealed that market timing is a primary concern of corporate financial officers, whereas it is not persistent in some countries, especially, the effect on book leverage would disappear in a short time, whereas the impact on market leverage lasts a longer time. Kayhan and Titman (2007) demonstrated a strong relationship between stock price and capital structure decision. Bessler *et al.* (2011) collected 42 countries all over the world to investigate the possibility of issuing equity to increase with less pronounced firm-level information asymmetry. The firms would issue equity when stock prices are high and if a high stock price coincides with low adverse selection.

a. Market-to-Book ratio:

According to the theory of equity market timing, the higher market value firms have, the lower equity cost the firms have to undertake. Kjellman and Hansen (1995) surveyed managers of listed firms, their finding has revealed that the firms tend to be concerned about how to avoid the mispricing of shares to be issued. In other words, the market value of shares does matter to willingness of issuing new shares. Some existing studies have suggested that firms tend to issue equity when they have a relatively high market value. Moreover, it argues that the firms prefer to raise more equity capital to take advantage of the relatively lower costs of equity offered by high market valuations. Chen and Zhao (2005) and Bessler *et al.* (2011) also provide evidence that firms with a higher market-to-book ratio are more likely to issue more equity due to a low cost of external finance. Bougatef and Chichti (2010) also have found a similar result, and their study further explains that when managers believe that market values are irrationally high, they would try to take advantage of this opportunity by

issuing overpriced equity shares. In addition, a more important opinion has been mentioned that existence of information asymmetry and over-optimism of investors for a firm's prospects are likely to result in misevaluation of market value that is at the basis of timing considerations. However, Al-Najjar (2011) demonstrated that there is a positive relationship between market to book ratio and capital structure. Xu (2012) also found that there are insignificant and mixed signs between market-to-book ratio and leverage. As a consequence, the relationship between market-to-book ratio and debt ratio is still uncertain based on existing empirical works.

b. Stock Return:

Kjellman and Hansen (1995) have revealed that security price reactions to the change of capital structure may reflect market expectation of the firm's capability of realising the project to be financed. In other words, the overvalued firms would experience average performance before issuing equity. In contrast, the undervalued firm will have above-average performance as they wait for the price to improve before they issue equity. In general, positive returns will promote firms to issue equity (Yang *et al.*, 2010) and Miglo, A., 2010). Antoniou *et al.* (2008) have suggested that a significant negative effect of share price performance on both market and book leverage, which confirms that managers issue equity after an increase in the market price of their shares. Jegadeesh (2000) also suggests that equity issuers usually have a lower subsequent return. Accordingly, there is supposed to be an inverse relationship between stock return and leverage ratio according to the prediction of equity market timing. Jung *et al.* (1996) documented that greater stock return volatility is associated with higher costs of financial distress and a greater likelihood of equity issuances. Some other empirical findings also have shown similar results (Korajczyk *et al.*, 1991, Loughran and Ritter, 1995).

2.2.6. Signalling theory and Empirical Literature:

A) Theoretical Background:

Ross (1977) originated signalling theory, which is a further development of pecking order theory (POT). Signalling theory explains firm's financing decisions by incorporating the private information possessed by managers. Ross (1977) argues that corporate finance choices could be affected when it takes practical aspect into account that not all investors have equal amounts of information. A firm's managers (insiders) usually know more than ordinary outside investors. Hence, managers are able to fool investors and they may send false signals to the market so that it will mislead investment decisions for those investors (outsiders), since they have additional information about firm performance. In fact, the managers perhaps cover some corporation information to investors in the market in order to occupy more profits (Ryen *et al.*, 1997 and Koch and Shenoy, 1999). For instance, when a firm's future genuinely looks good (i.e. high forecasted cash flows, earnings, net income, and return on equity), then managers will choose to raise financing through debt (or bonds or loan), because they do not want to share financial gain with more shareholders, rather they prefer to take on debt and pay a small interest to creditors and there is almost no risk of default. In contrast, when a firm's outlook looks bad, then managers will choose to raise capital by issuing equity to be able to share the likely losses amongst more shareholders. If they took debt and couldn't repay it, they might default and be forced to go into bankruptcy.

B) Empirical Literature:

a. Dividend:

The firms with more dividend payments provide a signal that firms have the ability to make more use of external funds. If increased dividends signal more expected future earnings, then firm's cost of equity will be lower, the equity is used favourably, instead of issuing debts

(Antoniou *et al.*, 2008). Hence, it is expected to have an inverse correlation between dividend payment and leverage ratio. Rozeff (1982) explains that dividend payments signal a firm's future performance and high-dividend-paying firms benefit from a lower equity cost of capital. Additionally, firms with a higher dividend payout policy perhaps face high levels of risk by creditors, and thus it faces a higher cost of debt. Nevertheless, Guney (2010) argues that the impact among managerial incentives, dividend policy and firm value is complex. The dividend factor serves a dual purpose; it could be viewed as a positive signal of current income that it reduces asymmetric information problem or as a means of mitigating free-cash-flow problems so as to reduce agency problems. On the other hand, it can be seen as a negative signal that firms lack growth opportunity, but a dividend cut may be seen as a positive signal as the firms have significant growth opportunities available.

b. Firm size:

In signalling theory, it is expected to have a positive relationship between firm size and leverage; in addition, the larger firms are likely tend to be more mature and this indicates that the larger firms that turn more to debt give out a signal of vitality to the market. In Nunes and Serrasqueiro (2007), they demonstrate that increasing debt is a way to show vitality to the market and it is related to the size of firms.

c. Profitability:

Different from pecking order theory (POT), it is expected to have a positive correlation between profitability and leverage ratio according to prediction of signalling theory, because an increasing amount of debt companies send a signal of its quality and vitality to the market by increasing theory leverage. Al-Najjar (2011) shows that profitable firms tend to have

more dividend payments, which further provides a signal that firms have the ability to issue external capital.

d. Country-level Determinant:

The lack of corporate information transparency could arise asymmetric information problem. Lambert *et al* (2007) and Verrecchia (2001) have shown that the quality of accounting standards and the quality of disclosure in general could measure the degree of information asymmetry problems.

2.2.7. Empirical Literature: the Impact of Industrial Factors on Capital Structure Decision:

Based on existing empirical literature in issue of capital structure decision, many studies suggest that firm's financing decision does vary across various industries (i.e. Nivorozhkin, 2002); Huang and Song, 2006), etc). Myers (1984) has concluded that the differences of type, risk of asset and external financing requirement result in various average debt ratios across industries. In general, the firms in the same industry group usually operate in a similar way and under the same regulations of government industrial policy (i.e. governmental support, taxes benefits, etc). Moreover, the firms in the same industry usually face similar business risks from firm characteristics due to similar materials and trained-workers in the markets. Joeveer (2012) has revealed that industry factor is the most significant determinant of leverage variation among those listed firms. Also, his finding has indicated that the largest share of listed firms' leverage is explained by industry factors in transitional countries in Europe. Some other studies also have investigated the differences of capital structure in various industries based on the factors of liquidity, tangibility and bankruptcy cost. For example, Huang and Song (2006) have demonstrated that corporate finance decision varies

across industries and regions in China. Al-Najjar (2011) indicated manufacturing firms have more tangible assets as collateral than those firms in the service sector, which they are possible to make use of higher debt levels. Nivorozhkin (2002) also presents that industry factor has an indirectly and potentially impact on firm size and tangibility by the economic nature of companies' main activities. His study also has shown that manufacturing firms have more potentially stable cash flows, long- and short-term debts. However, the findings of Suto (2003) show that the construction, trading and service industries seem to have higher debt levels compared to the manufacturing industry, while plantations and property seem to be less dependent. To sum up, according to these existing literatures, it can be concluded that industry factor as an important factor is possible to change finance decisions, since the firms in the same industry have many similarities in terms of similar risk, support from government and industrial regulations. However, how do firms finance in the same industry, and what is the difference of capital structure decision across industries which are not confirmed across countries, especially in developing and emerging countries.

2.2.8. Empirical Review: Country- and Institutional- factors on Capital Structure:

La Porta *et al.* (1998) have shown there are many international differences in nature and efficiency of financial markets in terms of agency problem solution, degree of investor protection, enforcement of regulations and legal system (i.e. Common Law Origin or civil law origin). Based on his study, DeJong *et al.* (2008) also argues that country factor does matter to the firm's capital structure decision and its effect can be either in a direct or indirect way, since some external economic environment could firm-specific characteristics (i.e. profitability, effective tax rate) and it could further change the cost of capital. Ameer (2013) has shown that the adequate development of financial markets and institutional features also reduces cost of external finance. Gungoraydinoglu and Oztekin (2011) further find out that

firm-level covariates are able to explain two-thirds of the variation in capital structure across countries, and the country-level covariates explain the remaining one-third. Their study also shows that the firms in a country with higher effective tax rates, lower bankruptcy costs and taxes, lower agency cost of debt, higher costs of equity and higher adverse selection costs are all associated with a high level of leverage. To sum up, Many other empirical studies have emphasized the importance of country-factors on financing decision (i.e. La Porta *et al.* (2000); Bessler *et al.* (2011); Fan *et al.* (2012); Joeveer (2012); Ameer (2013), etc.). In next sub-sections, several variables of country- and institutional features would be reviewed and present how do they work on firm's financing decision.

1) Law System:

La Porta *et al.* (1998) has suggested a significant variation in the extent of legal system across countries change financing preferences. Bessler *et al.* (2011) has indicated that pecking order theory (POT) has a better explanation in non-U.S. countries compared to US firms. Also, they document that debt finance is more important for non-US firms as they make use of a relatively higher proportion of debt to cover financing deficit. In contrast, the US firms issue around three times more equity finance. Additionally, his finding also figures out that there are differentiations of financing choices between common law countries and civil law countries. Fan *et al.* (2012) suggest that common law countries have lower leverage, more outside equity and more use of long-term debt. Many studies have figured out that there is better creditor protection in countries with common law legal institutions than those with Continental European civil law institutions (Coffee, 1999; Reynolds & Flores, 1989, 2003; Ribstein, 2005). Besides, La Porta *et al.* (2000) further suggest that firms in a weak institutional or legal protection for investors tend to rely on more internal, debt (usually bank)

financing and it impedes external financing, which is in line with the static pecking order theory (POT).

2) *Creditor Protection and Credit Rating:*

Vaaler *et al.* (2008) also find out that credit risk and protection apparently do matter to the degree of indebtedness. Also, the findings suggest that the differences in legal systems work better than differences in inflation. Furthermore, Ameer (2013) also shows that in countries where rule of law and creditor rights were reformed, firms have faster adjustment speed to their target capital structure compared with those countries without serious institutional reform. In addition, Joeveer (2012) also suggested a negative sign between leverage decision and country credit rating. Even in the same market, the financing behaviours between multinational corporations (MNCs) and domestic corporations show many differences (Kuo and Wang, 2005). This could be explained that international firms probably have more international outsourcing, cultural norms, market liquidity, political and economic consideration.

3) *Macroeconomic Condition:*

The study of Joeveer (2012) has stressed the importance of country's macroeconomic condition on corporate finance decisions, his result figures out that country-specific factor is able to explain the largest share of financing mix decision among those unlisted developed firms. What is more, his study has demonstrated that both Eastern and Western small firms tend to be more dependent on country factor and less dependent on firm-specific factors compared to those larger firms. For instance, there are more future growth opportunities available to firms in economic troughs, in contrast, less growth opportunities at the period of

economic peak. As a consequence, there is a relationship between firm-specific factors and macroeconomic factors, which further have influence on corporate finance decisions. Stulz (1990) concluded that the firms tend to finance with more debts due to the lack of future growth opportunities, in contrast, the firms tend to reserve their spare debt capacity during an economic recession period. From his point of view, the capital structure is positively related to future macroeconomic conditions in terms of future investment and growth opportunities. On the other hand, according to information asymmetry and signalling theories, there is unequal information between insiders and outsiders. As Narayannan (1988) has suggested, because the firms should have more free cash flows and are likely have more underinvestment problems at periods of economic recession rather than economic peak periods, the firms are supposed to issue more equity at economic peak periods in order to avoid missed valuable investment opportunity. As a result, capital structure is expected to reverse related to macroeconomics conditions. Joeveer (2012) has pointed out that the country factor has a stronger influence on those small firms as the smaller firms seem to be more constrained by the financial market. In addition, his finding also indicated that the country characteristics are more significant determinants of financing decision for those unlisted firms.

4) *The Development of Financial System:*

The economic growth and development is also related to development of financial markets (Yeh, 2011). In literature, various measurements of economic development are applied to examine how it influences on financing decision. As Demirguc-Kunt and Maksimovic (1999) have suggested that degree of stock market development has a significant impact on corporate capital structure. Similarly, Deesomask *et al.* (2004)'s study has shown that the development of capital market and debt ratio is found to have a significantly negative

relationship. Besides, the size of the government bond market also plays an important role in both the developing and developed markets. Moreover, the size of bond market is negatively associated with leverage (Fan *et al.*, 2012).

5) *Economic Growth:*

In literature, Stulz (1990) argues that firms tend to finance with less debt in response to future economic growth or investment opportunities. In other words, the capital structure is expected to have an inverse relationship to future economic growth, more specifically, the higher economic growth, the greater is debt capacity reserved for future growth. Chen (2004) investigated the impact of economic development on corporate capital structure decision, a negative effect between economic growth and aggregate debt-to-equity ratio is shown in his study. However, Michaelas *et al.* (1999) finds a positive relationship between GDP growth and long-term debt ratio for those small and medium-sized firms in the UK. Frank and Goyal (2009) also have found GDP as a proxy of growth opportunity is positively related.

6) *Interest Rate and Inflation Rate:*

The interest rate is used to measure how a firm takes risk and borrows from external institutions. Basically, the effect of interest rate and inflation is uncertain in empirical literature. For example, in a country with a more liberalised interest rate policy, more opportunities are able to be generated. Deesomask *et al.* (2004) show that interest rate has a positive relationship with leverage in the post-crisis period, which has indicated that firms have more concerns about the effects of future inflation on their cost of capital, rather than immediate risk of default. Joeveer (2012) has also demonstrated a negative sign between inflation and debt ratio. However, if the interest rate is regarded as a proxy for the cost of

debt, a negative relationship should be shown according to trade-off theory. Besides, the expected inflation is predicted to have a positive sign with debt ratio as a higher reduction of real value of tax.

7) Corruption:

The corruption level has been identified as a key factor in shaping a country's legal system to affect firms' financing behaviours as a result of the impacts of resource allocation (Djankov *et al.* (2003). Demirguc-Kunt and Levine (1999) also have found out that financial system has a correlation with level of corruption. More opportunities in a developed capital market stimulate firms to issue more equity and avoid debt finance. Fan *et al.* (2012) also argue that firms from a country with more serious corruption tend to use more debt, especially short-term debt rather than long-term debt. Their finding further emphasised that the level of debt ratio significantly reduces among those connected firms after the arrest of the corruption bureaucrat in China. All these findings provide an interpretation that level of corruption bureaucrat could determine the development of financial system, and it would further influence a firm's financing pattern.

2.3. Empirical Literature: Firm's Capital Structure in Asian Countries:

Since the Asian financial crisis in 1997, it had severing effect on the region's capital markets with outflows of foreign investments under higher risk. In this way, Raising capital in these Asian countries became higher risk premia by the higher level of interest rates to support currencies. Hence, some empirical studies in the issue of corporate finance have started to investigate Asian firm's financing decision in the post crisis period. For example, Deesomask *et al.* (2004) have investigated the determinants of capital structure of firms operation and growth in Asia-Pacific region, including Thailand, Malaysia, Singapore and Australia. Vaaler

et al. (2008) examine the relationship between credit risk and project finance in 13 Asian countries. Their result shows that the firms tend to have higher debt ratio in the countries with better credit protection in Asia. In terms of the impact of financial crisis on corporate finance decision, Deesomask *et al.* (2004) find out that the factor of crisis appears to influence firm's capital structure decision, which further implies that the changes of overall economic environment have significant influence on corporate finance decisions. His finding has indicated that the firms become more concerned about their survival and bankruptcy risk after the financial crisis. In addition, Driffield *et al.* (2007) have indicated that the distressed firms in a country usually adjust their capital structure faster in the post-financial crisis period when more stringent regulation was implemented, but nevertheless, this trend turns to reversed during the financial crisis period.

These findings yield some insights on patterns of corporate finance in Asian firms. On the whole, many Asian developing markets face serious capital limitations by family connections, massive state or government controlled agencies and local bank capital. More worse, most emerging markets in Asia are also imposed by many constraints (such as, initial share offerings, restrictions on price movements in secondary markets) (Glen and Pinto, 1995; Hasnan, 2000). However, the research so far has been not enough to understand firm's financing decision in Asian region. More importantly, in the past two decades, most Asian countries are experiencing broad deregulation, privatisation and diversification, which contribute to development of capital markets in this region. With the mitigation of constraints and openness of capital market, more studies on the issue of corporate finance behaviour related to differences in firm-specific, institutional and country-factors are expected to further investigate in Asian region.

2.4. Conclusion:

The capital structure decision has largely been investigated from both theoretical and empirical perspectives. However, the majority of the studies have examined the determinants of capital structure decision from firm-, industry- and country-specific perspectives. In terms of firm-specific factors, the firm's financing decision is determined by business risk, profitability, firm size, cash flow and investment opportunity. The existing literature provides substantial evidence for both pecking order theory (POT) and trade-off theory in developing and developed economies (see, among others, Titman and Wessels (1988); Nivorozhkin (2002); Antoniou *et al.* (2008); and Sheikh and Wang (2011). There is scant literature that provides empirical evidence on other capital structure theories (i.e. market timing and agency cost). Similarly, the literature on emerging markets seems to be slim relative the that on developed markets. In addition, there is no consensus in studies of emerging markets regarding which capital structure theory is the most prevailing. The conflicting evidence seems most dramatic when relating the effects of institutional, regulatory and economic factors to the capital structure decision. Thus, more studies are needed to fill the current gaps in the literature, in particular more studies are needed to provide new evidence from emerging countries and more evidence on the effect of exogenous factors (such as regulatory, institutional, economic and cultural factors, and development of the financial sector) on capital structure decision.

As a response to the 1997 financial crisis, Asian countries focused on reforming several institutional aspects (including information transparency, credit protection, business environment etc.). This had a significant positive effect on the efficiency of the capital markets in these countries. The level of development of the capital market is directly related to the company choice of financing i.e. whether or not to follow the pecking order theory (POT). The effect of institutional factors in these countries will provide a substantial and

additional finding to the current literature, especially given the significant and dynamic changes these countries have gone through during last decade.

Appendix-1:

Table 2.1(1): Summary of Literature Review: Empirical Evidences across Capital Structure Theories:

No.	Proxies	Pecking Order Theory	Trade-off Theory	Agency Costs	Equity Market Timing	Signalling Theory
A) Firm-specific Factors:						
1	Profitability	Titman and Wessels (1988), Wiwattanakantang (1999); Nivorozhkin (2002); Chen (2004); Crnigoj and Mramor (2009); Deesomask <i>et al</i> (2004); Voulagris <i>et al</i> (2004); Akhtar (2005); Chen and Strange (2005); Huang and Song (2006); Antoniou <i>et al</i> 2008; Daskalakis and Psillaki (2008); Crnigoj and Mramor (2009); Al-Najjar (2011); Nunes and Serrasqueiro (2011); Sheikh and Wang (2011).	Chittenden <i>et al</i> (1996); Lucas <i>et al</i> 1997; Mazur (2004); Qiu and La (2010), Xu (2012)	managers and shareholders (i.e. Chen and Strange (2005))		Al-Najjar (2011)
2	Tangibility	Chung (1993); Walsh and Ryan (1997); Booth <i>et al</i> (2001); Bauer (2004); Mazur (2004); Daskalakis and Psillaki (2008); Crnigoj and Mramor (2009); Kaadeniz <i>et al</i> (2009); Sheikh and Wang (2011)	Timan and Wessels (1988); Rajan and Zingales (1995); Wald (1999); Wiwattanakantang (1999); Nivorozhkin (2002); Rajan and Zingales; Suto (2003); Deesomask <i>et al</i> (2004); Akhtar (2005); Jong <i>et al</i> (2007); Antoniou <i>et al</i> 2008; Baharuddin <i>et al</i> (2011); Bessler <i>et al</i> (2011); Noulas and Genimakis (2011)	Shareholders and debtholders: Al-Najjar, 2011; Shareholders and managers: Grossman and Hart (1982), Jensen (1986) and Stulz (1990); Nivorozhkin (2002); Nunes and Serrasqueiro (2007); Sheikh and Wang (2011)		
3	Liquidity	Rajan and Zingales (1995); Bevan and Danbolt (2002); Suto (2003); Deesomsak <i>et al</i> (2004); Viviani (2008); Sheikh and Wang (2011))	Harris and Raviv (1990)	Myers and Rajan (1998); Mazur (2004); Jong <i>et al</i> (2007);		
4	Growth Opportunity	Bevan and Danbolt (2002); Bhaduri (2002); Mazur (2004); Voulagris <i>et al</i> (2004); Crnigoj and Mramor (2009); Daskalakis and Psillaki (2008); Noulas and Genimakis (2011)	Wiwattanakantang (1999); Huang and Song (2006); Antoniou <i>et al</i> (2008)	Shareholders and managers: Crnigoj and Mramor (2009); Al-Najjar (2011); Shareholders and debtholders: Nivorozhkin, 2002; Deesomsak <i>et al</i> , 2004; Huang and Song, 2006; Jong <i>et al</i> , 2008; Qiu and La, 2010		
5	Firm Size	Timan and Wessels (1988); Chen (2004); Mazur (2004); Chen and Strange (2005)	Marsh (1982); Wiwattanakantang (1999); Bhaduri (2002)Suto (2003); Crnigoj and Mramor (2009); Deesomask <i>et al</i> (2004); Voulgaris <i>et al</i> (2004); Akhtar (2005); Jong <i>et al</i> (2007); Nunes and Serrasqueiro (2007); Daskalakis and Psillaki (2008); Crnigoj and Mramor (2009); Wu and Yue, 2009; Qiu and La (2010); Bessler <i>et al</i> (2011); Sheikh and Wang (2011); Noulas and Genimakis (2011); Cassar and Holmes (2003); Chittenden <i>et al</i> (1996). Al-Najjar (2011); Crnigoj and Mramor (2009); Baharuddin <i>et al</i> (2011);	Shareholders and managers: Kjellman and Hansen (1995)		Nunes and Serrasqueiro (2007)

Table 2.2(2): Summary of Literature Review: Empirical Evidences across Capital Structure Theories:

No.	Proxies	Pecking Order Theory	Trade-off Theory	Agency Costs	Equity Market Timing	Signalling Theory
A) Firm-specific Factors:						
6	Earning Volatility (Business Risk)		Kjellman and Hansen (1995); Qiu and La (2010); Suto (2003); Huang and Song (2006); Huang and Ritter (2009)		Qiu and La, 2010	
7	Dividend payout					Antoniou <i>et al</i> (2008); Rozeff (1982); Fairchild (2010);
8	Income Taxes		Wiwattanakantang (1999); Huang and Song (2006); Wu and Yue (2009)			
9	Share price Performance					
10	MTB Ratio				Kjellman and Hansen (1995); Chen and Zhao, 2004; Bougatef and Chichti (2010); Bessler <i>et al</i> , 2011; Al-Najjar (2011)	
11	Performance (ROA)	Chen and Yue (2009)				
12	Stock Return (Change in Share Price)				Kjellman and Hansen (1995); Antoniou <i>et al</i> (2008); Marsh (1982); Stulz (1996); Pagano <i>et al</i> (1998); Baker and Wurler (2002); Huang and Ritter (2005), Altı (2006); Miglo. A (2010); Jegadeesh (2000); Korajczyk <i>et al</i> , 1990; Loughran and Ritter (1995)	
B) Industry, Country and Institutional-specific Factors:						
1	Industry-factor		Ferri and Jones (1979); Harris and Raviv (1991); Nivorozhkin (2002); Bhaduri (2002) ;Huang and Song (2006); Antoniou <i>et al</i> (2008); Joeveer (2012); Maksimovic, Stomper, and Zechner, 1999; Nivorozhkin (2002); Mackay and Phillips (2005); Miao (2005); Huang and Song (2006); Al-Najjar (2011); Crnigoj and Mramor (2009)			
	Country and Institutional Factors:					
1	Rule of Law		La Porta <i>et al</i> (1998); La Porta <i>et al</i> (2000); Bessler <i>et al</i> (2011); Antoniou <i>et al</i> (2008); Fan <i>et al</i> (2012)			
2	Ownership Concentration		POT: Kjellman and Hansen (1995); Agency cost: managers and shareholders: Leland and Pyle (1977); Antoniou <i>et al</i> (2008);			
3	Creditor Protection		Antoniou <i>et al</i> (2008); Vaaler <i>et al</i> (2008); Ameer (2013); Kuo and Wang (2005)			
4	Credit Rating		Joeveer (2012)			
5	Macroeconomic Condition		Joeveer (2012); Stulz (1990); Narayanan (1988);			
6	Development of Financial Market		Yeh (2008); Demirguc-Kunt and Maksimovic (1999); Deesomask <i>et al</i> (2004); Fan <i>et al</i> (2012)			
7	Economic Growth (GDP Growth)		Michaela <i>et al</i> (1999); Frank and Goyal (2009); Narayanan (1988); Stulz (1990)			
8	Interest Rate and Inflation		Deesomask <i>et al</i> (2004); Joeveer (2012);			

Chapter 3: Background of Asian Markets:

3.1 Introduction:

A well-developed financial sector may play an important role in stimulating economic growth. The development of the financial sector will alter saving, investment decisions and technology innovation in a country, and thus boost economic activities (Levine, 2005). Countries in the Asian region have been the driving engine of world economic growth during the last two decades. Nonetheless there are significant discrepancies in the level of financial development within these countries. Some common features that are evident among these countries that they have: 1) a highly dominated banking system; 2) an immature legal and regulatory framework; and 3) structural imbalances between regulation and innovation. In Asia, Singapore and Hong Kong represent a success story in terms of financial development, with a vibrant, efficient and international oriented financial and business environment. They are renowned international financial centres. These two developed markets took advantage of British legal, accounting, judicial and regulatory systems and with English as their business language they are leaders in the region. For a long time Shanghai trailed behind the Hong Kong market in terms of market capitalisation and number of listed companies, but recently surpassed Hong Kong to become the number one in Asia in terms of market cap. Indonesia, Thailand and Malaysia have progressed significantly in the last two decades, however, many improvements still need to be made to catch up with the leaders. With the rapid changes and development of the financial markets in these countries, the financial markets have been prioritised over economics as attractive case studies for firm's capital structure decision.

This chapter provides a general background of six selected Asian markets investigated in this thesis, namely China, Hong Kong, Malaysia, Thailand, Indonesia and Singapore. The main

aim here is to trace the economic development of these markets in terms of political & economic status and the development of their financial sectors. This chapter is organised as follows. Sections 3.2 to 3.7 introduce the background of each country respectively; covering their political and economic status, economic development and the reform of their financial sectors. Section 3.8 is some comparisons and offers a summary of 3.2-3.7 at the end of this chapter.

3.2. Background: China:

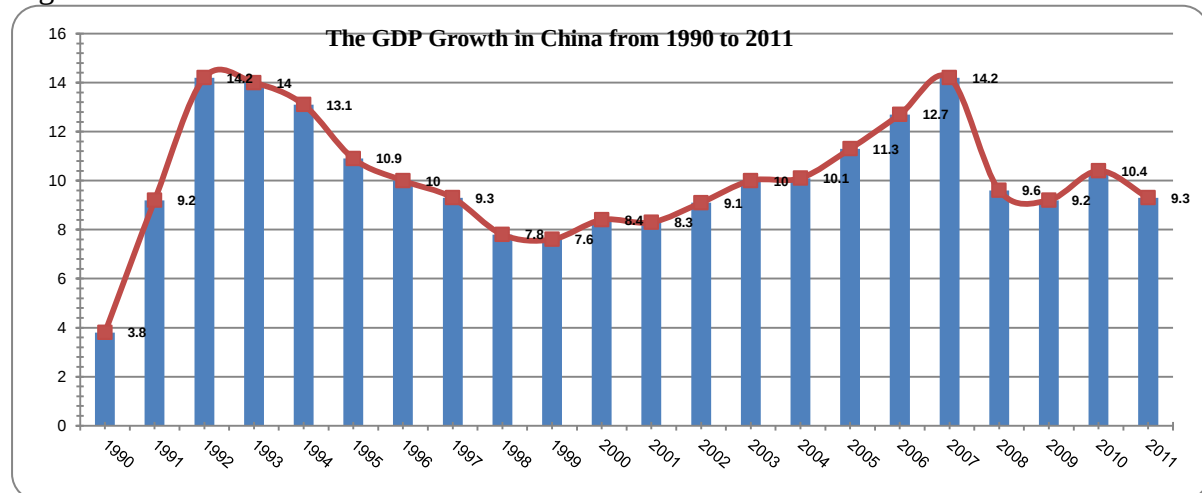
3.2.1. Political and Economic Status of China:

The Mainland China (The People's Republic of China)⁴ is the world's largest populated country and is located in the east of Asia. The economy of China witnessed two decades of rapid growth and industrial modernisation since the establishment of the opening-up policy in 1979. The attractive growth rate of the Chinese economy has stimulated substantial flow of foreign direct investment; this in turn has boosted the productivity at an industrial level as well as in the overall economy. The entry into the World Trade Organisation (WTO) has also expedited the process of transformation of the Chinese economy towards urbanisation, modernisation and liberalisation. The political environment can be described as central, highly controlled and authoritarian due to the single ruling-party (the Communist Party). China has a civil law system, which has structural similarities with the German and French systems. The state-planning economic system still plays the prevailing role in the Chinese economy. The Chinese government still tightly controls the majority of large enterprises and key industrial sectors, including the financial sector. The democratic reform in China has also become one of the most sensitive and influential factors for future economic development.

⁴ Henceforth China in the following context in this thesis.

Many problems in both economic and political spheres still bring challenges and threats to China's economic growth.

Figure 3.1: The GDP Growth in China between 1990 and 2011:



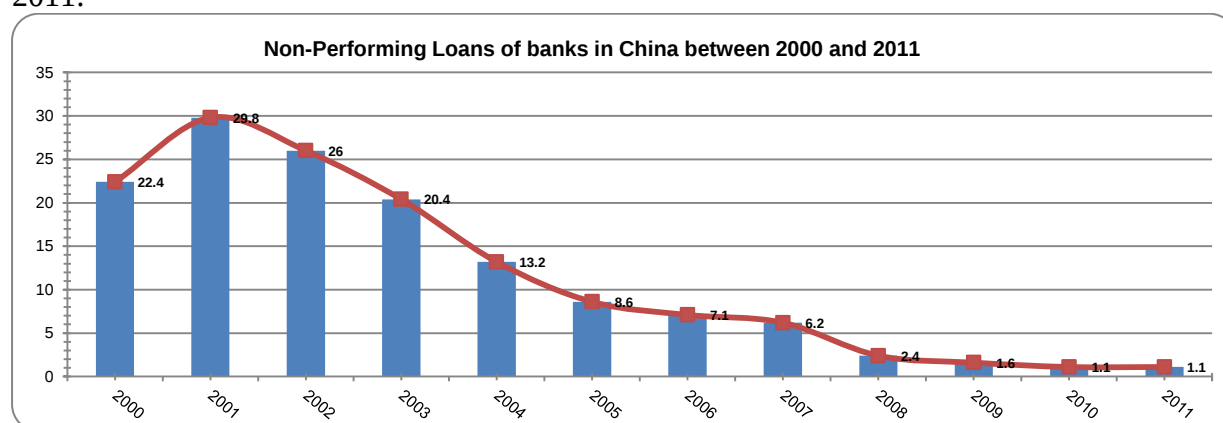
Source from: World Bank

3.2.2. The Financial Sector Development in China:

The financial sector in China has had to undergo significant reform and restructuring in order to meet more complicated and fast-paced global economic competition. From 2003 onwards, a series of policies had been enacted to enhance the stability of China's financial sector, which contributes to strengthening a large section of domestic financial institutions and improve market confidence. The reform in the banking sector consists of the practices such as the cleaning-up of non-performing loans (NPLs), the strengthening of banking supervision and regulation, and financial liberalisation (i.e. quantity and price control and the opening of foreign banks). The commercial banking sector has grown rapidly, which provides more diversified financing channels along with the implementation of reform. As Figure 3.2 shows, the non-performing loans of banks have reduced from the peak of 29.8 per cent in 2001 to 1.1 per cent in 2011. However, the banking system in China is still involved in massive

government interventions and low quality assets. The majority of banking loans rely heavily on collateral. Based on statistics from the IMF (2011)⁵, the top five local commercial banks occupied over 83 per cent of total commercial bank assets, and 30-45 per cent of loans are backed by collateral assets across these top five banks. This report also found that over 20 per cent of the banking system's total loans came from the real estate sector and the demands of local government. In addition, a serious problem of information asymmetry still remains with the implementation of reform. Only these five top local commercial banks and 12 joint stock banks have improved their information disclosure.

Figure 3.2: The Banking Non-performing Loans to Total Gross in China between 2000 and 2011:



Source from: World Bank

Compared to banking sector, the capital market in China as an important alternative financing channel, it is able to provide more capital raising opportunities for Chinese firms. The equity market in China is sizable and fast growing, notwithstanding it is much more underdeveloped and significant potential for growth remains untapped in capital markets since 2006. In terms of bond markets, the Bond Market of China mainly comprises of interbank bond and exchange bond. The interbank bond market is the most dominant market, with more than 97

⁵ People's Republic of China: Financial System Stability Assessment. International Monetary Fund Country No. 11/321. The links: <http://www.imf.org/external/pubs/ft/scr/2011/cr11321.pdf>.

per cent of total bond trading volume. There are mainly four types of bonds, including government bonds, central bank notes, financial bonds, and non-financial corporate bonds. The bond participants are relatively limited in China. According to an IMF Bond Market assessment report⁶, the central banks bill is the largest bond issuer, which had around 46 per cent of total issuance in 2009. The government bonds are the second largest issuers in the China's Bond Market. In general, the main investors in China's Bond Market are the government, commercial banks and insurance companies. The enterprise bonds are much larger and more proactive than corporate bonds in the bond market of China⁷. Worse still, the corporate bond only is traded on the Exchange, which is a tiny bond market within the inter-bank bond market. The result is that the total outstanding amount of enterprises bonds reached 1.9 trillion Dollars in 2012⁸, while the total outstanding amount for corporate bonds is only around 548 billion Dollars. Additionally, China's bond market is generally closed to foreign investors or issuers, and asset securitisation in any form is not yet able to be implemented due to restrictions and underdevelopment of existing laws (i.e. Company law, enforcement of bankruptcy and contract, and current related legal regulatory frameworks). According to the Report of the Federal Reserve Bank of San Francisco⁹, the bond market in China is still underdeveloped. The corporate bond market provided only 1.4 per cent of the total capital raised by corporations in 2006, whereas the commercial banks provided 85 per cent.

⁶ Financial Sector Assessment: China (2011). Financial Sector Assessment Program. Link: <http://www.worldbank.org/content/dam/Worldbank/document/WB-Chinas-Financial-Sector-Assessment-Report.pdf>.

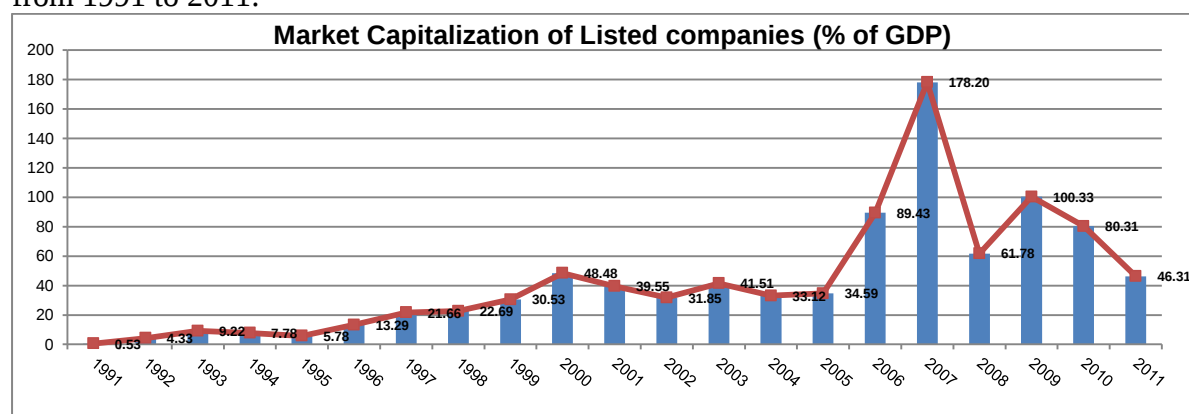
⁷ Enterprise bonds are bonds that are issued by institutions affiliated to Central Government departments. Basically, it is funded by the state or state-controlled enterprises. Corporate bonds can be issued by any company; there is no restriction on the issuance of corporate bond as long as they are able to meet the relevant criteria.

⁸ The Evidence comes from the statistics come from Goldenman Sachs Global Liquidity Management Report China's bond market, First issue in 2013.

⁹ Federal Reserve Bank of San Francisco Economic Letter, number 2007-07, March 16, 2007. Links: <http://www.frbsf.org/economic-research/publications/economic-letter/2007/march/china-corporate-bond-market/>.

In terms of capital equity markets in China, there are two stock exchanges, which are the Shanghai Stock Exchange (SHSE) and the Shenzhen Stock Exchange (SZSE). The main role of the SHSE is to provide financing sources for large enterprises. According to the World Federation of Stock Exchanges, the SHSE exchange has become the sixth largest stock exchange in the world, with 2.3 trillion USD being traded in 2011. The SZSE comprises of the Main Board, the SME Board (2004) and the Growth Enterprise Board (GEB) (2009). The main target of the SZSE is to serve SMEs and contribute to the expansion of cost-effective funding. The SZSE is the sixth largest stock exchange in the world, with around 3 trillion dollars. The Chinese stock shares are also divided into A, B and H shares in the Chinese Stock Exchanges. The A shares are for local investors in the Chinese Stock Exchanges, the B shares are for foreign investors to invest in China's stock exchanges (settled in USD in the Shanghai market or Hong Kong Dollars in the Shenzhen market), and H shares are for Chinese companies listed in Hong Kong Stock Exchange.

Figure 3.3: The Market Capitalization of Listed Companies to GDP (% of GDP) in China from 1991 to 2011:



Data Source: World Bank

3.3. Background: China SAR Hong Kong:

3.3.1 Economic and Politic Status of Hong Kong:

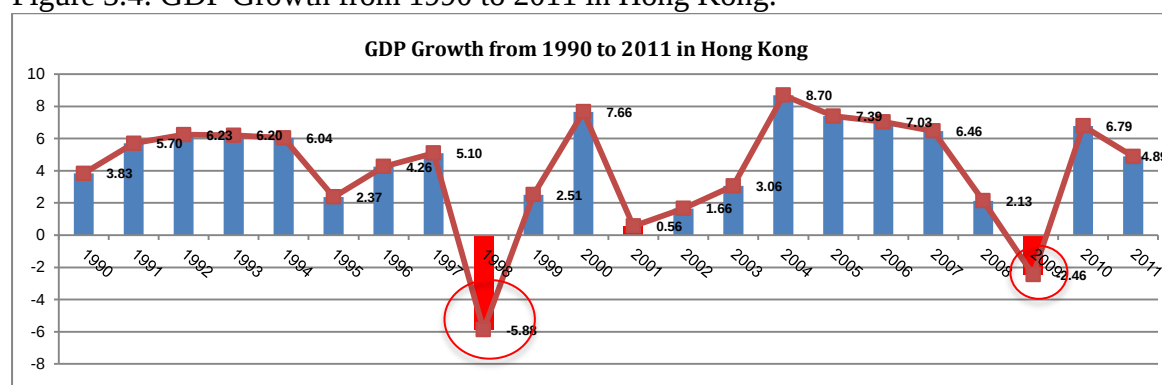
In 1997, Hong Kong re-joined China after more than 150 years of Britain domination. Based on Basic Law, Hong Kong is a Special Administrative Region of China which follows the capitalist system with a “one country, two-systems” policy. It has its own monetary and economic policy that separates it from the law of China and it continues to enjoy a high degree of autonomy. Hong Kong is realistically a laissez-faire capitalistic economy. As the world’s third busiest container port, it has deep-water ports and an excellent location to develop economic ties all over the world even though its natural resources are scarce. Based on its location, the most significant characteristics of Hong Kong’s economy model are free trade, low taxation, minimum government intervention and fair market competition. The law system of Hong Kong is highly influenced by U.K. standards. The common law system is still upheld by an independent judiciary. Over several decades, Hong Kong has maintained a business-friendly, low tax system and its own currency. It is the busiest and most popular venue for regional headquarters or representative offices for multinational companies to manage their business in Asian region, particularly as a portal to China. According to the statistics of the Hong Kong SAR government, around 84 per cent of the population were there for business with China¹⁰. As a result, another important role of Hong Kong is as a gateway to China.

The key pillars of Hong Kong’s economic growth cover trade and logistics, tourism, financial and professional services, and other producer services. Due to heavy dependence on international trade, Hong Kong’s economy is heavily influenced by the stability of the global

¹⁰ Survey of regional representation by overseas companies in Hong Kong (2010), HKSAR Government statistics Department.

economy. As Figure 3.4 shows, there were three main periods of downturn in the last two decades: 1998, 2001 and 2009 respectively. Each of these periods happened due to a global economic recession or financial crisis (i.e. the Asian Financial crisis in 1997-1998, further global economic downturn in 2001, and the global financial crisis with the collapse of the Lehman Brothers in 2008-2009). These global economic recessions created a lack of exports, and it further led to a decrease of investment and employment. Hence, the factor of external economic fluctuation is one of the most influential factors to Hong Kong's economic growth.

Figure 3.4: GDP Growth from 1990 to 2011 in Hong Kong:



Source from: World Bank

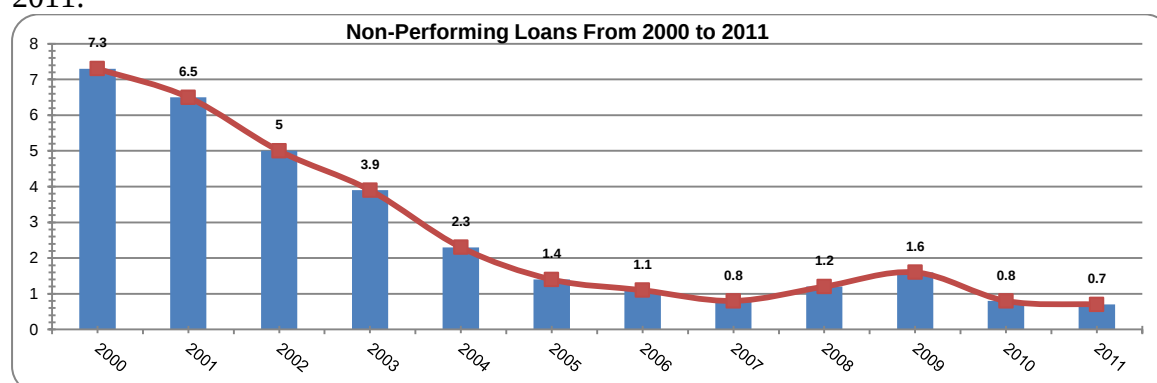
3.3.2 The Development of the Financial Sector in Hong Kong:

In general, the financial system of Hong Kong is advanced and developed in terms of financial products and services, types of financial institution, total assets in the financial sector and its regulation and supervision system. In terms of the banking system, there are three main types of deposit-taking institutions, which are licensed banks, restricted licence banks and deposit-taking companies¹¹. The banking sector in Hong Kong has one of the highest concentrations of banking institutions in the world. There are 146 licensed banks, 21

¹¹ These two types of institutions play different functions in financial activities. The licensed banks conduct full banking services, including the provision of current and savings accounts and acceptance of deposits in any size and maturity. The restricted licence banks mainly take deposits of any maturity of \$500,000 or above. Deposit-taking companies take deposits of \$100,000 or above with an original maturity of at least three months.

restricted licence banks and 26 deposit-taking companies. There were over 1400 local branches in this network at the end of 2010. Moreover, the banking sector of Hong Kong is to liberalise further after 2001 in terms of a rapid growth of the number of private banks due to the removal of all restrictions on the number of foreign banks and the entry criteria for foreign banks. Overall, the banking sector plays a dominated role in the entire Hong Kong financial system in terms of banking asset to total asset in the entire financial sector. Furthermore, the banking finance is still a priority as a major financing platform, though the non-bank borrowing has increased, and has reached similar levels to developed economies such as Japan and the U.K.

Figure 3.5: The Banking Non-performing Loans to Total Gross in Hong Kong from 2000 to 2011:



Data Source: World Bank

The Hong Kong Bond Market is one of the most open currency bond markets in Asia. A variety of local and foreign issuers and different types of products have shown that the Hong Kong Bond Market is relatively developed in terms of the diversity of assets and issuers compared to other selected Asian markets. Moreover, after a close linkage with China, an increasing number of RMB trade and services are allowed to operate in the Hong Kong financial system. There has been a dramatic increase of 55 per cent in the total assets in the bond market after the cross-border RMB settlement scheme was launched in 2009. After

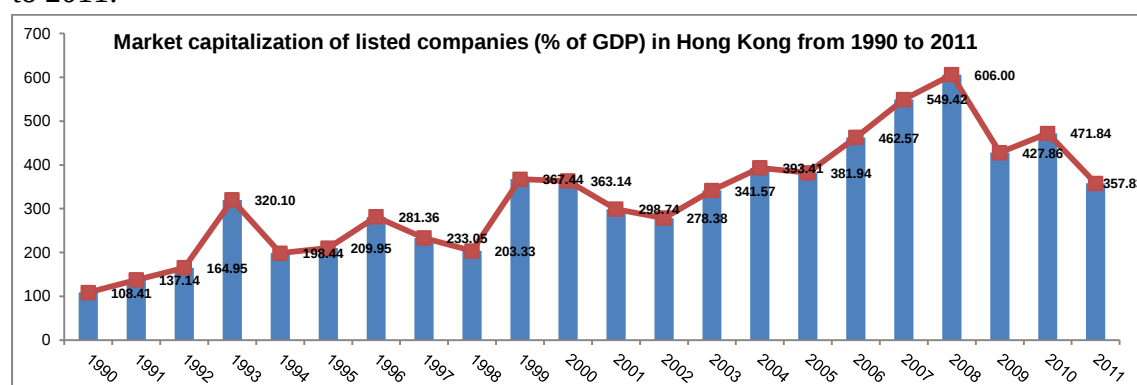
2009 enterprises from China were also allowed to issue bonds in RMB in the Hong Kong Bond Market. The openness of RMB trade further significantly contributes to expand assets in the bond market of Hong Kong. In addition, it also strengthens the integration of China and Hong Kong's economies.

Regarding the equity market in Hong Kong, the security market is operated by the Stock Exchange of Hong Kong (SEHK). Both are wholly owned subsidiaries of the HKEX, which, combined, are the third largest stock market in Asia and the seventh largest in the world. According to the Government Year Book of Hong Kong in 2010¹², there were 1413 companies that listed on the Main board and Growth Enterprises Market of the SEHK by the end of 2010, with a the total market capitalisation of around \$21,077 billion. Since 1997, the government proposed a series of measures to further strengthen the regulatory and operation systems, enhancing the discipline, transparency of the securities and futures markets (Yearbook of Hong Kong, 2000)¹³. The reform consists of a change of listing rules, alternative financial standards of profit requirement, corporate governance practice covering areas of remuneration of directors and senior management, accountability and delegation by the board and communication with shareholders. What is more, a financial report council was established so as to uphold the corporate governance regime and compliances of the listed companies in Hong Kong.

¹² The year book of Hong Kong 2010. The link: <http://www.yearbook.gov.hk/2010/en/pdf/E04.pdf>.

¹³ The yearbook of Hong Kong 2000. The links: <http://www.yearbook.gov.hk/2000/eng/05/index.htm>.

Figure3.6 : Market Capitalization of Listed Companies (% of GDP) in Hong Kong from 1990 to 2011:



Data Source: World Bank

3.3.3 The Integration of Hong Kong and China's economies:

The economic links between Hong Kong and China also play an important role in promoting economic development for both sides. In other words, the introduction and implementation of China's open door policy in 1978 has brought enormous mutual benefits to both China and Hong Kong in terms of the development of economic integration. China and Hong Kong are currently respectively the second and 10th largest trading entities in the world with total visible trade increasing 288 times from 1987 to 2011¹⁴. Hong Kong is the China's fourth largest trading partner following the European Union, the United States and Japan, occupying 8 per cent of the total trade value of China. Also, Hong Kong became the largest source of China's foreign direct investment, reaching \$456 billion at the end of 2010. Furthermore, the range of these investments consists increasingly of business ventures, such as hotels, tourist-related services, real estate, retail trade, infrastructure construction and various communications services.

The direct investment of Hong Kong in China has further promoted openness and development of economy in China. Moreover, the integration also facilitates the change of

¹⁴ Yearbook of Hong Kong in 2011. The Links: <http://www.yearbook.gov.hk/2011/en/pdf/E04.pdf>

industrial structure in China's economy. The deeper integration of China and Hong Kong also brings many benefits to Hong Kong's economy growth. The huge amounts of business activities significantly contribute to development of financial sector. First, the HKSE is a major funding centre for Chinese enterprises. By the end of 2010, 592 companies from China were listed on the Hong Kong stock market, and a total of \$476.6 billion of equity funds were raised by these listed Chinese companies. Second, the business services of RMB have been developing in the banking sector since 2008. By the end of 2010 there were 111 licensed banks that were allowed to provide RMB services business. The total RMB deposits reached USD 53 billion, which accounts for approximately 11.5 per cent of total foreign currency deposits in the Hong Kong market. Third, since the launch of the RMB bond market of Hong Kong in 2007, it has steadily grown in terms of the number of issuers from Hong Kong domestic companies, multinational companies and international financial institutions. Due to the announcement of the RMB trade settlement scheme in June of 2012, 20 provinces and cities from China are allowed to make trade transactions in Hong Kong in RMB. More importantly, the types of RMB financial products also benefit from a rapid growth, such as RMB fixed-income funds¹⁵.

3.4. Background: Malaysia:

3.4.1 Political and Economic Status of Malaysia:

Malaysia is located on the Malay Peninsula of Southeast Asia. From the 18th to 19th centuries, Malaysia was a colony of the UK. In 1957, Malaysia became an independent country from the United Kingdom. Malaysia is a multi-ethnic, upper-middle-income country and a

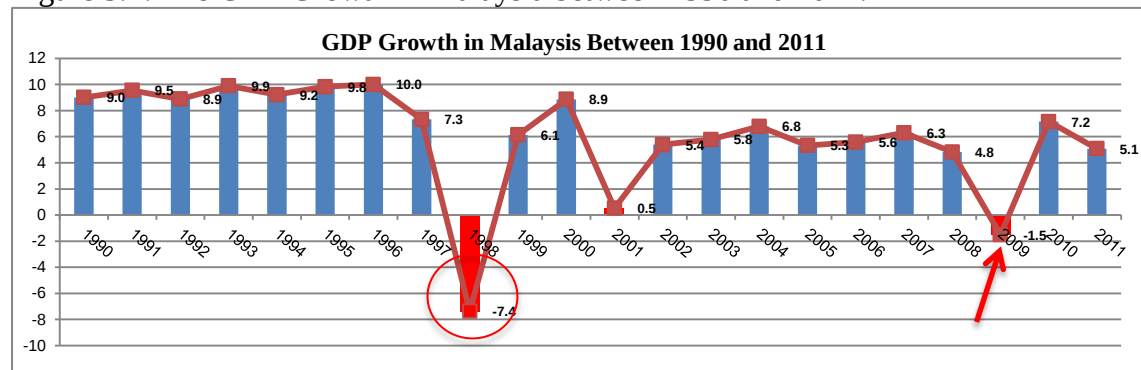
¹⁵ All these statistics come from yearbook of Hong Kong in 2012. The link is as followings:
<http://www.yearbook.gov.hk/2012/en/pdf/E04.pdf>

constitutional monarchy¹⁶. The legal system is mainly based on a common law system that is highly influenced by the British legal system. Similar to most Asian colonial countries, in order to largely abandon dependency on the export of primary natural resources, a series of modernization, industrialization and economic growth began in the 1980s, in particular, economic and financial liberalization from the late of 1980s. In the mid-1980s, several development plans were adopted in the process of privatization and liberalization¹⁷. Major economic models started to shift to foreign investment. In following decades the major industries in Malaysia comprised of the manufacturing and service sectors . Moreover, during the deregulation period, the extent of government intervention lessened. Currently, the economic model of Malaysia has become an export-oriented industrialized country, the main driver of economic growth is from domestic demand. Furthermore, around half of the labor force is in the sector of services. As Figure 3.7 shows, the economy of Malaysia has experienced a prosperous and capitalized process since the 1990s. The average economic growth has reached 8.9 percent. After the booming period, the Asian Financial crisis in 1997 brought significant trouble to Malaysia's economy and then triggered a serious economic recession in 1998. Malaysia averaged a solid 5.5 percent growth rate from 2000 to 2008. Similar to Hong Kong, the major economic downturn in Malaysia was a result of instability and recession of the global economy, which indicated that Malaysia's economic recession was also largely determined by external economic shock.

¹⁶ The classification is based on World Bank Country Classification.

¹⁷ This privatization and liberalization included three major policies, including a New Economics Policy, the National Development Policy and a third outline perspective plan.

Figure 3.7: The GDP Growth in Malaysia between 1990 and 2011:



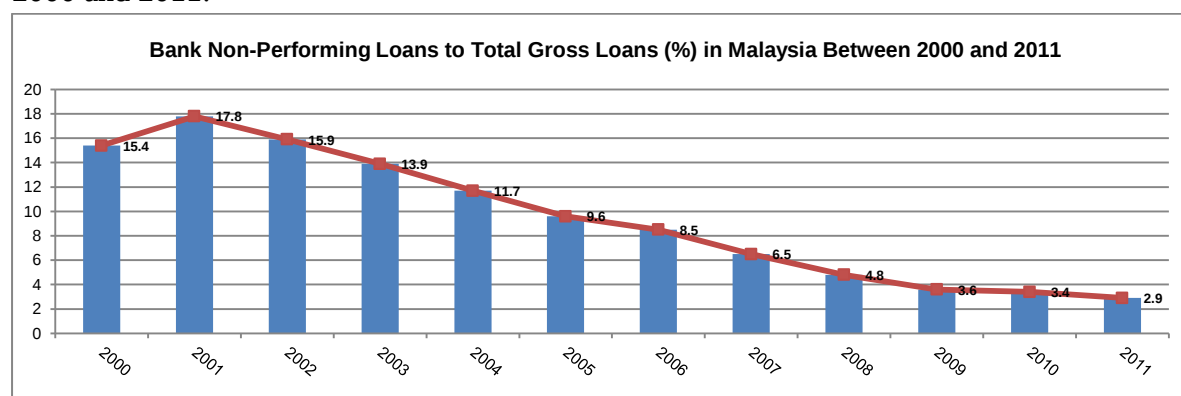
Data Source: World Bank

3.4.2 Financial Sector Development of Malaysia:

Malaysia's financial sector has reached 400 percent of GDP at the end of 2011. The entire financial sector is diversified consisting of banking intermediaries, insurance companies and capital market intermediaries. The banking sector still occupies half (50.6 per cent) of the entire financial sector. In the past two decades, Malaysia's banking sector underwent a consolidation process, the commercial banks reduced from 22 banks in 1986, to 8 banks in 2011, the discontinued house, securities firms and merchant banks were consolidated into investment banks. In the banking sector, with a policy of liberalization of the financial services, more new licenses are issued to commercial banks. The entry of these new banks is expected to further facilitate more international trade and investment flows. Moreover, in order to further promote transformation of industry, the government puts more focus on the development of financial institutions (DFIs). It provides financial support to those strategic economic sectors, including SMEs, consumption credit, infrastructure projects and export-oriented industries. Besides, both the Security Commission (SC) and Kuala Lumpur Stock Exchange (KLSE) issued several guidelines and requirements on disclosure-based regulation (DBR) from September of 2000. The main reform policy on the development of the financial

sector was also implemented from three perspectives, including the capacity building of domestic institutions, diversification of the financial sector, and gradual deregulation and liberalisation. As a whole, the banking institutions on both commercial and Islamic sides, Malaysia's banking sector's asset quality is significantly improved, and non-performing loans have fallen from the peak point 17.8% in 2001 to 2.9% in 2011, as is shown in Figure 3.8. In addition, according to the IMF assessment report¹⁸, the banking sector in Malaysia has improved in terms of liquidity and asset quality. Nevertheless, some small Islamic banks are still less diversified and a higher credit risk due to lower starting capital.

Figure 3.8: The Bank Non-Performing Loans to Total Gross Loans (%) in Malaysia between 2000 and 2011:



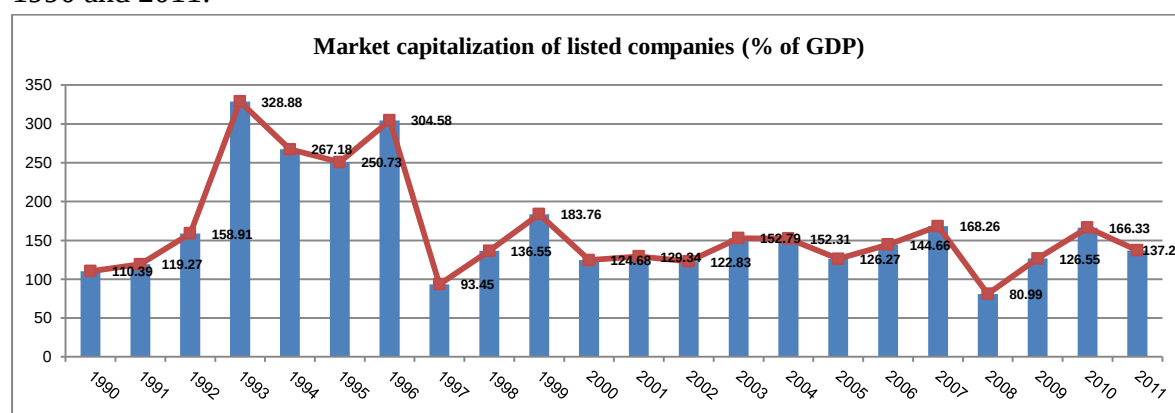
Data Source: World Bank

Regarding the bond and equity market in Malaysia; the development of Malaysia's bond market is accelerated and relatively developed after the Asian financial crisis and it is the third largest bond market in Asia in terms of percentage of GDP. Basically, Malaysia's bond market comprises of both conventional and Islamic bonds. At the end of 2011, the market size had reached around \$282.3 billion, which occupied around 137 percent of GDP, as shown in Figure 3.9. Moreover, various types of sector make use of bond issuance to finance, and financial institutions are the largest issuers in the bond market. Different from other

¹⁸ Malaysia: Financial Sector Stability Assessment (2013). International Monetary Fund. The links is <https://www.imf.org/external/pubs/ft/scr/2013/cr1352.pdf>.

selected countries in our sample, the corporate bond and government bond have no significant gap in Malaysia's bond market. The equity market of Malaysia was founded in 1964. After the separation of Singapore and Malaysia, the independent KLSE was established. In general, it also has a relatively developed equity market than other emerging markets. According to the IMF report in 2013, the ratio of market capitalisation in the KLSE has exceeded most other Asian countries, which has indicated the important role of long-term institutional investors. However, the state sector still has substantial ownership of the financial sector. The main financial sectors and groups are the seven Government Linked Investment Companies (GLICs), which occupy almost 24 per cent of the total market capitalization of the KLSE. Consequently, the government-related financial groups are still the most influential players in the Malaysian equity market.

Figure 3.9: The Market Capitalization of Listed Companies (% of GDP) in Malaysia between 1990 and 2011:



Data Source: World Bank

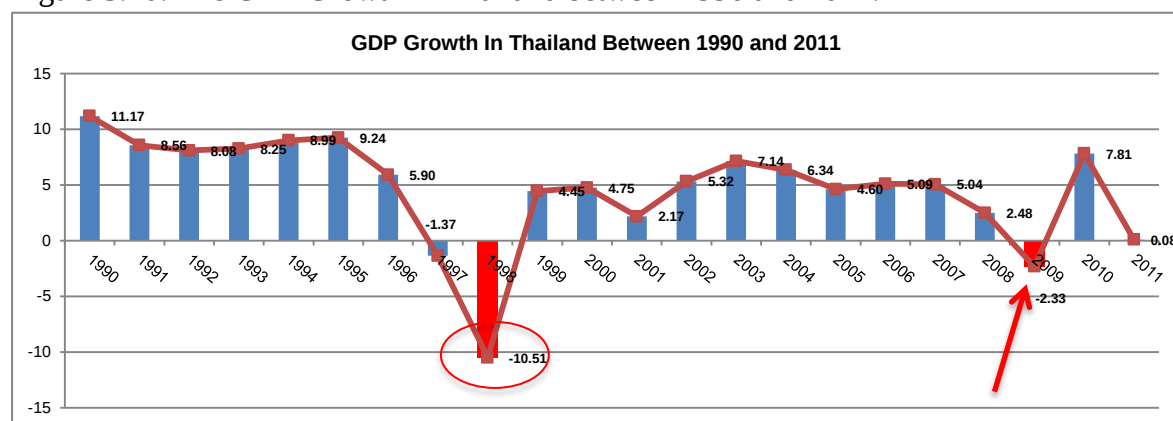
3.5. Background: Thailand:

3.5.1 Political and Economic Status of Thailand:

The Kingdom of Thailand is situated in the heart of Southeast Asia. Thailand is one of the Asian countries that has never been colonised and it is the second largest emerging economy

in Southeast Asian after Indonesia. Thailand is a constitutional monarchy. Similar to democratic countries, its legal system is based on civil law, and the general law is influenced by the codified systems of France, Germany and Japan. The major economic growth comes from agricultural, industrial, tourism and service sectors, and natural resources. Since the 1980s, Thailand's economy has been expanding; enjoying the highest speed of growth from 1985 to 1995. As shown in Figure 3.10, there was a relatively high level of GDP growth from 1990 till 1995 as a result of significant exports, growth in the tourism sector and foreign direct investment. After this prosperous period, due to an “over-confident economy” and large numbers of non-performing loans, the Asian financial crisis in 1997 led to busting of Thailand's economic bubble (Triamanuruck *et al.*, 2004). After recovering from this recession, economic meltdown started as result of instability of political environment¹⁹. There was an average of around 5 per cent of GDP growth before global financial crisis in 2008. Between 2008 and 2009, Thailand' GDP growth dropped to negative 2.33 per cent. From this it can be seen that Thailand's economy is sensitive to political stability and fluctuation of global economy.

Figure 3.10: The GDP Growth in Thailand between 1990 and 2011:



Source from: World Bank

¹⁹ The instability of Thailand's political class is the main reason for the economic meltdown in past few years. The standoff of the controversial leadership of ex-president Thaksin Shinawatra had resulted in economic downturn.

3.5.2 Development of Financial Sector in Thailand:

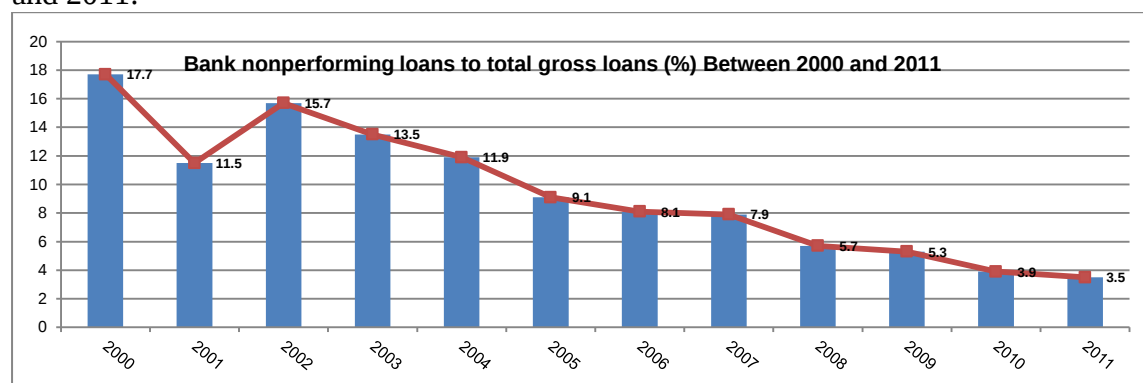
Thailand's banking system suffered huge losses after the Asian crisis of 1997. In the recent two decades, one of the major restructures is the change of ownership and government intervention in banking sector. The government has reduced their participation in the activities of commercial banks. The main control focuses on several banks that accounted for around 41 per cent of commercial bank asset in 2006²⁰. The fundamental level of banking capital and the solid profitability of banks have been strengthened with the growth of strong loans, improvement of risk profiles and higher interest margins due to the diversification of their revenue base. Moreover, better credit underwriting also contributes to decrease distressed assets. Although the liquidity in the banking sector has been improved, the banking system still needs to reduce the amount of non-performing loans to ensure long term stability. The credit culture should be further built up in order to facilitate banks gaining effective borrowers. With regard to banking regulation and supervision, Thailand's banking sector has a high degree of compliance with international standards, but legal frameworks and independent supervisory organisations should be updated and be given more power in order to provide efficient supervision in a more complex financial environment. In general, the banking sector plays one of the most prominent roles in Thailand's financial sector. The commercial banking sector in Thailand almost occupies over 60 per cent of total financial system, and the banking asset is 180 per cent of GDP. The top five commercial banks account for 61 per cent of banking asset and 65 per cent of deposits²¹. The government is still the largest equity stake in the commercial banking sector. Foreign banks accounted for only around 18 per cent of total banking asset in 2007, which is similar to most emerging countries

²⁰ Thailand: Financial System Stability Assessment (2009). International Monetary Fund. The Links: <http://www.imf.org/external/pubs/ft/scr/2009/cr09147.pdf>.

²¹ The evidence comes from the IMF report in 2009.

(IMF report, 2009). Due to one branch policy (i.e. restrictions on size and scope of foreign banks), the market of foreign banks are mainly the wholesale markets. The Financial Sector Master Plan tries to further improve in terms of new entrants, the ownership changes from private banks recapitalisations, government interventions in banks and entry of foreign banks.

Figure 3.11: The Banking Non-performing Loans to Total Gross Loans (%) between 2000 and 2011:

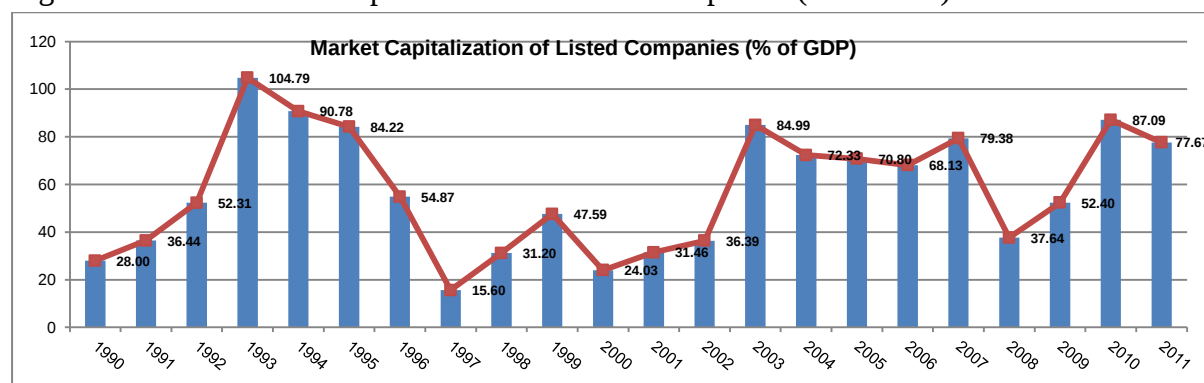


Source from: World Bank

The bond market in Thailand accounts for 44 per cent of GDP. However, as Figure 3.27 in the Appendix shows, all of the non-bank financial institutions occupy only small amounts of shares in the whole financial system. Similar to most Asian countries, the government bond accounts for the majority of shares in bond issuance, whereas the number of corporate issuers is much less. In terms of their stock market, the Stock Exchange of Thailand (SET) has recovered and grown in number of issuers and market capitalisation in the post-1997 crisis period. As Figure 3.12 shows, the total market capitalization has grown significant in recent decades although the pace is slower compared to the beginning of the 1990s. However, many weaknesses are still required to further enhance. First, the ten largest companies account for approximately 40 per cent of total market capitalisation. More importantly, most of these large firms are state-owned, which is creates a heavy concentration in Thailand's equity market. This is demonstrated by the fact that the SET is still highly controlled by central

government. Second, another significant characteristic is that there is a high level of volatility due to small amounts of freely floating shares. What makes this worse is that the value of these shares is also lower compared to other exchanges in the Asian region²².

Figure 3.12: The Market Capitalization of Listed Companies (% of GDP):



Source from: World Bank

3.6. Background: Indonesia:

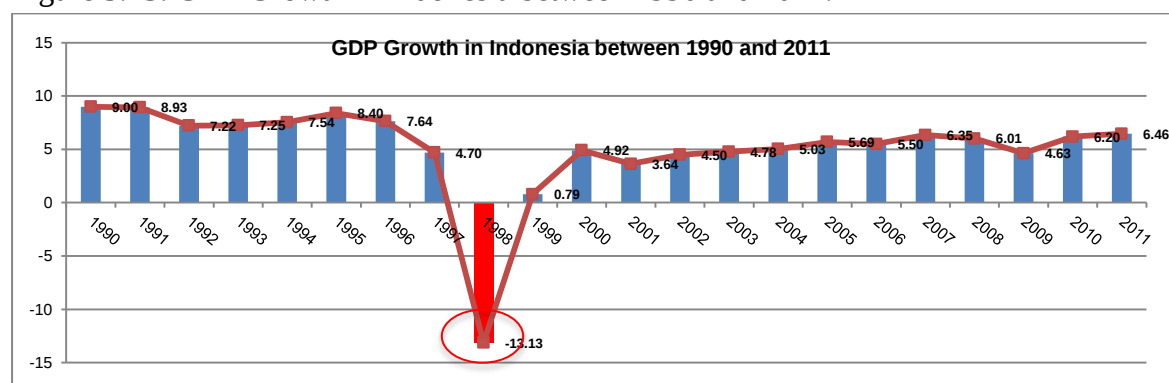
3.6.1 Political and Economic Status of Indonesia:

Indonesia, a former Dutch colony is now a multi-ethnic, multilingual and multi-religious state. After the war of independence against the Netherlands, Indonesia has created a nation with many different ethnic groups in one common nation. 87% of the Indonesian population are Muslim and others are Christians and Ahmadi communities. Since 1966, Indonesia has experienced an extensive and rapid state industrialization and human rights development based on the support from the armed forces. Influenced by Dutch law, the legal system in Indonesia was formed and generally follows a civil law system. Political issues still plays a crucial role in Indonesia, although a series of steps towards decentralisation have been taken. The government plays an important role in affecting the judiciary and economic activities. Anti-corruption, decentralisation and democratisation processes still need to be strengthened

²² The source is from IMF report in 2009.

in order to support a more stable economic future. In terms of economic development, Indonesia has transformed from a poor, developing country to a lower-middle income country by means of a more open market and a family-based mode of business. However, economic development is still dominated and prioritised by the state government. The key industries in Indonesia are still mainly dependent on the agricultural and natural resource (oil) sectors. The tourism sector is gradually becoming increasingly vital in foreign exchange. Since the Asian financial crisis in 1997, the Indonesian financial system has restructured the banking sector and its state debt. In particular, the Indonesian economy has seen a solid growth rate between 4% and 6% under the liberalisation of their economy. However, small companies still retain high stakes in the Indonesian economy in the entire financial system. The global financial crisis of 2008-2009 did not impede Indonesian economic growth. Due to the industrial structure in economy, Indonesia's economy is not as sensitive as those export-oriented countries. As shown from Figure 3.13, the worst economic recession happened in the Asian financial crisis of 1997, which reached a low of negative 13.1 per cent over these two decades. Overall, although Indonesia is still not a market-based economic system due to intransparency, corrupt bureaucracy and inconsistent local regulations, the decentralisation of the economy has contributed to privatisation to some degree. In addition, a large increase of FDIs and FPIs has shown that the Indonesian business environment tends to be relatively more open and friendly, and the liberalisation process also helps to create more foreign trade investments.

Figure 3.13: GDP Growth in Indonesia between 1990 and 2011:



Source from: World Bank

3.6.1 Development of Financial Sector in Indonesia:

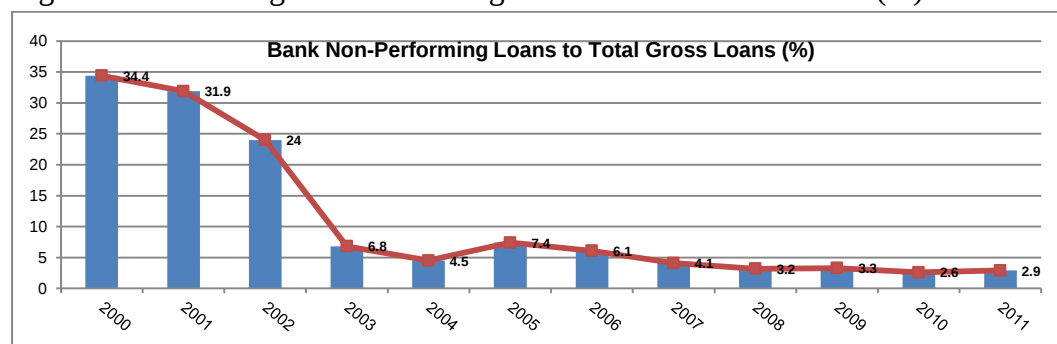
A comprehensive restructuring and consolidation of the banking sector has helped to improve efficiency since the Asian financial crisis of 1997. In 2010, the average capital adequacy ratio had reached around 16.3%, which indicates bank soundness in relation to risk was beyond the Basel II requirements²³. Figure 3.14 shows that the gross non-performing loans also dramatically reduced in recent decades. These have stayed at approximately 2.9 per cent since the end of 2011. The Indonesian banks diversified their credit risk profile and strengthened their earning capacity by reducing their holding of government securities and increasing channels with SMEs and the retail sector²⁴. More importantly, with the commence of Basel principles, the supervision of banking system further contributes to the adoption more advanced supervisory approaches in banking. The Basel I accords had the effect of improving compliance with international laws and regulations. But nevertheless, the Indonesian banking sector still faces the problems of inefficient capital allocation and a surge of short-term capital inflows, which leads to many pressures on the Indonesian banking system. Over 90 per cent of banks' funding structure is short-term (with maturities of less

²³ Indonesia Country Report 2012 The link: <http://www.bti-project.org/fileadmin/Inhalte/reports/2012/pdf/BTI%202012%20Indonesia.pdf>.

²⁴ Indonesia financial system stability assessment by IMF.

than one month). Similar to most of emerging countries, Indonesian commercial bank lending still relies heavily on central banks and the government. According to the IMF assessment report in 2010, the top three state-owned commercial banks occupied for one-third of banking sector asset and deposit base, and the top 15 banks accounted for 70% in total. The private, small- and medium-sized banks have almost no competitive advantages with the larger state-owned banks. This has lead to the sources of corporate finance still being limited and hard easy to access in Indonesia.

Figure 3.14: Banking Non-Performing Loans to Total Gross Loans (%):

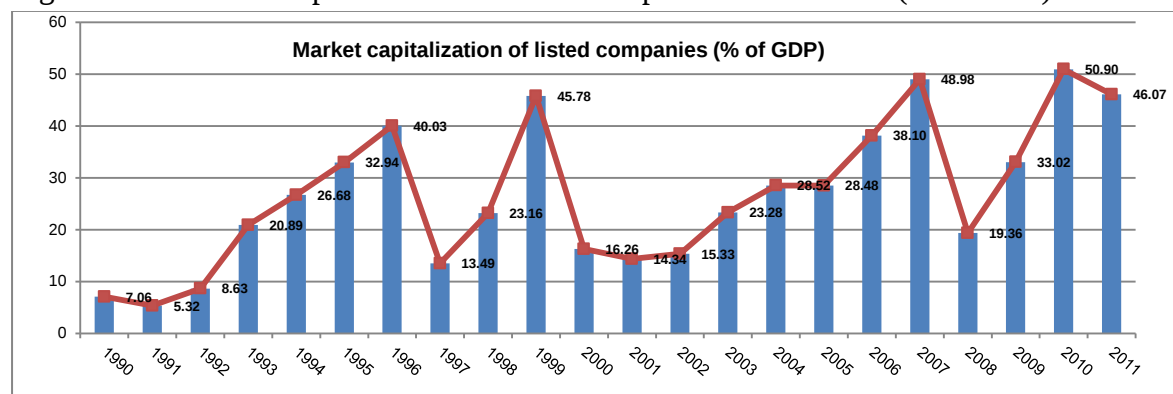


Source from: World Bank

In terms of the non-banking financial sector in Indonesia, the capital market provides only a limited source for fund raising or long-term investment. In terms of stock market and bond market, the size of Indonesia's stock market is expanding and the share of market capitalization to GDP growth has continued to grow, except during recession periods. It raised gradually up to a peak of 50.9 per cent in 2010. However, the top 50 listed companies accounted for over 80 per cent of turnovers, but the limited degree of liquidity also hampers their usage as a source of long-term capital raising and investment. Moreover, most Indonesian companies are family-based companies, and they would not like to go public due to the loss of company shares and rights. With regard to the Indonesian bond market, there was 12 per cent bond market capitalization in GDP in 2009. Over 85% of bonds are

government bonds in Indonesia and the commercial banks hold more than half of these. Additionally, the stock exchange and banks are the largest issuers of corporate bonds.

Figure 3.15: Market Capitalization of Listed companies in Indonesia (% of GDP):



Source from: World Bank

On the whole, the financial sector in Indonesia at this stage is still undergoing a process of transformation. Indonesia's financial sector is relatively small compared to the other selected Asian countries. The main financing or expansion for Indonesian firms still primarily relies on internal earnings based on a low level of private debt relative to GDP. Worse, the main financing activities still mainly depend on few large commercial banks.

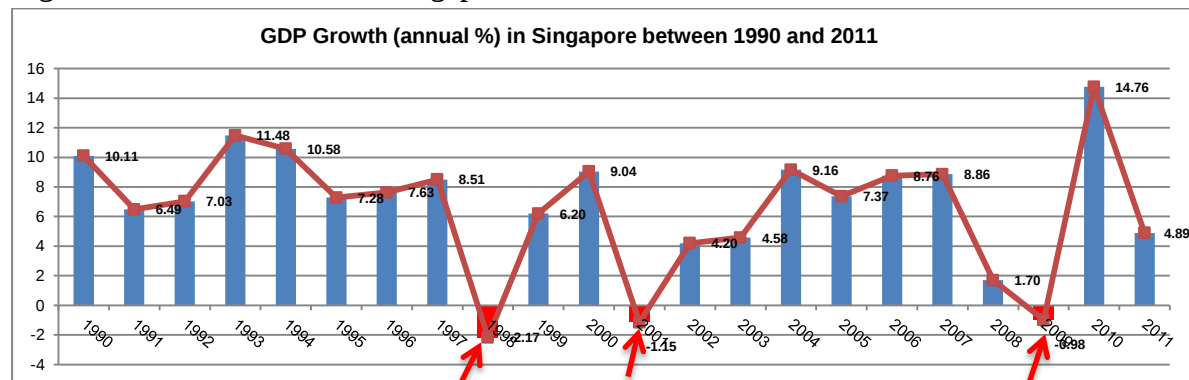
3.7. Background: Singapore:

3.7.1 Political and Economic Status of Singapore:

The Republic of Singapore is located at the Southern end of the Malay Peninsula. It was separated from the rest of Malaysia and became a sovereign, democratic and independent nation in 1965. Following the colonial legal system, the legal system in Singapore is similar to the British legal system based on common law. Since 1980, Singapore has been the most modern country in Southeast Asia. Industrial development has moved towards highly skilled technology and service sectors. From the 1990s, with the deepening of globalization,

Singapore further created economic space by encouraging local Singaporean companies to operate in resource-rich countries in the Asian region, so as to upgrade their higher-end activities. Currently, Singapore has one of the most corruption-free governments, one of the most skilled workforces on a worldwide scale. Singapore's economy heavily relies on external markets, which includes foreign capital, foreign technology and foreign workers. The service sector has one of the largest GDP growths in Asia, it exceeded 73 per cent of GDP in 2011. Until recently, two-thirds of manufacturing outputs were produced by multinational corporations, even though certain service sectors are still dominated by central government. As Figure 3.16 shows, similar to Hong Kong's economy, the three economic downturn periods mainly were caused by global economic recession, a significant slowdown of the economy in developed economies (e.g. the United States, the European Union and Japan) and a slump in the electronics market (i.e. the Asian financial crisis in 1997, the dramatic economic downturn of 2001 and the global financial crisis in 2008). It led to an economic recession in Singapore due to decrease of exports and FDIs. In Singapore's second economic turnaround (2002-2008), it achieved an average of 7.2 per cent economic growth. During U.S subprime crisis and global financial crisis, Singapore's economy dropped down to a low of negative 0.98 per cent. Generally, changes in the external economic environment lead to a dramatic reductions of exports and FDIs due to Singapore's export-oriented economy.

Figure 3.16: GDP Growth in Singapore between 1990 and 2011:



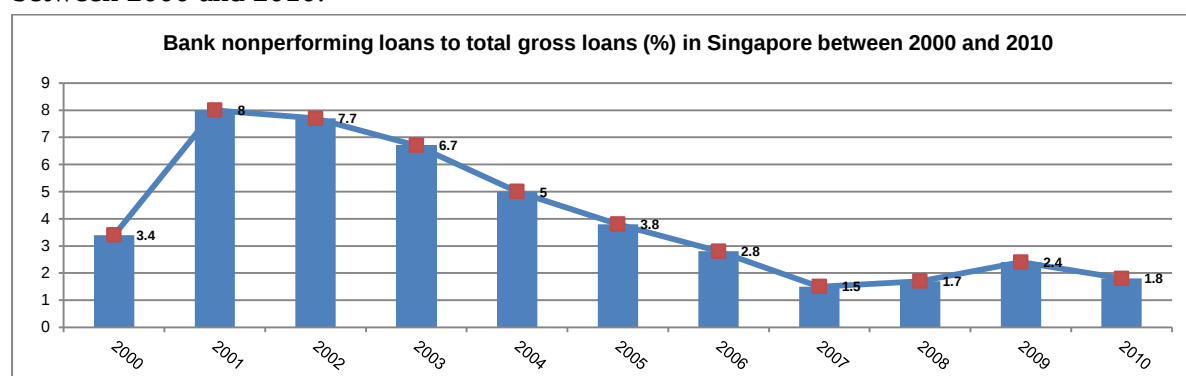
Source: World Bank

3.7.2 Development of Financial Sector in Singapore:

Singapore has a highly developed market-based economy and the most friendly business environment in the world. In the banking sector, it plays a dominant role in Singapore's entire financial system. Firstly, Singapore has a relatively advanced banking system, which includes around 580 local and foreign financial institutions. The range of financial products and services also is relatively complete compared to other countries in the Asian region. Moreover, the local banks perform well and enjoy an extended period of profitability by non-interest income and growing overseas operations, which have indicated higher fees and treasury-related activities. Secondly, the loan quality of local banks has improved in terms of loan portfolio, all three local banks have strong and stable capital and liquidity, which further maintains the stability of the entire banking sector. Between 1997 and 2007, the loan-to-deposit ratio of Singapore's banking sector dropped from a high 121% to 74% and the non-performing loans declined from 8 per cent in 2001 to 1.8 per cent in 2010, as shown in Figure 3.17. The banking sector is still the most dominant segment in Singapore's financial system in terms of soundness, highest profitability and liquidity; which has occupied approximately 85% of the total financial sector assets. This has resulted in more diversified local and foreign financial institutions (including capital market, securities trading, foreign exchange etc.)

needing to be established and developed. Different from other Asian countries, most commercial activities are conducted by foreign banks. The domestic banks only occupy a small proportion of the domestic economy. Three local banks play a dominant role in domestic market, which accounts for over 20% of total assets²⁵.

Figure 3.17: The Banking Non-performing Loans to Total Gross Loans (%) in Singapore between 2000 and 2010:



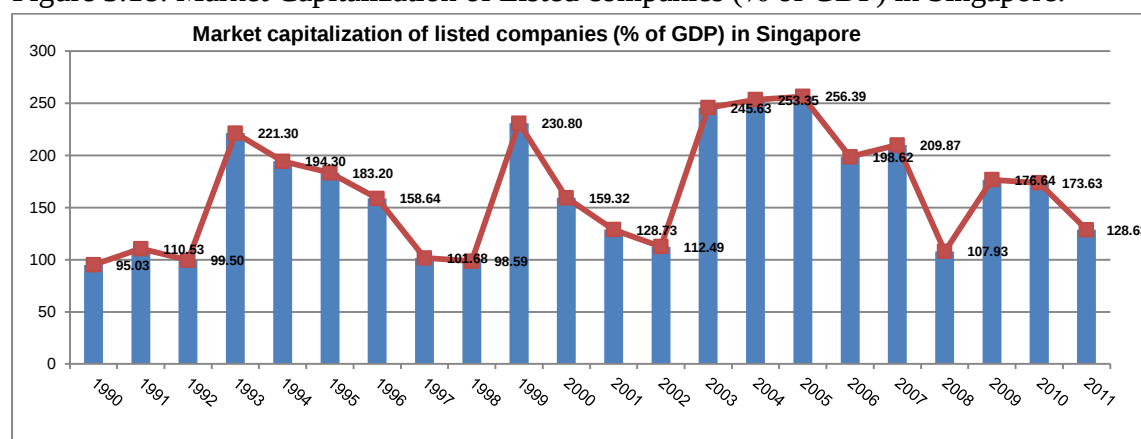
Source from: World Bank

In terms of bond market, it has been a key component of the government's policy to strengthen the role of an international financial centre. Firstly, the volume of outstanding corporate bonds has increased steadily in recent decades, nevertheless, the bond market in Singapore is still to reach the advanced stage of development in the aspects of number and value of new bond issuance (IMF report, 2011). This could be explained by the constraint of the size and structure of the domestic economy. In addition, the high level of liquidity in the banking system also hampers the development of corporate bond issuance. In terms of their equity market, the Singapore Stock Exchange (SGX) was formed in 1999 by a merger of the Stock Exchange of Singapore and the Singapore International Monetary Exchange. The SGX is one of most well-developed and sophisticated stock exchanges in the world. It has a close

²⁵ The evidence is from Monetary Authority of Singapore (MAS).

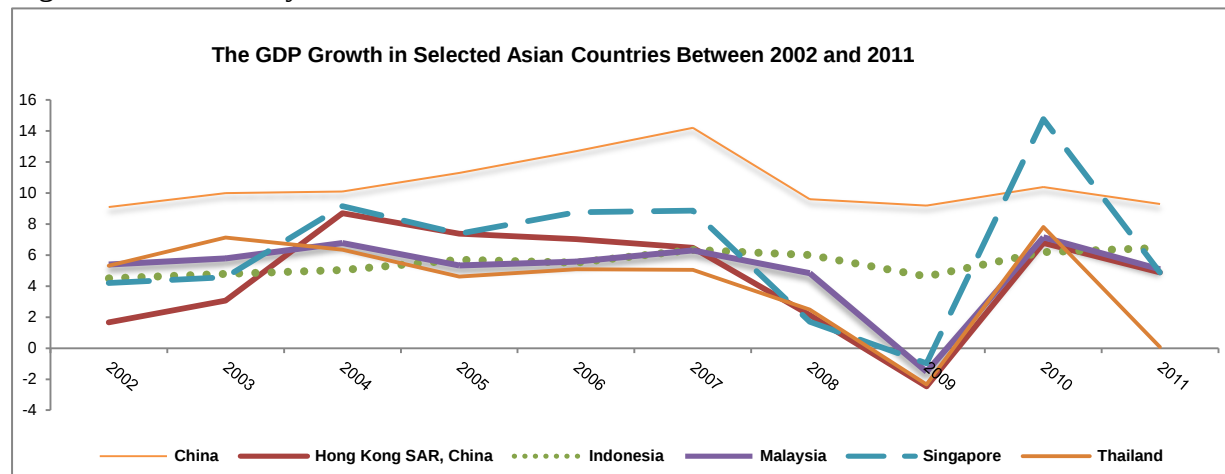
linkage with several international markets and has introduced many instruments (i.e. creating investor protection and a better environment for local enterprises) to improve efficiency and growth of the stock market (Fock and Wong, 2001). Moreover, the entry requirement has been reduced (such as the removal of 20% of local revenue requirement to qualify for going public). Hence, it is able to reduce the reliance of foreign firms on financial services. Firms are also not allowed to trade existing shares in foreign currency as well. In terms of the growth and development of the SGX, the regulatory mechanism and corporate governance could be improved, especially the information disclosure and reporting criteria. In general, the SGX remains small even though it has attracted growing foreign interest based on the country profile of 2007.

Figure 3.18: Market Capitalization of Listed companies (% of GDP) in Singapore:



Source from: World Bank

Figure 3.19: Summary: The GDP Growth in Asian Countries between 2002 and 2011:



Source from: World Bank

3.8. Comparison among Six Selected Asian Markets in This Study:

In general, the economic development and financing environment in many Asian countries face greater country-level risks due to many factors (such as political instability, weaker legal and regulatory frameworks) than they do international risks. Most of these Asian countries have a background of colonialism. Those emerging Asian countries have adopted export-oriented and low labour cost manufacturing paradigms of economic development. With privatization and deregulation in the 1980s and 1990s, most South-eastern Asian countries have enjoyed a rapid economic growth during the past two decades. This has created booming asset markets and attracted massive capital inflows. Hong Kong and Singapore as two centres in the Asian region have the most advanced financial systems and regulatory regimes. The most significant difference between Hong Kong and Singapore is that the domestic and international financial systems are fully integrated in Hong Kong, while they are strictly segregated by keeping separate accounts for offshore and domestic activities in Singapore. Malaysia is a newly industrialized country with a relative balanced development of its banking sector and capital market. As a central hub for an Islamic financial system,

Malaysia has started to create a relatively well-developed financial system in compliance with international standards. However, the Islamic banking system is still less diversified and competitive than the non-Islamic system. The government-related financial group in the equity market is also still the most influential in the entire financial system in Malaysia. In Thailand, China and Indonesia, they have experienced a large expansion of financial assets. The most significant characteristics among these three large emerging markets in Asia is that they are still highly government-controlled in their financial systems. The openness and diversity of their financial sectors are also still relatively low compared to others.

Several characteristics in these selected Asian countries also can be summarized as follows:

3.8.1: The major economic structure mainly depends on export-oriented industrial model:

As Figure 3.20 shows, the export to GDP growth reached an average of 107% across the six selected Asian countries between 2002 and 2011, which suggests that the export-oriented model is a common characteristic in the selected markets. In particular, Hong Kong, Singapore and Malaysia as advanced and newly industrialized economies have led the adoption of this type of outward economic model to achieve economies of scale due to the limited size of the domestic model. In China and Indonesia, as two of the largest emerging markets in Asia, they are in the process of expanding exports and investments. Due to a large domestic market and more opportunities in their own domestic market, they also aim to improve the expansion of domestic demand. In the case of Thailand, due to the uncertainty of the political environment and the global recession, the economic growth began to enter meltdown. However, similar to their neighboring countries, the economic model of Thailand

has still to expand its domestic market, promote exports and foreign investments as well so as build up massive foreign exchange reserves and a surplus of current accounts.

3.8.2: Bank-dominated financial system in Asian financial systems:

All of the selected countries remain bank-dominated in terms of banking assets in the entire financial system, even though, since the 1980s, the equity markets in the entire Asian region have started to expand. The banking sectors for all of these countries play a prevailing role in their financial sectors. Overall, over 60 per cent of financial sector assets are controlled by the banking sectors in our sample countries, even in Hong Kong and Singapore. It has been demonstrated that the major financing channel for companies in the Asian context is still based on bank loans. On the one hand, it could be explained that most private corporations are family-based companies, and they probably would not like to lose control of their firms. On the other hand, this pattern of financial sector development could also result in information imbalance, although the information infrastructure has improved significantly in recent years. In particular, among those SMEs, the degree of information transparency is still low. In addition, the banking systems are basically much easier to exert control over capital markets.

3.8.3: The soundness of banking system is much more enhanced after financial crisis:

The financial sectors of the selected countries have been enhanced and liberalized in terms of the number of issuers in the capital market, performance of the banking sector, liquidity and the breadth of both the banking sector and the equity market (the only exception is the number of issuers in the stock exchange of Singapore, as shown in Figure 3.23)²⁶. In all six

²⁶ According to the IMF report in 2006, the liquidity and breadth of equity market stands for the share turnover and Share in total market capitalization of the top 10 most capitalized domestic corporations. According to Figure 3.23 (does this number need to change?), the market capitalization of domestic companies in Stock

Asian economies studies, the banking sectors are the most developed of their entire financial systems, and the equity markets are playing an increasingly vital role. In recent years, the contribution of the equity market has gone beyond the banking sector. As Figure 3.27 shows, the fast growing equity market increased the contribution to GDP growth, in particular in those relatively developed markets (i.e. Hong Kong, Singapore and Malaysia). On the other hand, their bond markets are much more underdeveloped compared to other financial sectors in terms of diversity of issuers, as shown in Figure 3.24. On the whole, after the financial crisis of 1997, the soundness of the banking sector has significantly improved in terms of the asset quality (NPLs), provision (provisioning ratio) and liquidity risks (loan-to-deposit ratio) of the banking system²⁷. However, the average growth of the banking sector's domestic credit compared to GDP implies that the banking sector in Asia maintained their lending policy to high-risk sectors, and that improving asset quality is still the main focus of banking sector development in Asia.

3.8.4: A large gap between the development of equity market and bond market:

The Southeast Asian economy is sensitive to volatility of foreign portfolio investment and domestic market illiquidity, with the economic models in Asian economies also being vulnerable to foreign capital flows. In bond markets, the share of bond market development to GDP growth is increasing, but the pace is much slower than the development of the equity market²⁸. It is also worth noting that the private corporation bond in those emerging and

Exchange Markets increased, in particularly in China and Hong Kong, a remarkable increase was happened since 2006.

²⁷ According to Shimada and Yang (2010), the main progresses of the banking system can be concluded as 1) asset quality, 2) provision and 3) liquidity risk. More specifically, the asset quality is represented by the decrease of non-performing loans (NPLs); the increase of provision to NPLs and accumulated foreign currency reserves over short-term external debt and loan-to-deposit ratio in these recent years.

²⁸ According to Shimada and Yang (2010), the slow pace of the bond market can be partly explained by many obstacles for those SMEs and companies in the new industrial sector with limited credit history. Another reason might be that Asia Bond Market Initiatives (ABMI) are relatively dispensable due to a variety of bond related

developed markets is shallow. As Shimada and Yang (2010) suggested, the development of financial systems lacks diversity among domestic intermediaries. The most typical example is that small and medium-sized companies still find it hard to access the banking sector and the capital market. Additionally, for those firms which are lower rated, the limited liquidity and limited diversity still means that it is very difficult to access the bond market. In general, the public sector and private companies in these East Asian countries have to choose international financial markets to raise funds, which also indicate that these selected countries are highly exposed to the economic performance of countries outside the Asian region.

Table 3.3: The Size of Corporation and Government Bond to GDP (%) Over a Decade across Six Selected Markets:

A) Size of Corporation Bond to GDP (%)										
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
China	0.6	0.8	1.3	2.8	3.8	4.3	5.6	9.1	10.6	11.3
Hong Kong	31.9	34.8	36.9	38	41	38	32.7	34.6	33.3	31.3
Indonesia	1.2	2.3	2.6	2.1	1.8	2	1.5	1.6	1.8	2
Malaysia	34.2	36.6	31.5	31.7	31.7	34.6	34.2	40.5	39	38
Singapore	29.6	30.5	30.6	28.8	28.8	28.8	28.9	27	26.8	28
Thailand	5.1	7.7	7.3	8.1	11.1	11	11	13.2	12.4	13
B) Size of Government Bond to GDP (%)										
	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
China	22.9	26.5	31	36.4	38.9	42	42.5	42.3	39.6	33.8
Hong Kong	9.1	9.6	9.3	9	8.8	8.3	9.2	32.5	38.1	36.3
Indonesia	26.2	24.7	21.9	17.1	18.8	18.4	14.3	15	13.1	11.4
Malaysia	44	48.4	46.1	42.6	42	47.2	40.6	48.7	56	56.6
Singapore	35.8	37.7	37.9	37.4	37.1	36.6	38.8	45	41.9	45.9
Thailand	32	31.1	32.6	37.6	39.3	44.1	42.9	52.1	54.4	54.5

Note: This table presents the proportion of corporate bond and government bond to GDP in percentage respectively across a decade in six markets. As the table has shown that the government bond has much more contribution to GDP growth in China, Indonesia and Thailand. To a comparison, the sizes of both government and corporation bond in Hong Kong, Singapore and Malaysia are almost at the same level, although the size of government bond had a jump from 2009 in Hong Kong. The source from Asia Bond.

The Southeast Asian economy is sensitive to volatility of foreign portfolio investment and domestic market illiquidity, with the economic models in Asian economies also being vulnerable to foreign capital flows. In bond markets, the share of bond market development to GDP growth is increasing, but the pace is much slower than the development of the equity

markets (i.e. repo-markets and fine-tuning the taxation systems to enhance cross-border transactions and the development of a benchmark yield curve, etc.).

market²⁹. It is also worth noting that the private corporation bond in those emerging and developed markets is shallow. As Shimada and Yang (2010) suggested, the development of financial systems lacks diversity among domestic intermediaries. The most typical example is that small and medium-sized companies still find it hard to access the banking sector and the capital market. Additionally, for those firms which are lower rated, the limited liquidity and limited diversity still means that it is very difficult to access the bond market. In general, the public sector and private companies in these East Asian countries have to choose international financial markets to raise funds, which also indicate that these selected countries are highly exposed to the economic performance of countries outside the Asian region.

Table 3.4: The Proportion of Corporation Bond to Total Bond across Six Selected Markets:

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
China	2.6%	3.0%	3.9%	7.1%	8.9%	9.3%	11.6%	17.7%	21.1%	25.1%
Hong Kong	77.9%	78.4%	79.8%	80.9%	82.4%	82.1%	78.0%	51.5%	46.7%	46.3%
Indonesia	4.3%	8.4%	10.5%	10.9%	8.9%	9.8%	9.4%	9.5%	12.0%	14.8%
Malaysia	43.7%	43.1%	40.6%	42.7%	43.0%	42.3%	45.7%	45.4%	41.0%	40.2%
Singapore	45.3%	47.3%	44.7%	43.6%	43.7%	44.0%	42.7%	37.5%	39.1%	37.8%
Thailand	13.9%	19.9%	18.3%	17.8%	22.0%	19.9%	20.5%	20.2%	18.6%	19.2%

Note: This Table shows the proportion of corporation bond to total bond (%) across a decade in six selected markets. As the Table has presented, there is an increasing trend in terms of proportion of corporation bond to total (%) in China and Indonesia over years. However, there is a downward trend in Hong Kong market since 2009, since China launched the first offshore market for RMB currency investment in Hong Kong in 2009 and it attracts a large supply of debt from issuers in China. For Malaysia, Singapore and Thailand markets, it almost kept at a stable level over these recent decades. Source from Asia bond.

3.8.5: The governments highly control the financial assets of entire financial systems in these East Asian countries:

In Asia, the government still has the most power in their financial sectors. The largest proportion of bank asset is controlled by several large domestic banks and most of their assets come from their governments, which further leads to the problem of information asymmetry.

²⁹ According to Shimada and Yang (2010), the slow pace of the bond market can be partly explained by many obstacles for those SMEs and companies in the new industrial sector with limited credit history. Another reason might be that Asia Bond Market Initiatives (ABMI) are relatively dispensable due to a variety of bond related markets (i.e. repo-markets and fine-tuning the taxation systems to enhance cross-border transactions and the development of a benchmark yield curve, etc.).

Even with a deepening of reform of supervision and corporate governance, a lack of information transparency is still one of the most serious issues in the Asian financial market, including Singapore and Hong Kong; two relatively developed markets. The problem of information opaqueness can be explained by the legacy of financial repression as a result of a high level of government discretion. A strong connection between commercial banks and governments can also be understood as an implicit guarantee that they will not be allowed to fail. The activities of foreign banks are limited, and they only occupy a small share of the entire banking sectors. The only exception is that foreign banks occupy larger shares than domestic banks in Singapore.

3.9 Conclusion:

The spectacular economic growth in the Asian region during the last two decades was mainly driven by export-oriented industrialization. However, in order to sustain such levels of growth, countries in the region have undergone comprehensive reforms of their macroeconomic policy and the regulation of their financial systems. The positive outcome of the reforms of the financial systems can be observed from the growing number of issuers in the capital market, the significant reduction of non-performing loans, the decline of liquidity risk, and the improvement of asset quality and provisions.

In order to provide a stable platform for investors these countries have given specific importance to equity markets. The growth of equity market to GDP has exceeded the growth of the banking sector to GDP. This is rather significant in China, Hong Kong, Singapore and Malaysia.

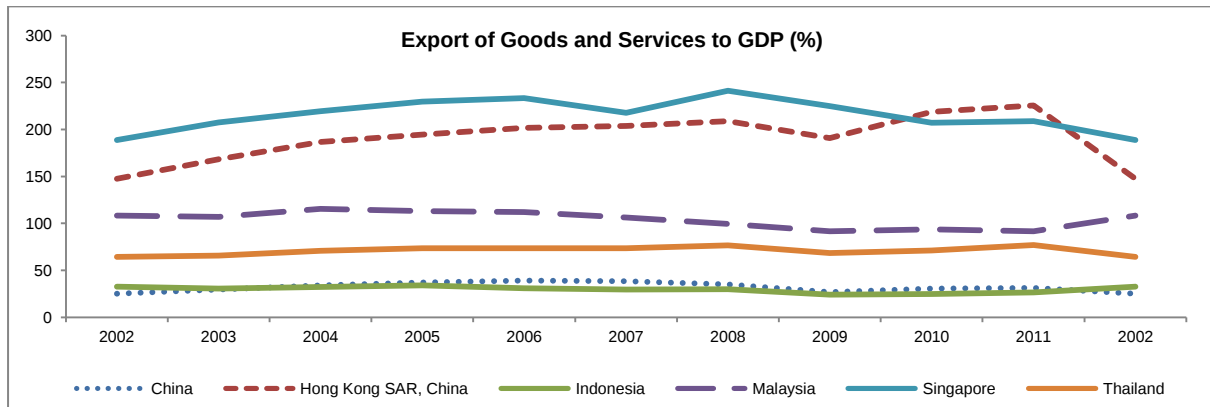
The financial sectors and markets are broadening and deepening in the Asian region. Hence, more assets from non-bank financial institutions and capital market are participating in the financial systems as a whole (i.e. stock and government bond markets), which effectively improves the financial resilience in the entire Asian region. However, the banking sector still remains dominant in the overall financial system in Asia. Over 60 per cent of financial sector assets are controlled by the banking sector, which means that the assets in the financial sector still need to be further diversified. In a comparison, in these countries the corporate bond market is significantly underdeveloped compared to both the banking sector and the equity market. Even in Hong Kong and Singapore, their bond markets are still not yet advanced.

A general overview of the social background, economic growth and development of the financial markets in these Asian markets would contribute to a better understanding of how these macro-level factors affect firm's financing decision. The legal origins determine how thoroughly the investors can be legally protected³⁰, which could further affect the development of a capital market in terms of investor protection, shared information, accounting system, ownership and corporate governance. A well-functioning financial system, in turn, provides liquidity; diversification and resource mobilisation to optimally structure firm's financing packages. The existing empirical findings have shown that the economic and institutional framework of each country is related to financial markets and access to finance at the micro level (Fabbri, 2001). However there is a scant literature on the effects of these factors on capital structure decision in Asia. Therefore this thesis contributes to the literature by investigating how macro-factors, in terms of economic development and institutional framework, affect firms' financing decision.

³⁰ La Porta et al (1997) has shown that investors have the best legal protection in common law countries and the worst in the French civil law countries.

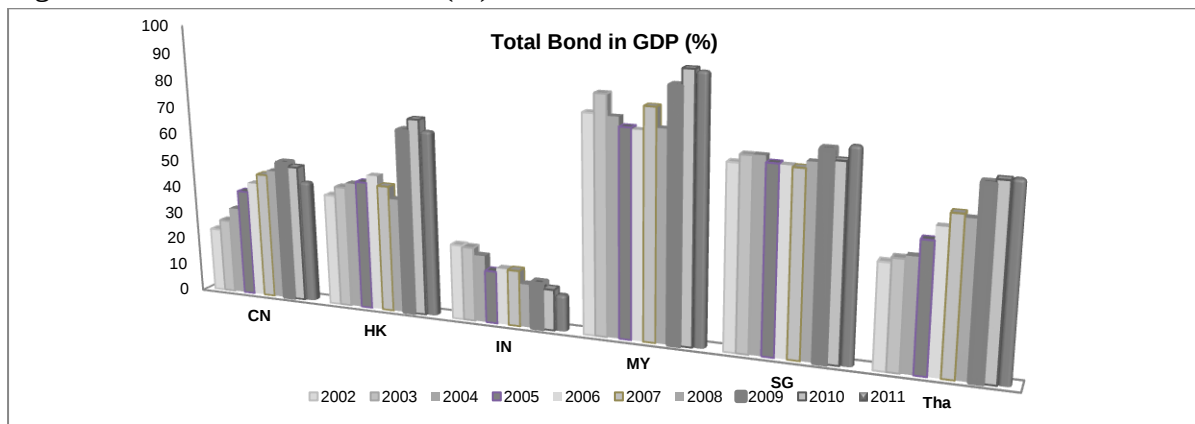
Appendix-2:

Figure 3.20: Export of Goods and Services to GDP (%):



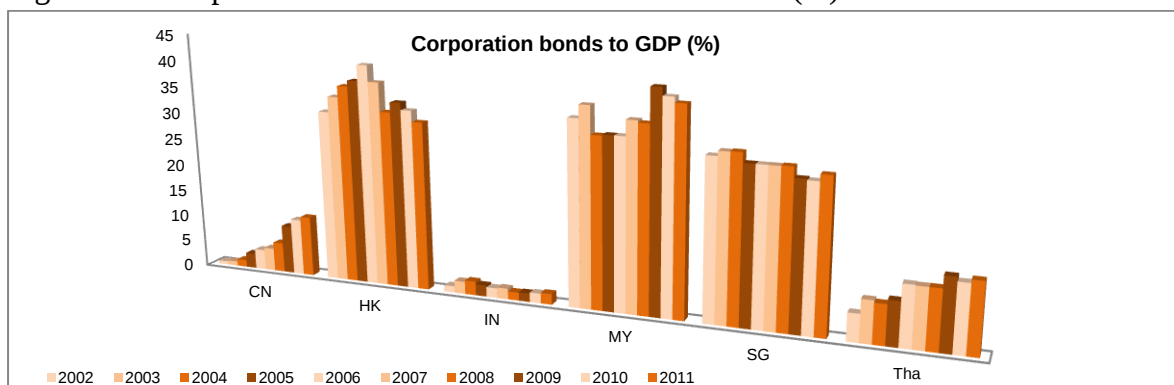
Data Source: World Bank

Figure 3.21: Total Bonds in GDP (%) across Six Selected Countries:



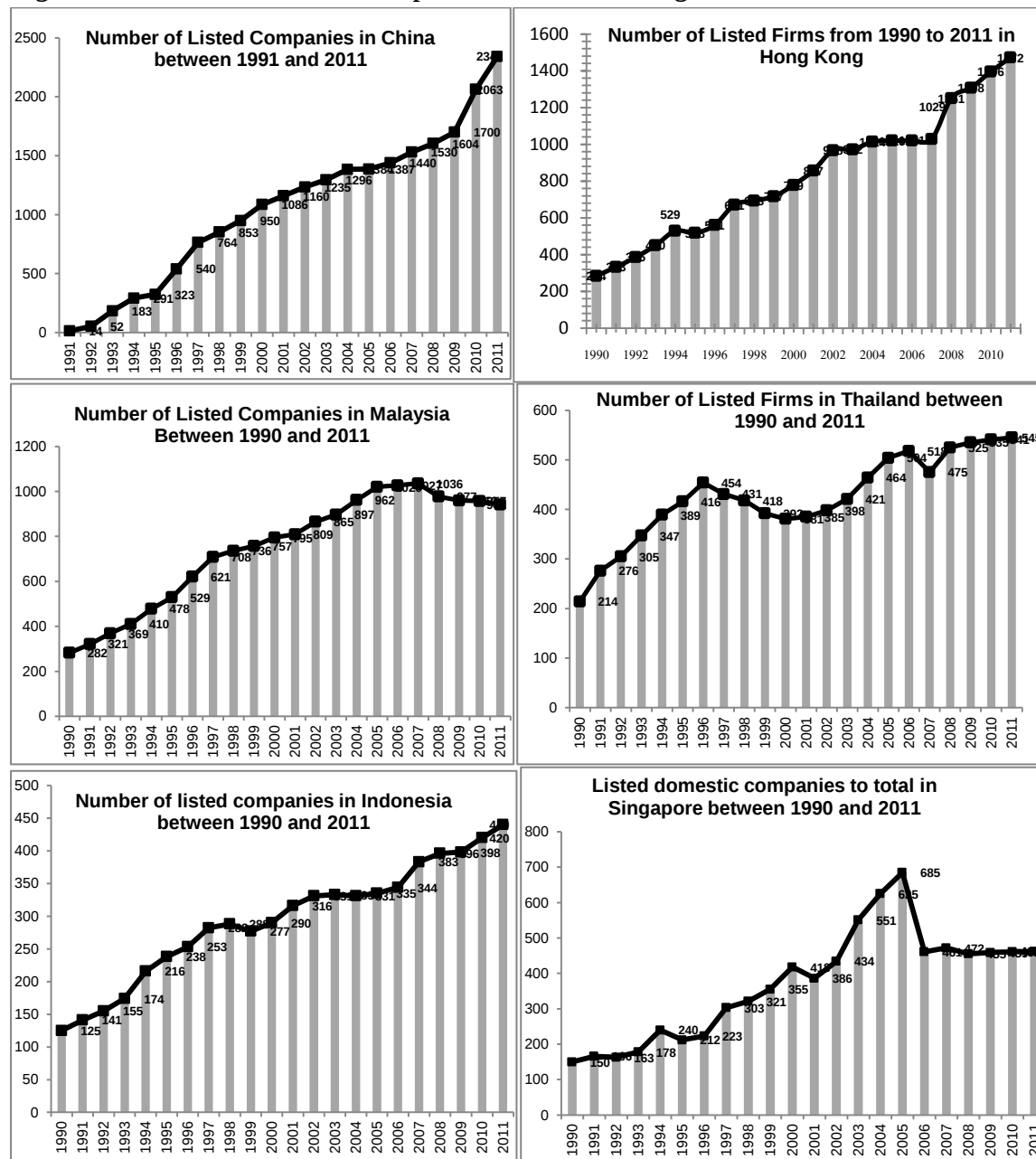
Source from: Asia Bond

Figure 3.22 Corporate bonds in USD to Total Bonds in USD (%):



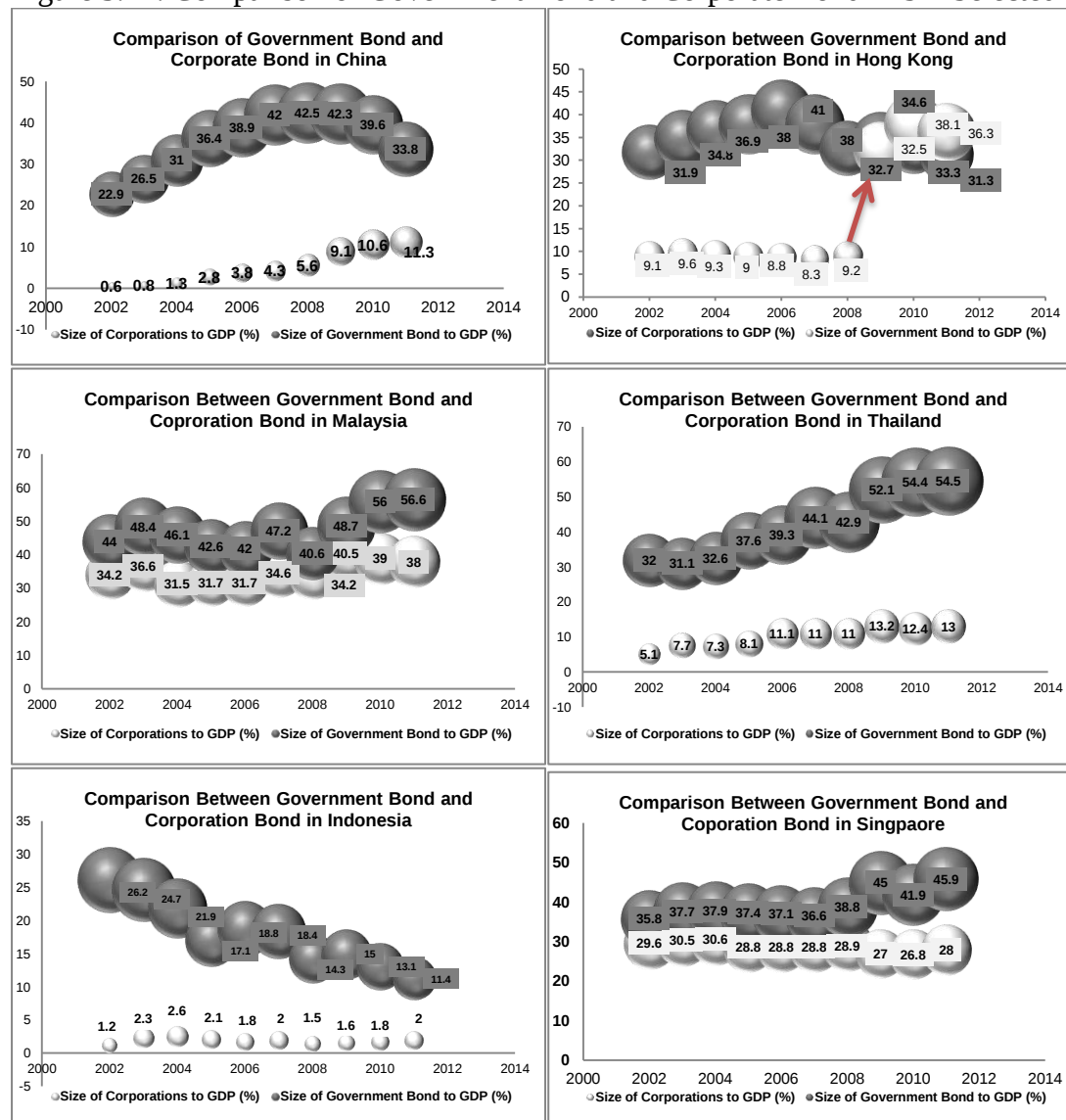
Source from: Asia Bond

Figure 3.23: Number of listed companies in stock exchanges in six selected countries:



Data source: World Bank

Figure 3.24: Comparison of Government Bond and Corporate Bond in Six Selected Markets:



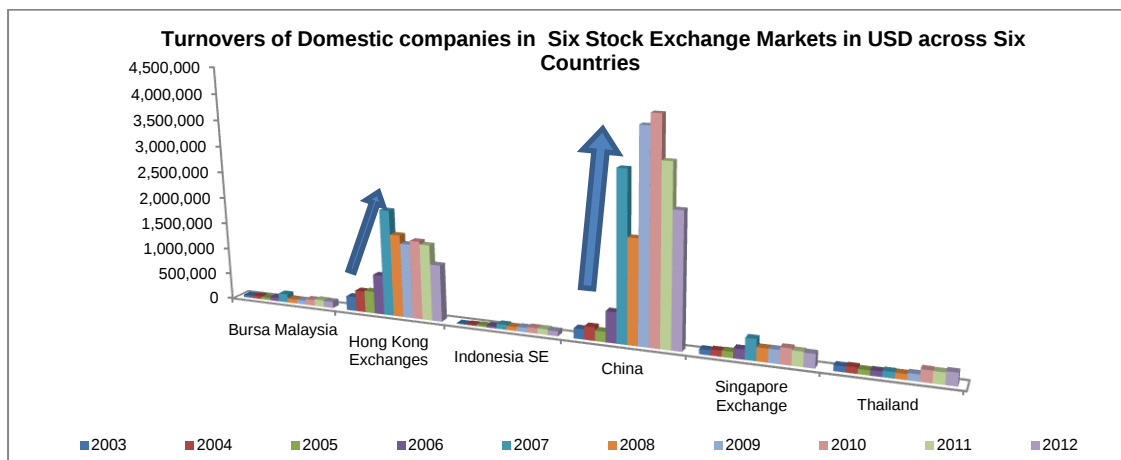
Source from: Asia Bond

Table 3.5 The Degree of Market Capitalization: Share in total market cap of the top 10 most capitalized domestic company:

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
China	NA	NA	16%	21%	22%	25%	39%	35%	34%	28%	23%
Hong Kong	68%	64%	59%	55%	52%	52%	47%	42%	49%	40%	37%
Indonesia	54%	54%	57%	54%	55%	53%	53%	48%	51%	48%	41%
Malaysia	40%	38%	35%	33%	36%	37%	36%	38%	37%	39%	37%
Singapore	58%	60%	59%	48%	48%	39%	38%	32%	44%	33%	28%
Thailand	45%	43%	42%	43%	45%	47%	44%	49%	49%	48%	45%

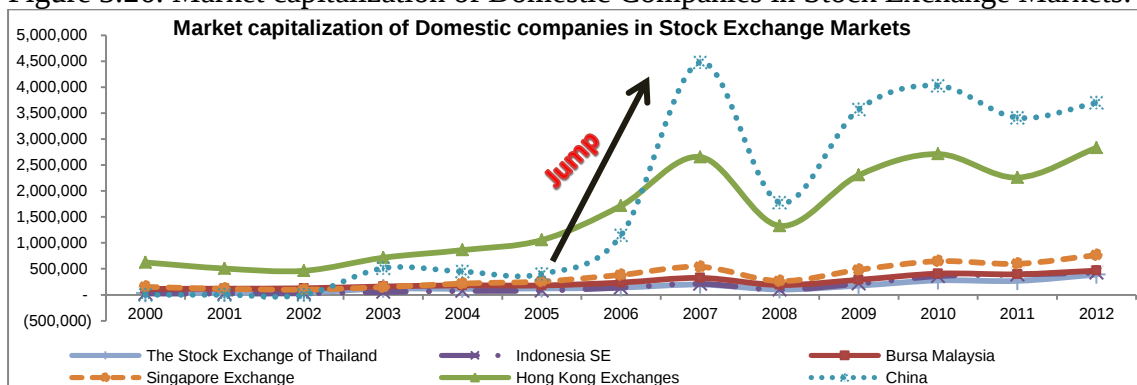
Source from Asia Bond

Figure 3.25: Turnovers of Domestic companies in Six Stock Exchange Markets in USD across Six Countries:



Source: World Federation of Exchanges

Figure 3.26: Market capitalization of Domestic Companies in Stock Exchange Markets:



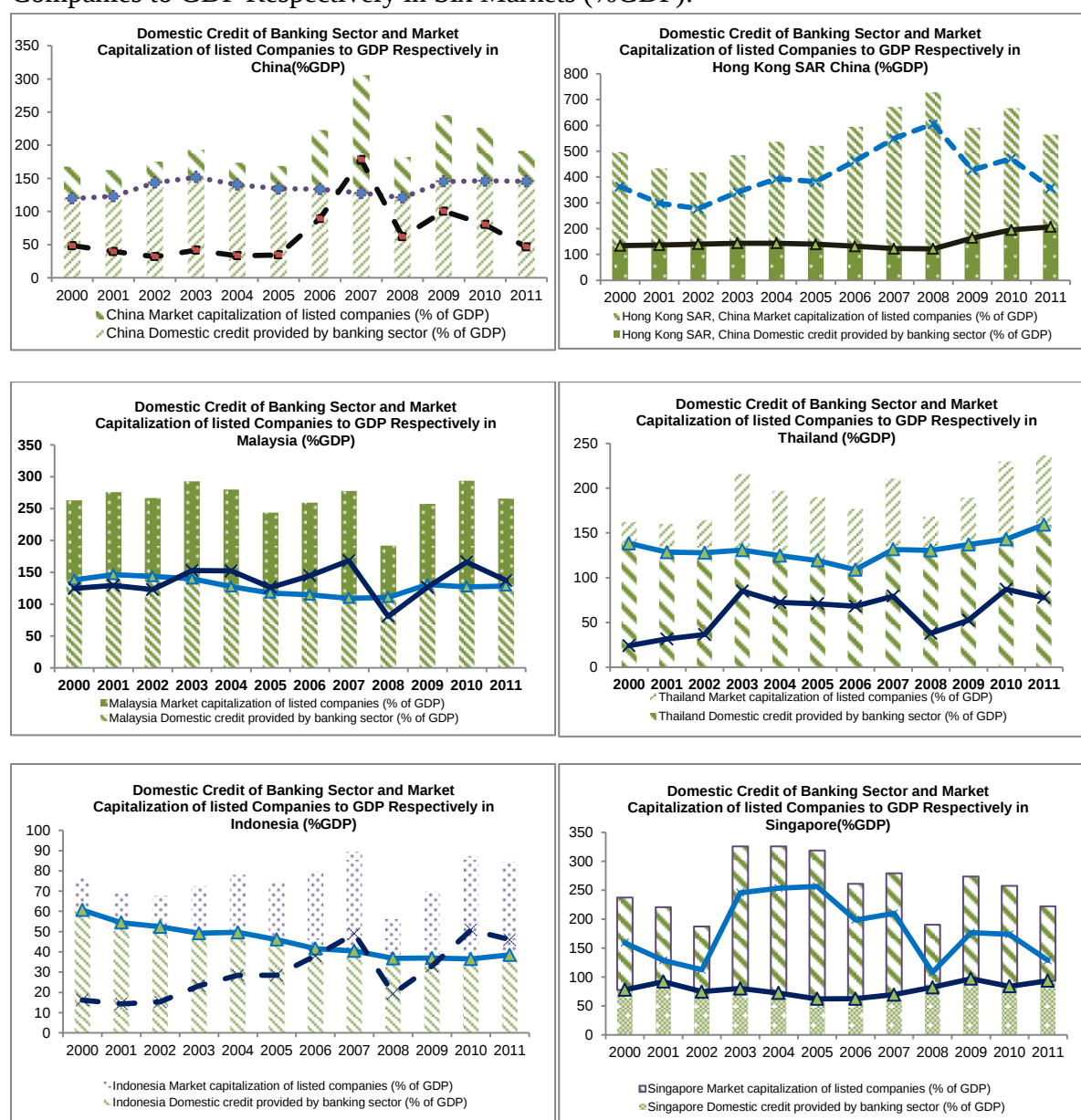
Source: World Federation of Exchanges

Table 3.6 Bond Market Rating:

Sovereign Rating:	Fitch	Mood's	R&I	S&P
China	A+	Aa3	A+	AA-
Hong Kong	AA+	Aa1	AA+	AAA
Indonesia	BBB-	Baa3	BBB-	BB+
Malaysia	A-	A3	A	A-
Singapore	AAA	Aaa	AAA	AAA
Thailand	BBB+	Baa1	BBB+	BBB+

Note: Source from Asian Bond

Figure 3.27 : Domestic Credit of Banking Sector and Market Capitalization of listed Companies to GDP Respectively in Six Markets (%GDP):



Data Source: WorldBank

Note: The Definition is referenced from WorldBank Database. Domestic credit provided by the banking sector includes all credit to various sectors on a gross basis, with the exception of credit to the central government, which is net. The banking sector includes monetary authorities and deposit money banks, as well as other banking institutions where data are available (including institutions that do not accept transferable deposits but do incur such liabilities as time and savings deposits). Examples of other banking institutions are savings and mortgage loan institutions and building and loan associations. Market capitalization (also known as market value) is the share price times the number of shares outstanding. Listed domestic companies are the domestically incorporated companies listed on the country's stock exchanges at the end of the year. Listed companies does not include investment companies, mutual funds, or other collective investment vehicles.

Chapter 4: Methodology:

4.1. Introduction:

According to literature, Dynamic panel models play an increasing role in corporate finance research in terms of the importance of adjustment behaviour and the factors affecting target debt ratios. The early studies in the literature employed the Ordinary Least Square (OLS), to estimate determinants of capital structure in cross-sectional data. The availability of data for each company overtime encouraged researchers to utilise panel data models namely Fixed Effect Model (FE) and Random Effect Model (RE). The call for using dynamic panel techniques such as the Generalised Method of Moments (GMM) was driven by the fact that both OLS and FE models may not provide feasible efficient estimates in the presence of dynamic effects (i.e. lagged dependent variable in the model). Hence, OLS tends to produce an upward-biased coefficient while FE produces a downward coefficient. To overcome the drawbacks in both models this thesis utilises the Generalised Method of Moments (GMM) by Arellano and Bond (1991), which is widely used in the literature for estimating a dynamic model in analysing the issue of firm's dynamic capital structure decision (i.e. Flannery and Rangan (2006); Antoniou *et al*, 2008; Huang and Ritter (2009); Flannery and Hankins, 2013). Hence, this chapter focuses on dynamic panel data methods mainly GMM to measure the target capital structure and its speed of adjustment from a sample of Asian firms during the period of 2006 to 2012³¹. There are two GMM estimators, the GMM difference (Arellano and Bover, 1995) and GMM system (Arellano and Bover, 1995 and Blundell and Bond 1998). The two-step GMM-System estimator is employed in this thesis. The main aim of this

³¹ The speed of adjustment is defined as one minus the value of the estimated coefficient of the lag debt ratios in the dynamic capital structure model.

chapter is to explain our selected sample data and methodology models, which comprises of sample set, selected variables, econometric models and its advantages.

This chapter is organised as follows. The first section is to present the sample and both dependent and independent variables from firm-, industrial- and country-specific factors. The second section focuses on discussing dynamic panel data (Generalized Moments of Method). The conclusion follows in the final section at the end of this chapter.

4.2. Data and Samples:

This thesis aims to analyse the capital structure decision from firm-, industrial- and country-specific aspects in Asian countries, namely China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand. The data of these selected firms is collected from both DataStream and Bloomberg that are the most complete databases in the world. More specifically, these listed firms in our sample from China, Hong Kong and Thailand are selected. The listed firms from Indonesia, Malaysia and Singapore are collected from Bloomberg. For each firm, both DataStream and Bloomberg databases were used to obtain annual balance sheet and income statement. Initially, the observed period in our study is for ten fiscal years, which is from 2002 to 2011, covering financial crisis between 2008 and 2009. However, due to constraints of data, at least three consecutive years for each country have to accommodate the requirement for the dynamic model. The data became slim for most countries from 2002 to 2005. Therefore, these years have been dropped from the sample. The final year period in our study is from the period 2006 to 2011.

4.2.1. Sample Set:

The original data is available for the observed period. Initially, in my full sample, 518 firms were identified in the Hong Kong Stock Exchange, 340 listed firms were identified in the Indonesian Jakarta Stock Exchange; 268 listed firms were identified in the Malaysian Kuala Lumpur Stock Exchange; 210 listed firms were identified in the Singaporean Stock Exchange, 206 listed firms were identified in the Stock Exchange of Thailand. 1614 listed firms in the Chinese Stock Exchange including both Shanghai and Shenzhen Stock Exchanges. However, the financial companies usually have unique capital structure due to its much higher liquidity. Thus, all financial companies (i.e. banks, financial firms, investment firms and insurance firms) are excluded from final sample. The final sample deletes all missing numbers and unreasonable figures over the years. In the final sample, in China, there are 1374 firms; in Hong Kong, there are 126 firms; in Indonesia, there are 62 firms, in Malaysia; there are 181 firms, in Singapore; there are 42 firms, in Thailand; there are 145 firms. The total full sample consists of an unbalanced panel of 1930 listed firms over a period of a decade in these six Asian markets.

4.2.2. Explanatory Variables:

On the basis of the objectives of this thesis, the selected variables and their measurement are largely adopted with prior empirical literatures, which is able to provide a meaningful comparison of my finding with existing empirical results in both developed and developing countries. In my study, there are four debt ratios, namely total debt ratio in book value, long-term debt ratio, short-term debt ratio, total debt ratio in market value respectively. According to Demirguc-Kunt and Maksimovic (1999)'s studies, a major difference between developing

and developed countries is that most developing countries have substantially lower amounts of long-term debt ratios compared to developed countries. Additionally, the studies of Bevan & Danbolt (2000) and Song (2005) also find out the significant differences in the determinants of short-term debt and long-term debts, especially, the short-term debt is heavily used in some countries. Hence, in our thesis, total debt ratios are also divided into short-term debt and long-term debt ratios, and it is interesting to examine whether the capital structure decisions are significantly different between long- and short-term finance.

A) The Dependent Variables: the Debt Ratio in Four Measures:

In this thesis, there are four measures of debt ratios that are included. The definition for each one has been shown in the following section. The ten explanatory variables are from the firm-specific, industrial and country-specific aspects. The four dependent variables are selected in my sample. The debt ratios are defined in four different debt measurements, which are total debt ratio, long- and short-term debt ratios and total debt in market value respectively. These four components of debt-to-equity ratio generally capture the key elements of capital structure.

B) Independent Variables in Firm-specific aspect:

Although the factors determining capital structure components are controversial based on existing literature, my study adopts ten firm-specific independent variables that are closely related to theories of capital structure and traditionally considered:

1) Profitability (PROF):

The firm's profitability is obtained by dividing its earnings before interest and taxes (EBIT) by its total assets. This measurement is employed by many empirical studies (i.e. Huang and

Song (2004); Harijono (2005); Mishra (2011)). The majority of studies have shown that profitability is negatively associated with debt ratio, because they are supposed to have more available internal capital based on Pecking Order Theory (POT). More importantly, the firms favour internal over external capital source due to problem of information asymmetry. In addition, according to Modigliani and Miller (1963), the firms probably favour debt over equity, since a more profitable firm tends to take usage of higher debt to gain more tax shield benefits. Therefore, it is expected to have a negative correlation between profit and debt of firms.

2) Tangibility (TANG):

In this thesis, the proportion of fixed asset to total asset as a firm's tangibility is defined. Based on previous empirical results, most results are consistent with the trade-off theory that the firms with more assets should have lower costs since tangible assets can be used as collateral to secure debt. This view has been proved by many empirical works (Rajan & Zingales, 1995, Timan and Wessels (1988), Deesomask *et al.* (2004), Akhtar (2005)). Therefore, an inverse association between tangible asset and debt ratio is expected to be shown in our result.

3) Effective Taxes Rate (TAX):

The effective tax rate is employed by taxes divided by earnings before interest and taxes that is followed by Huang and Song (2006). The factor of tax is one of the most important factors to examine the trade-off theory. Moreover, the tax factor is a crucial issue that has been discussed in trade-off theory. Considering the benefits of tax, a higher percentage of tax that

the company has to pay, higher leverage ratio firms would acquire due to tax shield deducted from interest. Hence, a positive relationship is supposed to be presented.

4) Dividend Payout ratio (DIVIDEND):

This proxy is calculated by dividend per share divided by earning per share in our thesis. To my knowledge, the dividend payout can be regarded as a signal to attract investors to buy more of their stocks. In this way, the firms are supposed to issue more equity. In fact, this prediction is in line with signalling theory that the firms send a signal and they take advantage of the signal to change an investor's decision (Antoniou *et al.* (2008)). Therefore, an inverse relationship between debt and dividend payout is expected to be presented.

5) Market-to-book (MTB):

The proxy of market-to-book ratio is widely used in many literatures (i.e. Banker and Wurgler, 2002; Harijono (2004)). It attempts to identify undervalued or overvalued securities by taking book value and dividing it by market value. This proxy is helpful to identify whether the capital structure decision would take advantage of temporary mispricing behaviour in these Asian markets and whether managers try to time the market. Therefore, market-to-book ratio is supposed to be negatively correlated to debt ratio.

6) Firm size (Size):

The logarithmic transformation of total asset is used as a measurement for the size of firms in most existing studies. This proxy tries to examine whether financing decisions vary with the size of firms. In general, firm size has identified to affect their financing decision in most

literatures (i.e Titman & Wessels, 1988). The proxy of firm size is accounted for by the nature of firms. Literally, the larger firms tend to have lower risk, higher credit rating, and less financial distress. Thus, it is supposed to imply a positive relationship between firm size and leverage.

7) Liquidity (LIQUIDITY):

The liquidity is obtained to measure how much assets firms are able to buy or sell easily. In other words, the proxy of liquidity refers to an asset that can be converted into cash quickly. In order to avoid insolvency, the firms have to secure and maintain a position of liquidity. Therefore, it is safer to invest in liquid assets since it is more guaranteed for investors to get their money back. From this point of view, the proxy of liquidity is one of the most vital factors in exposure credit spread. The higher liquid assets reduce the riskiness of borrowing and cost of financial distress according to the prediction of trade-off theory. Additionally, the liquidity factor is also possible to change a firm's dividend payout policy as a result of more available residual cash. Hence, a positive correlation between capital structure decision and liquidity is expected to be shown.

8) Administration Cost (ADMIN):

The issue of capital structure decisions is developed to test how efficient the capital from internal or external is used to accomplish their goals for a firm's operation and growth. Therefore, the main target of firms is to minimize costs and maximize benefits. The administration cost could be one of the reasons that the firms consider obtaining external

finance. According to prediction of agency cost theory, on the one hand, minimizing cost of administration is able to reduce the conflict between shareholders and creditors, since an inefficient managing method could result in higher bankruptcy costs and the creditors have to undertake higher risks of its consequences as well. On the other hand, a higher administration cost is possible to provide professional control on a firm's activities, which could create more values for shareholders, reduce the likelihood of going bankrupt and keep up an inflow of investment money. Thus, from this point of view, a positive association between administration cost and debt ratio is supposed to be shown. Overall, our hypothesis of impacts of managing cost on corporate finance decisions is still uncertain.

9) Firm Growth (GROWTH):

Since Myers (1977) argues that company value consists of future investment opportunities and assets in place, the majority of empirical studies employ growth potential to affect future investment decision. In my thesis, the proxy of firm growth is obtained by the change of annual sales. Based on existing literature, most studies support a negative correlation between growth opportunity and debt ratio (Rajan & Zingales (1995), Booth *et al.* (2001), Antoniou *et al* (2008), Huang and Song (2006), Deesomsak *et al* (2004), Jong *et al.* (2007), Nivorozhkin (2002)). From both perspectives of trade-off and agency cost, the firm's growth prospect is treated as a sort of intangible asset. Hence, the firms holding good future growth opportunity or firms in a growing industry are supposed to have higher flexibility in terms of future investment. Moreover, they probably prefer to go public from a long-term consideration. It is not only able to share possible risks with more shareholders, but also it is possible for equity market to provide firms with more substantial capital for their future investments. Moreover, Haugen and Baker (1996) also point out that the firms with greater growth opportunity

usually present better share performance. Hence, the negative correlations to both overall debt and long-term debt ratios are expected to be shown and it also could have a positive association with short-term debt ratio.

Table 4.7: The Measurements of the Dependent Debt Ratios and Firm-specific Explanatory Variables in this thesis:

Firm-Specific Variables		Definition
NO. Dependent Variables:		
1)	Total Debt Ratio in Book Value (TDBV)	Total debt in Book value/(Total Equity in BV + Total debt)
2)	Long-term Debt Ratio (LTD)	Long-term Debt/ (Total Equity in BV + Total Debt)
3)	Short-term Debt Ratio (STD)	Total debt - Long-term Debt/ (Total Equity in Book value + Total Debt)
4)	Total Debt in Market Value (TDMV)	Total Debt/ (Total Equity in MV + Total Debt)
Independent Variables:		
1)	Profitability (PROF)	EBIT/Total Asset
2)	Tangibility (TANG)	Tangible Asset/ Total Asset
3)	Growth Opportunity (GROWTH)	(Sales at time T - Sales at time T-1)/ Sales at Time T-1
4)	Effective Tax Rate (TAX)	Tax/EBIT
5)	Dividend Payout Ratio (DIV)	Dividends Per share/ Earning Per Share
6)	Market-to-Book Ratio (MTB)	MV of Equity/ BV of Equity
7)	Firm Size (SIZE)	Logarithm of Total Asset
8)	Liquidity (LIQUIDITY)	Current Asset/ (Short-term Debt + Account Payable)
9)	Administration Cost (ADMIN)	General Administration Cost/ Sales
10)	Stock Performance (RETURN)	(Average Share Price at Year t - Average Share Price at Year t-1)/ Average Share Price at year t-1
11)	Lagged Debt Ratio (LTDBV)	Four Debt Ratios at Year t-1

10) Stock Performance (RETURN):

The stock performance is one of the main factors in the determinants of capital structure decision. Based on Yang *et al.* (2009)'s finding, the proxy of stock performance can be used to explain firms' equity issuance. In this thesis, the proxy of stock performance is the change of average annual stock price. If a firm has a good performance, the stock return would be expected to increase. As Jagadeesh (2000) has suggested, equity issuers have low subsequent returns. In other words, the firms tend to issue equity when the cost of equity is relatively

low. Therefore, an inverse relationship between stock performance and debt level is expected to be shown.

11) Lagged Debt ratios (LDEBT):

The level of debt-to-equity ratio also could affect the capital structure decision of the current year. Even though firms would benefit from a higher debt ratio, the bankers or investors also would force firms to adjust their capital structure and try to reduce the level of indebtedness as a result of asymmetric information of risk and return. As Brounen *et al.* (2006) survey 313 CFOs of European firms, their result has shown that the majority of firms across countries do have the target debt-equity ratio. Moreover, from the perspective of agency cost, higher debts on the board also might push managers to change future investment and choose safer projects so as to avoid more agency costs between shareholders and creditors. What is worse, as the unpredicted risks in a higher indebted situation, it is also possible for the stockholders to change their beliefs on the value of the firm, and their change could further affect the market value of equity. Thus, the lagged debt ratio also has impact on capital structure decision. According to trade-off and Pecking Order Theory (POT), an inverse relationship is supposed to be presented between debt ratios in previous years and current debt level due to the existence of an imbalanced information problem.

4.2.3. The Impact of Industrial Factor on Capital Structure Decision:

The inter-industry has significant differences in terms of the issues of corporate tax rate, business risk, tangible assets, operating costs and growing prospects. From the view of trade-off theory, it has been empirically figured out that the requirement of external finance varies across different industries. For instance, the firms in an industry with greater growth potential

tend to have lower debt ratio, conversely, the firms in a slow-growing industry, they usually have few investment opportunities and are more likely to issue debt. Accordingly, the industry classification and capital structure decision are closely related. Based on existing literatures, our hypothesis in this study is the industrial factor which is supposed to have a significant impact on capital structure decisions.

In my thesis, in order to further examine how industrial factor influences capital structure decision, the firms are classified into nine industrial categories according to industrial criteria based on the standard of Industry Classification Benchmark (ICB) sector level. This classification system is launched by the FTSE Group and Dow Jones Indexes. In our full sample, the summary Table of industrial classifications and its subsector classifications is shown as the following Table 4.8. Overall, according to Table 4.9, it is easy to notice that majority of firms in our full sample mainly come from sectors of industrials, consumer goods and basic materials, which has occupied around 70.3 per cent in total. This result could indicate that the major sectors are still mainly primary and secondary sectors in the full sample.

Table 4.8: The Classification of Industrial Sector in the Full Sample:

General Industry Classification:	Sub-Sector 1	Sub-sector 2
1) Basic Materials	1) Chemicals 2) Basic Resources	1) Chemicals 2) Forestry & Paper 3) Industrial Metals & Mining
2) Consumer Goods	1) Automobiles & Parts 2) Food & Beverage 3) Personal & Household Goods	1) Automobiles & Parts 2) Beverages 3) Food Producers 4) Household Goods & Home Construction 5) Leisure Goods 6) Personal Goods 7) Tobacco
3) Consumer Services	1) Retail 2) Media 3) Travel & Leisure	1) Food & Drug Retailers 2) General Retailers 3) Media 4) Travel & Leisure
4) Healthcare	1) Healthcare	1) Health Care Equipment & Services 2) Pharmaceuticals & Biotechnology
5) Industrials	1) Construction & Materials 2) Industrial Goods & Services	1) Construction & Materials 2) Aerospace & Defence 3) General Industrials 4) Electronic & Electrical Equipment 5) Industrial Engineering 6) Industrial Transportation 7) Support Services
6) Oil & Gas	1) Oil & Gas	1) Oil & Gas Producers 2) Oil Equipment & Services 3) Alternative Energy
7) Technology	2) Technology	1) Software & Computer Services 2) Technology Hardware & Equipment
8) Telecommunications	3) Telecommunications	1) Fixed line Telecommunications 2) Mobile Telecommunications
9) Utilities	4) Utilities	1) Electricity 2) Gas, Water & Multi-utilities

Table 4.9: The Percentage of Firms in Industrial Sector in our sample:

Industrial Classification	Proportion in the full sample (in %)
1) Basic Materials	19.09
2) Consumer Goods	22.53
3) Consumer Services	8.85
4) Healthcare	6.06
5) Industrials	31.73
6) Oil & Gas	2.05
7) Technology	4.90
8) Telecommunications	0.63
9) Utilities	4.15
Total	100

4.2.4. Country and Institutional-specific Factors:

Due to the existence of frictions in the market, the establishment of institutional setting in terms of covenants, law and policy setting could protect investors and reduce potential risks in financing activities so as to reduce the financial distress cost, agency cost and improve information transparency. The existing findings have presented that the firms in various institutional characteristics suggest diverse financing decisions, since external environment is one of the most dominant factors to contribute or constrain how firms choose their external financing sources. Moreover, the existing empirical results also provide evidence that the institutional and country-specific factors can change firm-specific factors, and it would further change the way a firm makes a financing decision (La Porta *et al.* (2000); Gungoraydinoglu and Oztekin (2011); Joeveer (2012), etc.). What is more important, since the Financial Crisis of Asia in 1997, the external financial environment and stability is more developed and improved. As discussed in Chapter Five, the entire financial system is more complete and has strengthened since more policies and legal regulations are implemented and enforced in recent decades. Thus, taking institutional and country-specific factors into consideration is helpful so as to better understand the issue of corporate finance behaviours in the Asian context.

In our sample, both macroeconomic factors and institutional features are employed to examine how macro-economic environment changes corporate finance choices. All country-specific factors in our study are time-variant variables over years and they are selected from Worldbank and Asianbond databases. In the aspect of country-specific factor, four proxies are selected, including the development of stock market and bond market, inflation rate and GDP growth. In the aspect of institutional factors, six main categories are included, comprising of 1) Ease of Access, 2) Information Asymmetry; 3) Power of Law; 4) Financial

Distress Cost; 5) Business Environment; 6) Development of Financial Sector. These variables on institutional features are generally collected from Worldbank, Djankov *et al.* (2003 and 2007), Djankov *et al.* (2008a) and Bloomberg sources. Within this framework, there are also two or three proxies in each group in order to examine how institutional features work in capital structure decisions. The detailed definitions of these country and institutional factors are all presented in the following section.

A) The Country-specific Factors:

Table 4.10: The average value of country-specific factors by country in the sample:

Country	Development of Stock Market (Market capitalization % of GDP)	Inflation, Consumer prices (annual %)	Development of Bond Market	GDP Growth (%)
CH	69.7	2.6	42.3	10.6
HK	417.1	1.1	51.6	4.6
IND	36.7	7.7	18.1	6.6
MAL	137.8	2.4	82.3	5.1
SGP	186.3	2.0	68.5	6.4
THA	69.7	3.3	57.8	3.3

1) The development of stock market:

This proxy aims to examine whether the stock market is a well-functioning developed market, which could influence a firm's financing decision and firm growth. In more developed markets, the stock market tends to be large, more liquid and less volatile. The proxy is measured by the percentage of market capitalization of listed companies to GDP. The market capitalization is the share price multiplied by the number of shares outstanding. In literature, Patel and Sarkar (1998) have found out that the more developed stock market is more likely stable compared to those emerging stock markets. More important, the developed market suffers less severely and recovers quicker compared to those emerging stock markets. Thus, the less well-developed a stock market is, the less equity finance the firms would issue,

since some negative features would present and contain (such as speculation, excessive volatility of share prices, more interferences related to stock price from government, more short-termism, etc.) According to Table 4.10, it can be seen that the development of the stock market in Hong Kong is the most developed, it is dramatically advanced than the rest of the five markets. Moreover, it also has exceeded eleven times compared to the least developed market. Accordingly, based on the prediction of pecking order theory (POT), the stability and riskiness of external financing is priority when they make decisions on capital structure, so an inverse relationship between the development of stock market and debt level is expected to be shown in our result.

2) Inflation Rate:

Inflation rate is one of the most vital macroeconomic variables in economic fluctuation, which is defined as general price levels in an economy over time. From trade-off and equity market timing theories, inflation factor can be employed to examine the impact on price of debt and equity. The creditors demand higher interest rates when inflation goes up, the more expensive a debt would be issued, since purchasing power of currency diminishes. In some empirical studies, Hatzinikolaou *et al.* (2002) argue that the uncertainty of inflation would result in a negative effect on the capital structure of the firm. Therefore, a positive relationship should be presented between the cost of debt and inflation. For example, Corcoran (1977) and Zwick (1977) theoretically explain how inflation leads to a higher debt because of the lower level of real cost of debt. Noguera (2001) also empirically provides a positive correlation between inflation and debt ratio. However, when the inflation rate is growing up to a certain level, the firms are supposed to avoid more debts as an increase of

debt cost. From the theory of equity market timing, firms issue debts when the interest rate on the debt is low compared to past and future interest rate, and inflation factor is one of the most important predictors for future interest rate in the economy. Barry *et al.* (2008) show that the decision of issuing debt is affected by timing in which the interest rate (due to lower inflation rate) is lower than historical level of debt. Frank and Goyal (2009) also suggest that the company tends to issue debt securities when the current inflation is lower or inflation rate will be higher in the future. Hence, it is expected to present an inverse relationship between leverage and inflation. The financing costs are considered as one of the most crucial factors on cost of debt, which could further influence cost of financial distress. Therefore, how inflation affects capital structure decision is still uncertain in the Asian context.

3) The Development of Bond Market:

Similar to development of stock market, the development of bond market is also possible to influence capital structure decision. A more developed bond market is able to facilitate issuing more trading bonds and it could further contribute to higher debt. Moreover, a widening and deepening of various financial markets including stock and bond market could provide a more efficient basis for firm's financing decision. De Jong *et al.* (2008) find that the development of a bond market has a counter-intuitive negative effect on debt ratio. More specifically, the firms from a country with relatively weak bond markets tend to borrow more from banks or government agencies. Fan *et al.* (2012) have presented that the debt maturity is negatively related to the size of government bond market in the developed economies. Moreover, their study also provides evidence that firms would borrow less since a larger government bond sector crowds out private debt capital in developing countries. Besides, a negative coefficient of bond market reflects crowding-out effect, implying that a larger

government bond market crowds out private debt issuance. Therefore, the impact of bond market development on debt ratio is supposed to be positive, a more developed bond market could stimulate firms to make more use of debts.

4) GDP Growth Rate:

The proxy of GDP growth usually defines a country's overall performance. In Booth *et al.* (2001)'s study, their finding found out that real economic growth contributes to growth of total debt ratio and long-term debt ratio in developing countries. Korajezyk and Levy (2002) also note that the factor of macroeconomic conditions accounts for 12% to 51% of firm debt financing decision over time. In an opposite viewpoint, Gajurel (2005) found a negative correlation between economic growth and debt ratio. His finding also shows that a higher economic growth could lead to excessive debt finance. Accordingly, economic growth in terms of GDP growth could change a firm's corporate finance decision.

B) The Institutional-specific Factors:

The definition of country- and institutional features has been shown in Table 4.14. The institutional features in these six categories are time-invariant variables. All proxies across six main institutional categories are collected by country as shown in Table 4.11.

1) Ease of Access:

In this category, it mainly measures whether firms are able to ensure that the investors are able to receive their promised cash flow in a legal environment. This category includes three proxies, which is proxies of creditor right, strength of legal right and investor protection respectively. In literature, Rajan and Zingales (1995) suggest that enforcement of investor

rights reduces external financing cost, the firms issue more debts in an environment with stronger credit right (Levine, 1999). Hence, a firm's capital structure decision could change due to a lower cost of capital under an easier access of capital market.

2) Information Asymmetry:

The problem of information imbalance could increase the difficulty of issuing securities between internal finance cost and external finance cost as the pecking order theory (POT) as many empirical findings have shown (Myers, 1984; Myers and Majluf, 1984). Hence, better accounting information could lead to decreased adverse selection costs and cost of external finance between good and bad investments. For example, in Daouk *et al.* (2006)'s study, the shared information in the equity and debt markets could reduce transaction costs. In our study, the disclosure requirement and credit information proxies are included in this group. The disclosure requirement rule is a law or regulation of the country that is made for providing reports of firms for clients and investors. It helps to improve the transparency of capital and enhances market disciplines since Basel III has been implemented to reduce risks. According to pecking order theory (POT) and trade-off, it is expected that the firms are likely to use more external financing sources with more requirement on disclosure, because the financing environment is more transparent and it contributes to reduced risks of external financial services and credit crisis. In this study, the proxy of disclosure requirement is the dummy variable, the value of 1 presents that the law or regulations require either financial or business interest disclosures, the value of 0 is otherwise.

Another proxy of credit information measures how the rules affect the scope, accessibility and quality of credit information. This index ranges from 4 to 6 in our study. A higher level of score indicates the availability of more credit information to the public and facilitates

lending decisions. If the released published information is truly informative, the firms in a more transparent environment tend to make more use of debts.

Table 4.11: The Measures of Institutional-specific Factors by Country:

Institutional-Specific Factor	China	Hong Kong	Indonesia	Malaysia	Singapore	Thailand
1) Ease of Access						
Creditor Right	2	4	2	3	3	2
Strength of Legal Right	6	10	3	10	10	5
Investor Protection Ranking	98	3	52	4	2	12
2) Information Asymmetry						
Disclosure Requirement	0	1	1	0	0	1
Credit Information	4	5	4	6	4	5
3) Power of Law						
Formalism	3.41	0.73	3.9	2.34	2.5	3.14
Enforcing Contract	19	9	147	30	12	22
Corruption	40	75	32	50	86	35
4) Financial Distress Cost						
Cost of bankruptcy	0.09	0.09	0.18	0.145	0.01	0.36
Time to deal with bankruptcy	1.8	0.63	5.5	2.3	0.58	2.7
5) Business Environment						
Starting a Business	158	5	175	16	3	91
Human Capital (Enrolment in Tertiary Sector)	19.19	43.89	19.95	31.25	NA	45.82
FDI % of GDP	3.1	28.3	2.2	3.2	20.6	2.9
6) Financial Sector						
Non-performing loans % of gross loans	8.76	1.88	6.39	8.06	3.34	8.4
Stability of Stock Price	121.85	35.19	88.66	40.32	35.08	68.8

Note: this Table has shown six groups of institutional factor. In each group, there are two or three proxies to measure. The detailed definition of each proxy has been presented in the Table 4.14. The data is downloaded from WorldBank, Djankov *et al* (2003 and 2007), Djankov *et al* (2008a) and Bloomberg sources.

3) Power of Law:

This group mainly measures how heavily the law regulates commercial behaviours and transaction procedures. Three proxies are included to examine how powerful the law system is, which is formalism, enforcing contract and corruption index respectively. According to Djankov *et al.* (2003)'s definition, the formalism index measures the degree of control or intervention in the judicial process. During this process, the firms would choose to informalization if the costs of formalisation are much higher than its benefits (Loayza, 1997). Moreover, formalization cost is much higher in less developed countries as they have

relatively uncoordinated, more time consuming barriers in terms of more required resources for registering a business. Secondly, the proxy of enforcing contract is measured to examine whether contracting mechanisms could correct any conflicts between shareholders and managers. Also, the enforceability of contract is used to present efficiency of court (Lombardo, 2000). According to literature, the agency costs are higher under a weak enforcement environment (Fan *et al.*, 2012). Consequently, it is expected that firms from a country with stronger enforcement environments should issue more debts due to a better protection and guarantee. In this study, the proxy of enforcing contract is ranking on efficiency of the judicial system. The lower the ranking, the lower the enforceability for legal and order tradition this country is. Last but not least, the proxy of corruption index is mainly defined as the misuse of public right for chasing private gains by making use of discretionary power. In the selected countries, the corruption index is more serious in controlled or regulated economies (i.e. Indonesia and China) than those market-based economies (Hong Kong and Singapore). The corruption factor could have an impact on investment incentives and plans in relation to access to funding resources. Moreover, a higher degree of corruption at country level is possible to create more agency problems and higher cost of capital (i.e. a higher cost of transaction costs or shareholder value).

4) Financial Distress Cost:

The financial distress cost is presented from two aspects, namely bankruptcy cost and time to deal with bankrupt. According to trade-off theory, firms would avoid issuing more debts when cost of financial distress is higher than the benefit of tax savings. In a country with a more efficient and advanced bankruptcy resolution process, this is expected to change a

firm's capital structure decision. Thus, in the assumption, the firms from country under administration with less time and lower costs are supposed to issue more debts.

5) Business Environment:

A friendly business and investment environment could also determine capital structure decisions due to various financing channels provided in the market. In this group, three

Table 4.12(1): The Predicted Relationship between all Selected Factors in our Study and Firm's Debt Ratios under Various Theories:

Explanatory Variables	Measurement	Expected Sign	Predicted Sign in Theories
A) Firm-Specific Factors:			
1) Profitability	EBIT/Total Asset	-	+ (Trade-off and Signalling Theory)/ - (POT); + (Agency costs between Shareholders and Creditors) - (Agency Costs between Shareholders and Managers)
2) Tangibility	Tangible Asset/ Total Asset	-	+ (Trade-Off)/- (POT); + (Agency cost between Shareholders and debtholders)/-
3) Effective Tax Rate	Taxes/ EBIT	+	+ (Trade-Off)
4) Dividend Payout ratio	(Dividends Per Share X No. of Shares)/Net Operating Income	-	+/- (Signalling Theory)
5) Market-to-Book Ratio	MV of Equity/ BV of Equity	-	+/- (Equity Market Timing)
6) Firm Size	Log of Total Asset	-	+ (Trade-off, Agency costs and Signalling Theory), -(POT)
7) Liquidity	Current Asset/ (Short-term debt + Debt Payable + Notes Payable)	+	-(POT)/ + (Trade-Off); - (Agency Costs between shareholders and managers)/+ (Agency costs between
8) Administration Costs	General Administration Cost/ Revenue(sales)	+/-	-(Agency Costs and
9) Growth Opportunity	(Sales at time T - Sales at Time T-1)/Sales at time T-1	+/-	-(POT and Trade-Off); + (Agency costs between managers and shareholders) - (Agency costs between Shareholder and Creditors)
10) Stock Return	(Average Annual Stock Price at T - Average Annual Stock Price at T-1)/ Average Annual Stock Price at T-1	-	- (Equity Market Timing)
11) Lag Debt Ratio	Debt Ratios at year _{t-1}	-	-(Trade-off theory)
B) Industrial-Specific:			
Industrial-Specific	The industry classification is categorized based on Industry Classification Benchmark (ICB), all firms are categorized nine general industry classification in my sample	+/-	Significant Effects (POT, Trade-Off, Agency-Cost)

proxies are chosen, comprising of 1) the ease of starting a business, 2) human capital and 3) FDI % to GDP. The ease of starting a business mainly refers to the time, procedures and cost to do business. In our study, it is expected that the firms from a country where it is easier to do business are supposed to issue more debt due to a more credit-friendly environment and more diverse credit regimes in order to stimulate a more active business environment. Secondly, the proxy of human capital usually measures total enrolment in tertiary education in a country. Generally speaking, the country with better human capital background is expected to have a more advanced social development with a more competitive labour market. More importantly, from another side, the factor of human capital is also relevant to a firm's employment, which is possible to influence a firm's capital structure decisions as well.

Table 4.13(2): The Predicted Relationship between all Selected Factors in our Study and Firm's Debt Ratios under Various Theories:

C) Country Macroeconomic specific Factor:

Explanatory Variables	Measurement	Expected Sign	Predicted Sign in Theories
1) Degree of Stock Market	The variable is defined as the percentage of market capitalization to GDP growth. Total Market Capitalization of Listed Companies / GDP (%) (Listed companies exclude investment companies, mutual funds, or other collective investment vehicles)(The data comes from World Bank database)	-	-(POT)
2) Inflation	Inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency (Data come from World Bank Database)	-	-(Trade-Off and Equity Market Timing)
3) The Development of Bond Market	This indicator shows the size of bond obligations as a percentage of nominal GDP. This variable is calculated by the percentage of total amount of local currency bond market to GDP growth Sub-ratios are computed for bonds issued by government, financial institutions, and corporates. Government bonds include obligations of the central government, local governments, the central bank, and state-owned entities. Corporates comprise both public and private companies including international organizations. Financial institutions comprise both private and public sector banks and other financial institutions. as suggested by de Jong <i>et al.</i> (2008)	+	+(Trade-off theory)
4) GDP Growth	GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products.	+/-	+(Pecking Order Theory and Signalling theory); -(trade-off theory)

D) Institutional Factor:

1) Ease of Access	Proxy: 1) Credit Right 2) Strength of Legal Right 3) Investor Protection Ranking	+	+(Pecking Order Theory and agency cost)
2) Information Asymmetry	Proxy: 1) Disclosure Requirement 2) Credit Information	+	+(Pecking order theory, signalling theory, agency cost)
3) Power of Law	Proxy: 1) Formalism 2) Enforcing Contract 3) Corruption	+/-	NA
4) Financial Distress Cost	Proxy: 1) Cost of Bankruptcy 2) Time to deal with bankruptcy	-	- (Pecking Order theory, Agency cost)
5) Business Environment	Proxy: 1) Starting a Business 2) Human Capital 3) FDI % of GDP	+/-	NA
6) Development of Financial Market	Proxy: 1) Non-performing loans % of Gross loans 2) Stability of Stock Price	+	+(Pecking Order Theory); - (agency cost between managers and shareholders)

Note: The “+” sign specifies a positive correlation between selected variable and firm’s debt ratio. The sign of “-” indicates a negative correlation between selected variable and firm’s debt ratios. The “NA” means that there is no suggestion by theories.

Lastly, the proxy of foreign direct investment (FDI) in a country also plays a role of the private financial flows that are able to diversify funding options for firms. The literature has addressed that the international capital flows could reduce asymmetric information problems better than other types of investments, since the foreign agent has to rely on domestic owners for investment information (Gordon and Bovenberg, 1996). Moreover, the FDIs as external capitals can be considered to change capital structure decision across those multinational firms and it stimulates the output of domestic firms, specifically during the process of privatization under an intensive capital requirement since an increase of competition in the domestic market.

6) Development of Financial Market:

The quality of different financial sectors in the entire financial system also plays a key role in affecting corporate finance decision. In our study, two proxies 1) Non-performing loans and 2) Stability of share price, are chosen to measure banking sector and equity market respectively in order to examine how stability of financial sectors affect financing decisions. Firstly, the proxy of non-performing loans (NPLs) is used to measure quality of bank asset. The NPLs are time-varying, the average value of NPLs over recent decade are chosen and

examine whether there is a link between asset quality and financing behaviour. In general, the issue of capital structure is supposed to be affected by the degree of power on banking sector, since it could facilitate the development of lending relationship and access to credit. In terms of equity market, the volatility of stock market is used to measure the amount of uncertainty or risk on change of security's value. A higher volatility of stock market means a higher degree of dispersion of return, which could imply that there is an association with higher investment risk in the stock market. Generally, a higher degree of volatility shows a higher probability of a declining market (bear market). In contrast, lower volatility corresponds with a higher probability of a rising market. Hence, it is interesting to investigate whether stock market condition could change capital structure decision.

4.3: Econometric Models:

Many prior empirical studies on discussing the issue of capital structure have confirmed that the capital structure decisions are dynamic by nature. Hence, in our study, three methods are adopted to measure how firm-, industrial- and country-specific factors affect capital structure decisions in these six Asian countries in our thesis, including OLS, fixed effect model and GMM estimations. We focus on the result in GMM model to interpret the implication of the determinants of capital structure decision. Besides, our thesis also performs an OLS and fixed effect model.

4.3.1. Pooled Ordinary Least Squares (OLS):

The basic model can be presented as

$$Y_{it} = \alpha + \beta'X_{it} + \mu_{it},$$

$$\mu_{it} = \mu_i + v_i\tau,$$

$$i = 1, \dots, N, \quad t = 1, \dots, T$$

This is a traditional econometric regression model that can be estimated by Ordinary Least Squares (OLS) if the errors μ_{it} are independent across time and individuals with $E_{\mu} = 0$ and $\text{Var}_{\mu} = \sigma^2$. This model in panel analysis is called “pooled regression”. It treats all observations came from the same regression model and ignores the panel structure of the data and simply estimates α and β as

$$\begin{pmatrix} \hat{\alpha} \\ \hat{\beta} \end{pmatrix} \begin{matrix} POLS \\ POLS \end{matrix} = (W'W)^{-1}W'y$$

Where $W = [l_{NT} \ X]$ and l_{NT} is a $NT \times 1$ vector of ones.

However, this model is usually restrictive and unrealistic. Each individual-specific constant α_i is called individual effects, but the OLS omits this fixed effect. The incorporation of each such individual effect is possible to result in a different line for each individual. And the individuals are heterogeneous (i.e. each one may be different). In our cross-sectional data, such heterogeneity problem is hard to be sorted out. In order to accommodate heterogeneity, the error term is decomposed into two independent components μ_i and v_{it} . Based on this model, various assumptions can be used for the properties of μ_i and v_{it} . The simplest assumption is that all μ_i are fixed unknown values. In this way, the μ_i becomes model parameters as with α and β , but it only can be estimated if the T gets large, not for $N \rightarrow \infty$. In statistics, such parameters on which information does not increase as the sample size grows are called incidental parameters. More importantly, the OLS specification is unable to estimate the dynamic model that the coefficient of the lagged dependent variables in the OLS specification is expected to be biased upward, since the unobservable fixed effects in the residual term of the OLS estimation and the potential correlation between fixed effects and the included regressors. In our study, the Stata software is applied by employing procedure of “reg” to generate these estimates.

4.3.2. Fixed Effect Model:

The OLS estimator of α and β is unbiased in small samples. However, in a larger number of individuals (firms) ($N \rightarrow \infty$), the OLS estimation would not be efficient anymore. More importantly, the usual standard errors of the pooled OLS estimator are not valid (i.e.t-, *F-Wald*-). Therefore, the fixed-effect (FE) is developed for analysing the impact of variables that varies over time. The fixed-effect model basically explores the relationship between explanatory variables. And the dependent variable within each firm has their own individual characteristics that might or might not influence the independent variables. Therefore, the FE model assumes that something within the individual may impact biased explanatory independent variables or dependent variable. The fixed-effect estimation removes the effect of those time-invariant characteristics from the independent variables and assesses those independent variables' net effect. Another important assumption of the FE model is that those time-invariant characteristics are unique to individuals and it is not correlated with other individual characteristics. Under this assumption, each error term of entity and the constant (captures individual characteristics) should not be correlated with others. If the error terms are correlated, the FE model is not efficient since inferences may not be correct. Moreover, in fixed effect estimator, if all explanatory variables are strictly exogenous, then a fixed effect estimator will be consistent. In our study, we use the procedure of “xtreg , fe” to generate these estimates in Stata software. The fixed effect model is adopted to yield a downward-biased coefficient estimate for the lagged dependent variable (Nickell, 1981).

The FE model can be expressed by $y_{it} = \alpha + X_{it}\beta + v_i + \mu_{it}$

c_i ($i=1 \dots n$) is the unknown intercept for each company.

y_{it} is the dependent variables where i = company and t = year

X_{it} represents one independent variables (IV)

β is the coefficient for independent variables

μ_{it} is the error term of the firm i in time t

v_i is the unknown intercept for each firm

Furthermore, the FE model can become:

$$y_{it} = \beta_0 + \beta_1 \text{PROF}_{it} + \beta_2 \text{Tang}_{it} + \beta_3 \text{SIZE}_{it} + \beta_4 \text{LIQ}_{it} + \beta_5 \text{ADMIN}_{it} + \beta_6 \text{TAX}_{it} \\ + \beta_7 \text{DIV}_{it} + \beta_8 \text{MTB}_{it} + \beta_9 \text{GROWTH}_{it} + \beta_{10} \text{RETURN}_{it} + v_i + \mu_{it}$$

y_{it} : is the dependent variable where i = company and t = year

$X_{k,it}$ is the determinants of capital structure

β_k is the coefficient for the explanatory variables

μ_{it} is the error term of the firm i in time t

4.3.3. Dynamic Panel Data in GMM:

Many prior empirical studies on the determinants of capital structure decision have suggested that the firm's capital structure decisions are dynamic by its nature. Neither the OLS nor the Fixed-effect (FE) does work in this situation. The OLS estimation omits the fixed effect and ignores panel structure of data, but it generally provides upward-biased coefficient estimation for the lagged dependent variables in the presence of unobserved heterogeneity (Bond, 2002). The fixed effect model is able to control the problem of unobserved heterogeneity, but it ignores the correlation between lagged dependent variable and the regression error term. Following these related studies (i.e. Flannery and Rangan, 2006; Hovakimian *et al.*, 2001), the dynamic panel data method is designed for the situation that the dependent variable is dynamic and depends on their own past realization. In other words, the dynamic model includes lags of the dependent variables as regressors as well. Additionally, the Dynamic Moments of Method is also designed for those samples that have few time periods (T) and many individuals (firms in our case). However, in the OLS estimator, if the dependent

variable and lag of dependent variable are correlated with an error term, it means the estimation of the OLS is biased. Hence, when the orthogonality conditions between error terms and the variables are not likely to be met in the OLS and FE models to produce consistent estimators, there are several ways to deal with it. In general, the dynamic panel data is employed under these four situations:

- 1) The independent variables are not strictly exogenous. In other words, it is possible to correlate with past realization and error term.
- 2) The heteroskedasticity and autocorrelation exist within individuals.
- 3) There are fixed individual effects.
- 4) The data sample has large individuals and few time periods, which is a small T and large N panel.

Under these situations, Anderson and Hsiao (1981) suggested the General Moment of Method (GMM) estimator, which is applied by making an additional assumption that the first differences of instrument variables are uncorrelated with fixed effect. More specifically, the estimation of GMM employs all past information of dependent variable as instrument variables and it first takes differences to get rid of the individual effects. With the introduction of more instruments, it would dramatically improve the efficiency of estimator. The model can be presented as:

$$Debt_{it} = \gamma X_{it} = \delta Debt_{i,t-1} + \mu_{it} \quad (1)$$

Where $Debt_{it}$ is the actual debt for the firm i at year t , γ is coefficient vector, $Debt_{i,t-1}$ is actual debt ratio for firm i at year $t-1$, δ is the correlation coefficient between $Debt_{i,t-1}$ and $Debt_{it}$.

Then the first difference is

$$Debt_{it} - Debt_{i,t-1} = \delta(Debt_{i,t-1} - Debt_{i,t-2}) + (\mu_{it} - \mu_{i,t-1})$$

In this way, the first period in this model starts from $t = 3$, then we can get

$$Debt_{i3} - Debt_{i,2} = \delta(Debt_{i,2} - Debt_{i,1}) + (\mu_{i3} - \mu_{i,2})$$

$Debt_{i1}$ is not correlated with the error and become a valid instrument.

The partial adjustment model for identifying the speed of debt adjustment towards target capital structure can be presented as follows:

$$\begin{aligned} (Debt\ Ratios)_{it}^* &= \beta_0 + \beta_1 PROF_{it} + \beta_2 TANG_{it} + \beta_3 SIZE_{it} + \beta_4 ADMIN_{it} + \beta_5 LIQUID_{it} \\ &+ \beta_6 TAX_{it} + \beta_7 DIV_{it} + \beta_8 MTB_{it} + \beta_9 GROWTH_{it} + \beta_{10} RETURN_{it} \\ &+ \beta_{11} ind\ dummy\ (institutional\ features)_{it} + \varepsilon_{it} \end{aligned} \quad (2)$$

$$Debt_{it} - Debt_{i,t-1} = \delta(Debt_{it}^* - Debt_{i,t-1}) + \varepsilon_{it} \quad (3)$$

Then plug the target debt function (1) or (2) into (3), the rearranged partial adjustment model is as following:

$$\begin{aligned} (Debt\ Ratios)_{it} &= (\delta\gamma)X_{it-1} + (1 - \delta)Debt_{it-1} + \varepsilon_{it} + \mu_i = (1 - \delta)Debt\ Ratio_{it-1} + \delta\beta_0 \\ &+ \delta\beta_1 PROF_{it} + \delta\beta_2 TANG_{it} + \delta\beta_3 SIZE_{it} + \delta\beta_4 ADMIN_{it} \\ &+ \delta\beta_5 LIQUID_{it} + \delta\beta_6 TAX_{it} + \delta\beta_7 DIV_{it} + \delta\beta_8 MTB_{it} + \delta\beta_9 GROWTH_{it} \\ &+ \delta\beta_{10} RETURN_{it} + \delta\beta_{11} ind\ dummy\ (institutional\ features)_{it} + \varepsilon_{it} \\ &+ \mu_i \end{aligned} \quad (4)$$

$$\begin{aligned} (Debt\ Ratios)_{it} &= \lambda Debt\ ratios_{it-1} + \alpha_0 + \alpha_1 PROF_{it} + \alpha_2 TANG_{it} + \alpha_3 SIZE_{it} + \\ &\alpha_4 ADMIN_{it} + \alpha_5 LIQUID_{it} + \alpha_6 TAX_{it} + \alpha_7 DIV_{it} + \alpha_8 MTB_{it} + \alpha_9 GROWTH_{it} + \\ &\alpha_{10} RETURN_{it} + \alpha_{11} ind\ dummy\ (institutional\ features)_{it} + v_{it} \end{aligned} \quad (5)$$

Where $Debt_{it}^*$ is target debt ratio, i indicate the cross-section dimension of firms, t represents the year dimensions. The δ is adjustment speed coefficient. The λ represents $1-\delta$, and α_0 represents $\delta\beta_0$, α_1 represents $\delta\beta_1$, α_2 represents $\delta\beta_2$, α_3 represents $\delta\beta_3$, α_4 represents $\delta\beta_4$, α_5 represents $\delta\beta_5$, α_6 represents $\delta\beta_6$, α_7 represents $\delta\beta_7$, α_8 represents $\delta\beta_8$, α_9 represents $\delta\beta_9$, α_{10} represents $\delta\beta_{10}$, α_{11} represents $\delta\beta_{11}$, v_{it} represents $(\varepsilon_{it} + \mu_i)$, the estimated model finally is presented in equation (5) above. Basically, the General Moments of Method comprises of GMM Difference and GMM System. In this study, the two-step GMM system estimator

(Arellano and Bover, 1995; Blundell and Bond, 1998) is employed. This approach is able to combine a larger set of instruments with respect to a traditional IV estimator or a standard first difference GMM estimator. Hence, it can provide a more efficient result. Also, this method is able to substantially obtain smaller variance of standard error. Moreover, the GMM system also has the advantage of endogeneity robustness and short panel biased (Greene, 2008).

In general, the main advantages of dynamic panel data (two-step GMM system estimator) can be concluded from five major aspects. First, the GMM-system estimator allows addressing econometric problems in panel data with few time periods and many individuals. Second, the GMM model overcomes the limitations of the other models and it does not have a strong assumption on distribution. GMM estimator also corrects the problem that independent variables are not strictly exogenous. It exploits the restrictions of linear moment that follow from the assumption of no serial correlation in the errors. Third, due to existence of autocorrelation in time series and endogeneity in econometric models, the GMM estimation deploys additional instruments by utilising the orthogonality conditions that exists between the disturbances and the lagged values of dependent variable to solve heteroskedasticity and autocorrelation problems within individuals. Fourth, the GMM-System estimator also overcomes the problem of weak instruments found in the GMM-Difference model. It further has the advantages of robustness to endogeneity and short panel bias (Greene, 2008). Fifth, GMM-System two-step takes advantage of one-step residuals to construct asymptotically optimal weighting matrix. Thus is considered more efficient than one-step estimators hence it controls for the correlation of errors overtime, heteroscedasticity across firms in a large sample data (Roodman, 2009).

In order to examine whether the industry and country factors are likely to play an important role in determining the capital structure decision, the industry and country dummies are also included in the models. The serial correlation and the residuals are also checked and show the results by first-order (AR1) and second-order (AR2) autocorrelation in the result. It should be autocorrelation of first order but not second order. In addition, in the result, we also present the Sargan statistic as the tests of validity of the over-identifying restrictions. In Stata, the `xtabond2` command is applied to estimate.

4.4: Conclusion:

Many prior empirical studies on discussing the issue of capital structure have confirmed that the capital structure decisions are dynamic by nature. Since the same assumption is considered in thesis a Two-step GMM system estimator is applied in this thesis. This method allows to controlling for the unobserved individual effects which is present in static model. It also takes advantage of instruments to avoid the problems of endogeneity and autocorrelation problems. The GMM-System estimator also overcomes the problem of weak instruments found in the GMM-Difference model. It further has the advantages of robustness to endogeneity and short panel bias (Greene, 2008). The two-step GMM-System estimator takes advantage of one-step residuals to construct asymptotically optimal weighting matrix. Thus is considered more efficient than one-step estimators hence it controls for the correlation of errors overtime, heteroscedasticity across firms in a large sample data (Roodman, 2009).

Table 4.14 The Measurements of Selected Variables, Expected signs and its Findings in Existing Studies:

Explanatory Variables	Measurement	Expected Sign	Predicted Sign in Theories
A) Firm-Specific Factors			
1) Profitability	EBIT/Total Asset	-	+ (Trade-off and Signalling Theory)/ - (POT); + (Agency costs between Shareholders and Creditors) - (Agency Costs between Shareholders and Managers)
2) Tangibility	Tangible Asset/ Total Asset	-	+ (Trade-Off)/- (POT); + (Agency cost between Shareholders and debtholders)/-
3) Effective Tax Rate	Taxes/ EBIT	+	+ (Trade-Off)
4) Dividend Payout ratio	(Dividends Per Share X No. of Shares)/Net Operating Income	-	+/- (Signalling Theory)
5) Market-to-Book Ratio	MV of Equity/ BV of Equity	-	+/- (Equity Market Timing)
6) Firm Size	Log of Total Asset	-	+ (Trade-off, Agency costs and Signalling Theory), -(POT)
7) Liquidity	Current Asset/ (Short-term debt + Debt Payable + Notes Payable)	+	-(POT)/ + (Trade-Off); - (Agency Costs between shareholders and managers)/+ (Agency costs between managers and shareholders)
8) Operating Costs	Operating Expenses/ Revenue (Sales)	-	- (Trade-off theory and Agency Costs)
9) Administration Costs	General Administration Cost/ Revenue(sales)	+/-	-(Agency Costs and
10) Growth Opportunity	(Sales at time T - Sales at Time T-1)/Sales at time T-1	+/-	-(POT and Trade-Off); +(Agency costs between managers and shareholders) - (Agency costs between Shareholder and Creditors)
11) Stock Return	(Average Annual Stock Price at T - Average Annual Stock Price at T-1)/ Average Annual Stock Price at T-1	-	- (Equity Market Timing)
12) Lag Debt Ratio	Debt Ratios at year _{t-1}	-	-(Trade-off theory)
B) Industrial-Specific			
Industrial-Specific	The industry classification is categorized based on Industry Classification Benchmark (ICB), all firms are categorized nine general industry classification in my sample	+/-	Significant Effects (POT, Trade-Off, Agency-Cost)
C) Country-specific Factor:			
1) Development of Stock Market	Total Market Capitalization of Listed Companies / GDP (%) (Listed companies exclude investment companies, mutual funds, or other collective investment vehicles)(The data comes from World Bank database)	-	- (POT)
2) Inflation	Inflation as measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency (Data come from World Bank Database)	-	-(Trade-Off and Equity Market Timing)
3) The Development of Bond Market	This indicator shows the size of bond obligations as a percentage of nominal GDP. Sub-ratios are computed for bonds issued by government, financial institutions, and corporates. Government bonds include obligations of the central government, local governments, the central bank, and state-owned entities. Corporates comprise both public and private companies including international organizations. Financial institutions comprise both private and public sector banks and other financial institutions. as suggested by de Jong <i>et al.</i> (2008)	+	+ (Trade-off theory)
4) GDP Growth	GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products.	+/-	+(Pecking Order Theory and Signalling theory); - (trade-off theory)
D) Institutional Factor			
1) Ease of Access	Proxy: 1) Credit Right 2) Strength of Legal Right 3) Investor Protection Ranking	+	+(Pecking Order Theory and agency cost)
2) Information Asymmetry	Proxy: 1) Disclosure Requirement 2) Credit Information	+	+(Pecking order theory, signalling theory, agency cost)
3) Power of Law	Proxy: 1) Formalism 2) Enforcing Contract 3) Corruption	+/-	NA
4) Financial Distress Cost	Proxy: 1) Cost of Bankruptcy 2) Time to deal with bankruptcy	-	- (Pecking Order theory, Agency cost)
5) Business Environment	Proxy: 1) Starting a Business 2) Human Capital 3) FDI % of GDP	+/-	NA
6) Development of Financial Market	Proxy: 1) Non-performing loans % of Gross loans 2) Stability of Stock Price	+	+ (Pecking Order Theory); - (agency cost between managers and shareholders)

Chapter 5: Empirical Finding Analysis: the Impact of Firm-specific Factors:

5.1. Objective of this Chapter:

There is abundant literature on capital structure decision and its determinants, however most of it is confined to studies based on developed countries. The evidence from emerging economies is growing, but more evidence is needed from these countries because of the rapid rate of change in their financial and economic environment. The Asian countries selected for investigation in this thesis present a valuable addition to the literature. The aim of this chapter is to extend the existing literature on emerging economies by providing an empirical analysis of the impact of firm-specific factors on firm's capital structure decision. The analysis also compares the speed at which the capital structure in these countries is adjusted by providing evidence from four different debt ratios in the Asian market. The chapter uses dynamic panel data techniques that are commonly used in the literature and have been proven to be appropriate in answering the research aims of this chapter. The chapter provides additional analysis by discussing the fluctuations in four debt measures over the sample years. The effect of firm size on capital structure decision is of special importance, thus firm size is decomposed into three groups (large-, medium- and small-sized). It is important to understand whether the long- and short-term debt ratios vary across firm size. The chapter also provides a robustness check to examine the validity of results by splitting the full sample according to several criteria: 1) Firm Size; 2) The Degree of Indebtedness; and 3) Crisis and Non-crisis periods, to discover greater insights into Asian firms' financing behaviours.

This chapter is organized as followings: the following section provides analysis of four debt measures in the sample. The third section discusses the empirical results. The conclusion summarises the aims and findings of the chapter.

This chapter is organized as followings: the following section provides analysis on four debt measures in the sample across years. The third section discusses the empirical results. The conclusion section at the end summarises the aims and findings of the chapter.

5.2. Sample and Data Analysis:

5.2.1. Descriptive Statistics:

Table 5.15: The Description of Sample Countries and Years:

The Table 5.15 provides a description of the sample in terms of the number of years for each country, the number of firms in each country, and total number of individuals across the years in each country.			
Country	Number of years in the Sample	Number of firms in the sample	Firm-Years
China	6	1374	3074
Hong Kong	6	126	584
Indonesia	6	62	130
Malaysia	6	181	587
Singapore	6	42	183
Thailand	6	145	326
Total In the Full sample	6	1930	4884

Table 5.16: Descriptive Statistics of Both Debts and Firm-specific Factor:

Variable	Observations	Mean	Std. Dev.	Min	Max
year	4884	2008	3	2006	2011
Dependent Variables:					
Total Debt in Book Value (%) (TDBV)	4884	41	19	0.49	98.6
Long-term Debt (%) (LTD)	4884	8	11	0	58.1
Short-term Debt (%) (STD)	4884	18	15	0	82.89
Total Debt in Market Value (%) (TDMV)	4884	30	19	0.14	96.7
Independent Variables					
Profitability (%) (PROF)	4884	6.4	6.56	-19	84.2
Tangibility (%) (TANG)	4884	90.1	0.17	16	100
Effective Tax Rate (%) (TAX)	4884	18.2	13.4	0	69.8
Dividend Payout (%) (DIV)	4884	27.7	26.7	0	99.9
Market-to-Book (MTB)	4884	2.6	2.09	0.13	14.9
Firm Size (SIZE)	4884	6.1	1.3	2.3	11.5
Liquidity (LIQUIDITY)	4884	2	1.78	0.3	14.9
Administration Cost (%) (ADMIN)	4884	5.7	0.05	0.05	52.4
Growth Opportunity (%) (GROWTH)	4884	24.4	73.92	-91.7	441
Stock Performance (%) (RETURN)	4884	15.93	62.4	-93.81	281

Note: The definition of each variable is as following: This Table provides the mean, standard deviation, minimum and maximum values of each variable in the sample. Four Dependent Variables: total debt in book value (%) (TDBV) is total debt divided by total debt and total shareholder equity in percentage; long-term debt (%) (LTD) is long-term debt divided by total debt and total shareholder equity in percentage; total short-term debt (%) (STD) is short-term debt divided by total debt and shareholder equity in percentage; total liability in market value (%) (TDMV) is total debt divided by total debt and market capitalization in percentage. Ten Independent Variables: Profitability in % (PROF) is EBIT divided by total asset; tangibility in % (TANG) is tangible asset divided by total asset; Effective Tax rate in % (TAX) is income tax expenses divided by pretax income; Dividend payout ratio (DIVIDEND) is dividend per share divided by earning per share; Market-to-Book (MTB) is market value per share divided by book value per share; liquidity in % (LIQUIDITY) is current asset divided by current liability; Administration Cost in % (ADMIN) is the percentage of total administration expenses to total asset; Growth opportunity in % (GROWTH) is the change of total revenue in percentage; Stock Performance (RETURN) in % is the change of stock price in percentage.

5.2.2. Analysis and Discussion of Four Debt Ratios:

- *All debt ratios in the full sample across years:*

The Table 5.17 shows the evolution of the degree of indebtedness using four debt ratios in the sample during the last decade. Interestingly, the short-term debt ratios are on average around twice as large as the long-term debt ratio from 2006 to 2011. Moreover, it is also noticeable from the median values of total debt in book value and market value, that short-term debt ratios had a relative fall between 2006 and 2011. In particular, the median values of short-term debt ratios show a dramatic reduction from 17 per cent to 11.9 per cent in these six years. In regard to market measures of debt ratios, it can be seen that all market values are lower than debt ratios in book value as a result of their high market capitalization. Overall, the emerging markets with lower levels of financial reforms or financial openness tend to have levels of corporate leverage below 50%, indicating that firms in these economies face lower risk of financial distress and thereby less adverse effects on firm profitability and productivity relative to their counterparts in advanced economies (Mallick and Yang, 2011).

From Table 5.18 it can be seen that a large gap between short-term debt and long-term debt ratios exists and that short-term debt is a major portion of total debt ratio. It is interesting to see whether the short- and long-term debt ratios vary across various firm sizes. According to existing literature, there are several different definitions of firm size, such as number of employees, market capitalization, total asset, turnover, etc. In this thesis, in order to generate a picture of indebtedness across different firm sizes, the total asset is chosen to measure firm size, and classified into three firm size groups. In the full sample, three categories of firm size are shown in Table 5.18.

Table 5.18 shows the three debt ratios in book value across different firm sizes. In the full sample, the most striking finding is that the total debt ratio and short-term debt ratios have no

significant change across different firm sizes. However, it is surprising that the short-term debt ratios for those medium and small-sized firms are greater than those of large firms. More importantly, different from short-term debt ratios, the levels of long-term debt ratios for the medium and small firms (SMEs) are dramatically smaller than those large-sized firms. To sum up, the long-term debt ratios for large-sized firms have reached around 15 per cent, whereas it is only approximately 4 per cent in small-sized firms. This result also indicates that larger firms are more likely to acquire more both long- and short-term debts in their operations, which is consistent with some existing findings (i.e. Barclay and Smith, 1996; Barton *et al*, 1989; Al-Sakran, 2001; Hovakimian *et al*, 2004, etc). Motivated by this finding, in order to further investigate the changes of long- and short-term debt ratios across these selected years, Table 5.19 and Table 5.20 below show the changes of long- and short-term debt ratios in these Asian countries.

Interestingly, Table 5.19 reveals that the long-term debt ratios for large firms have a declining trend across the recent decade in terms of mean values, whereas the median values are relatively volatile over sample years. In terms of medium and small-sized firms (SMEs) in the full sample, the long-term debt ratios for the medium-sized firms are relatively stable in terms of both mean and median values over years. For small-sized firms, the data demonstrates an upward trend from 2006 to 2007 which reached the peak by the end of 2007 before the explosion of the financial crisis in 2008; it then turned into a dramatic decline which reached a low point of 3 per cent by the end of 2011. Moreover, it can be noticed that the median values for small firms are low as a result of their lower level of long-term debt ratios when compared to large- and medium-sized firms. It also can be noticed that the long-term debt has no significant change during the crisis years from 2008 to 2009. Overall, the

standard deviations for medium-sized firms are relatively stable, whereas it is rather volatile for both small- and large-sized firms.

In terms of short-term debt ratios across these years, first, as Table 5.20 shows, that small- and medium-sized firms reduce their short-term debt dramatically, whereas the short-term debt ratios increase twice by the end of 2011 for large firms. Second, the volatility of short-term debt ratios for the medium-sized firms is rather stable, whereas it fluctuates for small- and large-sized companies, in particular for those large-sized firms. Last, it is noticed that the median values for small firms dramatically declined between 2007 and 2010, which more than halved during these six years. In addition, different from long-term debt ratios, it can be seen that the short-term debt ratios declined for SMEs firms during recession year of 2008 and 2009, while it did not change for those large-sized firms in these two crisis years.

Table 5.17: Four Debt Ratios across Years:

Year	TDBV (%)		LTD (%)		STD (%)		TDMV (%)	
	Mean (%)	Median (%)	Mean (%)	Median (%)	Mean (%)	Median (%)	Mean (%)	Median (%)
2006	43.3	44.9	8.2	3.4	19.5	17	34	34.1
2007	40.7	41.8	9.2	4.6	16.8	13.0	23	20.1
2008	42.0	41	8.7	4.5	18.5	16.3	36	34.1
2009	41.67	42.3	9.3	4.5	16.5	13.3	27.1	22.6
2010	41.3	42	9.4	4.1	15.5	11.8	25.6	21.6
2011	40	39.8	8.6	3.4	15.8	11.9	30.2	26.8
Average	41.9	42.64	8.2	3.6	18.1	16.1	30.4	28.05

Note: **TDBV** in %: total debt/total debt + total shareholder equity in percentage. **LTD** in %: Long-term debt/total debt + total shareholder equity in percentage. **STD** in %: Short-term debt/total debt + total shareholder equity in percentage. **TDMV** in %: total debt/ total debt + total market capitalization in percentage.

Table 5.18: Four Debt Ratios in Book Value and Firm Size:

Firm Sizes	TDBV (in %)		LTD (in %)		STD (in %)	
	Mean	Median	Mean	Median	Mean	Median
L	49	50	15	13	14	11
M	42	43	7	3	19	17
S	34	34	4	0.6	17	15

Note: **TLBV** in %: total debt/total debt + total shareholder equity in percentage. **LTL** in %: Long-term debt/total debt + total shareholder equity in percentage. **STL** in %: Short-term debt/total debt + total shareholder equity in percentage. Large firms: total asset of firms is larger than 52.65 million on average in the full sample. Medium firms: total asset of firms is between 1.35 million and 52.65 million on average in the full sample. Small firms: total asset of firms is less than 1.35 million on average in the full sample.

Table 5.19: Long-term Debt Ratios and Firm Size across years:

Year	LTD in % (Small Company)			LTD in % (Medium Company)			LTD in % (Large Company)		
	Mean (%)	STD (%)	Median (%)	Mean (%)	STD (%)	Median (%)	Mean (%)	STD (%)	Median (%)
2006	4	8	0	8	11	4	15	13	14
2007	7	10	1	8	10	3	15	13	16
2008	5	8	0	7	10	4	16	12	16
2009	5	8	0	8	11	4	16	13	17
2010	3	6	0	8	10	4	14	12	14
2011	3	6	0	7	10	3	14	11	17
Average	4.5	7.7	0.2	7.7	10.3	3.7	15	12.3	15.7

Note: **LTD** in %: Long-term debt/total debt + total shareholder equity in percentage. Small firms: total asset of firms is less than 1.35 million on average in the full sample. Medium firms: total asset of firms is between 1.35 million and 52.65 million on average in the full sample. Large firms: total asset of firms is larger than 52.65 million on average in the full sample.

Table 5.20: Short-term Debt Ratios and Company Size across years:

Year	STD in % (Small Company)			STD in % (Medium Company)			STD in % (Large Company)		
	Mean (%)	STD (%)	Median (%)	Mean (%)	STD (%)	Median (%)	Mean (%)	STD (%)	Median (%)
2006	20	16	17	21	15	20	13	11	9
2007	18	15	14	18	15	16	11	10	8
2008	17	15	14	21	16	19	15	11	12
2009	14	12	10	19	16	16	15	12	11
2010	13	14	8	17	15	13	14	12	12
2011	13	14	10	16	16	12	16	12	13
Average	16	14	12	18.7	15.5	16	14	11	11

Note: **STD** in %: Short-term debt/total debt + total shareholder equity in percentage. Small firms: total asset of firms is less than 1.35 million on average in the full sample. Medium firms: total asset of firms is between 1.35 million and 52.65 million on average in the full sample. Large firms: total asset of firms is larger than 52.65 million on average in the full sample.

Table 5.21: Four Debt Ratios between in crisis & no crisis Periods:

A) In Crisis Period											
TDBV (%)			LTD (%)			STD (%)			TDMV (%)		
Mean	Median	Std Dev	Mean	Median	Std Dev	Mean	Median	Std Dev	Mean	Median	Std Dev
42	42	19.3	9	5	11	17	14	14.6	32	28	20.1
B) No Crisis Period											
TDBV (%)			LTD (%)			STD (%)			TDMV (%)		
Mean	Median	Std Dev	Mean	Median	Std Dev	Mean	Median	Std Dev	Mean	Median	Std Dev
41	42	18.7	9	4	10.6	17	13.4	14.8	28.2	26	18.4

Note: TDBV in %: total debt/total debt + total shareholder equity in percentage. LTD in %: Long-term debt/total debt + total shareholder equity in percentage. STD in %: Short-term debt/total debt + total shareholder equity in percentage. TDMV in %: total debt/total debt + total market capitalization in percentage. In crisis period is defined as the years between 2008 and 2009. No crisis period is defined as the years from 2006 to 2007 and from 2010 to 2011.

Table 5.22: The Debt Ratios between In Crisis and No crisis Periods by Country:

Debt Ratios	China	HK	IND	Mal	SGP	THA
A) Normal Period						
TDBV(%)	46	40	40	24	31	42
LTD(%)	7	12	8	6.6	18	10.8
STD(%)	21	9	10.3	17	13	11
TDMV(%)	30	31	32	26	23.7	35
B) Crisis Period						
TDBV(%)	47	40	42	20	29	41
LTD(%)	8	11	11	6	16	11
STD(%)	21	10	10.7	14	13	12
TDMV(%)	30	33	43	26.7	22.8	43

Note: TLBV in %: total debt/total debt + total shareholder equity in percentage. LTL in %: Long-term debt/total debt + total shareholder equity in percentage. STL in %: Short-term debt/total debt + total shareholder equity in percentage. TLMV in %: total debt/total debt + total market capitalization in percentage. Normal Period: the years in no-crisis period (from 2006-2007 and 2010-2011). Crisis Period: the years in crisis period (between 2008 and 2009).

5.3. The Determinants of Firm-specific Factors on Capital Structure Decision:

5.3.1. Empirical Results:

As trade-off theory suggests, firms have a target capital structure and they will adjust their optimal capital structure to meet this. The speed of adjustment towards optimal capital structure usually means the effects of lagged debt ratios at previous periods on the current debt ratios in the current year. Moreover, the speed of adjustment towards the target is also related to the cost of adjustment and the cost of being off-target (Hovakimian, Opler and Titman, 2011). If a coefficient is positive and below the unity coefficient, this suggests that the firms have their target capital structure and that they are adjusting their capital structure well. Conversely, if a coefficient is greater than one, this implies that firms do not have any optimal debt ratios.

Our results reveal that there is a significant and positive correlation of lagged debt ratios on capital structure decision across all four debt ratios in the full sample. All coefficients are between 0 and 1 across these four debt ratios, which indicates that there is a dynamic capital structure for these selected Asian firms and that they are adjusting their capital structure to the desired level over time. In the estimation of total debt in book value, as the regression result has shown, the coefficient value is greater than zero (0.806) in the GMM estimator.

From this it can be concluded that the adjustment of capital structure decision from year $t-1$ to year t falls short in attaining the target capital structure. Moreover, the speed of adjustment is defined as one minus the value of the estimated coefficient of the lag debt variable in the dynamic capital structure model. As can be seen in the Table 5.23, the coefficient of lagged total debt ratio in book value is small ($1-0.806=0.194$). This provides evidence that the speed of adjustment on overall debt towards target total debt ratio is moderate in Asia. In terms of long term parameters, it can be seen that the coefficient value is still greater than zero (0.699), implying that there is an optimal capital structure in the long-term financing pattern. However, comparing this with total debt ratio in book value, the magnitude of its adjustment coefficient ($1-\lambda_0$) is relatively small at 0.301. In terms of market value, its speed of adjustment is similar to book value, which is only 0.221 ($1-0.779=0.221$). This provides evidence that for these Asian firms the adjustment of total and long-term debt ratios towards the target level of capital structure is relatively slow. In fact, for speed of adjustment this slow, another explanation could be that the cost of being off-target is relatively low compared to the cost of adjustment in total and long-term debt ratios. Comparatively, with regard to short-run parameters, the magnitude of the adjustment coefficient is relatively larger ($1-0.605=0.395$), which indicates that the cost of being off-target relative to the cost of adjustment on short-term debt is high. On the whole, the agency cost of long-term finance is lesser than short-term banking finance, since the Asian firms tend to adjust slowly towards their optimal long-term debt level, with a relatively reduced agency cost. Overall, our results reveal the presence of dynamic capital structure decision in these Asian countries and that the speed of adjustment is a trade-off between the cost of adjustment and the cost of being off-target.

1) Profitability:

In existing empirical findings, the effect of profitability on capital structure decision is ambiguous. In our full sample, the profitability (**PROF**) has a significantly negative relationship to all four debt ratios in Asian firms. First, this result has further demonstrated the majority of empirical evidence, that the firms with greater profitability tend to have lower debt level, is consistent with the prediction of pecking order theory (POT) that firms prefer to use internal capital rather than external capital. Moreover, it also indicates that external capital is costly and that the firms would make corporate finance decision from the consideration of cost and risk. Second, a strongly negative correlation also indicates the existence of imbalanced information, which also suggests that the problem of information asymmetry is still a leading factor in influencing firms' financing decisions in Asia.

2) Tangibility:

According to the predictions of pecking order theory (POT), and many existing empirical findings, the more fixed assets a firm has, the lower the level of leverage they tend to use. Our results demonstrate that the Asian firms holding more tangible assets are less likely to be prone to asymmetric information problems, thus preferring internal capital over external finance (e.g. Daskalakis and Psillaki (2008); Crnigoj and Mramor (2009); Kaadeniz *et al* (2009); and Sheikh and Wang (2011)). Interestingly, as seen in Table 5.23, there is no significant association between tangible asset (**TANG**) and total debt ratio. However, there is an inverse association between tangible asset and long- and short-term debt ratio. This result is in contrast to most developed economies (i.e. United Kingdom, German and Japan) (Antoniou *et al.*, 2008). The tangible assets in this thesis refer to those “fixed” tangible assets that are illiquid (i.e. land, building and machinery and equipment, etc.). The firms with more

“hard” assets are probably not regarded as having “security” to obtain more short-term banking loans. In fact, the finding of Campello and Giambona (2013) also has shown that only redeployable components of tangible assets are related to capital structure decision. On the whole, this result has implied the existence of agency cost on both short- and long-term finance, the firms with less collateralizable assets are possible able to choose higher levels of debt in order to limit a manager’s personal benefits. This result is consistent with Sheikh and Wang (2011).

3) *Effective Income tax:*

In the trade-off theory, the impact of tax should be an important aspect of capital structure decision. The tax deduction of interest payment is allowed by issuing debt. More debts as a means of financing way to be used, the more tax deductibility of the debt payments can be saved from tax payments, thus, a positive association between tax rate and capital structure should be presented. In our case, the effective tax rate (**TAX**) does not present a significant correlation to any of our four debt ratios. The theory of tax benefit does not seem to hold in our sample. This result could be explained by several factors. First, the influence of tax also is determined by tax policy. For instance, the tax systems in some countries favour earnings rather than dividend pay-out (i.e. those following a French system) or vice versa (i.e. those following a German or British system) (Antoniou *et al.*, 2008). Second, it could be explained by a divergence of corporate income tax system across countries and regions. From the complexity of corporate tax systems across different regions in terms of the nature of business, welfare and various industries it is possible to have a higher cost of debt, while a dramatic growth of international capital flows in these East Asian countries also might provide more financing opportunities for tax avoidance. As a consequence, the tax advantage

is not cost-saving under all these conditions. A study of Internal Monetary Fund (Mooij, 2011) also has discovered that an increasing debt bias of tax has led to the elimination of tax advantages due to the considerations of legal, administrative, and economic factors.

4) Dividend Pay-out Ratio:

The dividend pay-out ratio (**DIV**) has an inverse association with total debt ratio. The dividend pay-out is a signal of potential future growth. The firm's cost would be lower over debt, since high-dividend-paying firms benefit from a lower equity cost of capital. In addition, the Asian firms with higher dividend pay-outs could face a higher level of risk by creditors, which further results in higher agency cost between creditors and shareholders. More importantly, the pay-out ratio and capital structure are more likely to rely on country-specific factors beyond the control of firms. For example, Antoniou *et al.* (2008) stated that the firms in a bank-based system are inclined to closely tie with their lenders over those firms under a market-based system; hence, they are likely to choose more debts rather than issuing shares.

5) Market-to-Book ratio:

The existing literature shows that the market-to-book proxy (**MTB**) is usually used to measure potential investment opportunities or examine whether market prices are overvalued or not. According to equity market timing theory, firms tend to issue more equity when the firm is overvalued. In other words, the firms with higher market value tend to make more use of equity rather than debt (see Chen and Zhao, 2004 and Bessler *et al.*, 2011). Interestingly, our result shows a contrasting result in that the market-to-book ratio is significantly positively associated with total debt book value and short-term debt ratio. The firms with a higher market value tend to utilise more short-term banking loans. This finding might shed light on

the lending policy in the banking system, which also relies upon the performance of firms in a capital market. In the Asian financing environment, firms with a higher market value more easily qualify and obtain funding from creditors. Another aspect to consider is prediction of signalling theory, where a firm with a higher market value implies, as a sort of positive signal, high growth potential and low information costs when raising public debt or issuing shares in capital market, since high growth is usually associated with proprietary information (Yosha, 1995). In addition, this positive correlation also exists in short-term estimations, which also suggests that short-term banking loans are supposedly preferred over capital market³². This result is in line with the finding of Barclay and Smith (1996) and empirically confirms that firms with more investment opportunities tend to use more short-term debt instead of long-term bond finance.

6) Firm Size:

With regard to total debt in book value, the firm size (**SIZE**) is significantly positively correlated to total debt in book value. This result implies that the borrowing capacity of these Asian firms is strongly influenced by firm size as an indicator of the probability of bankruptcy. This could be because bankruptcy risk plays a vital role when the firms consider applying external debt. This finding is reported in numerous studies (e.g. Rajan and Zingales (1995); Antoniou *et al.* (2008); Mao (2003); and Flannery-Rangan (2006)). Larger firms might have more chances to diversify their investment, and are not likely to fail on a broader basis and enjoy the benefits of being too important to fail. More specifically, larger firms will usually benefit more from diversified business lines, which could limit their exposure risks to cyclical fluctuations. Moreover, the magnitude of the coefficient, almost 0.84, is a relatively

³² In most cases, the short-term debts refer to bank loans and long-term debt usually refers to corporate bonds.

large within the GMM estimate of total debt model. To some extent, a strongly positive relationship between firm size and capital structure decision might also indicate that bankruptcy and financial distress cost are two of the most important determinants in capital structure decision. On the one hand, this argument could be highly relevant to weak legal protection from firm bankruptcy. On the other hand, it probably also indicates that the bankruptcy process in these Asian countries is lengthy and costly.

In terms of long- and short-term debt ratio, the empirical finding has shown that firm size is still positively correlated with both of them. In other words, the larger firms tend to use more long-term bonds and short-term banking loans, which confirms the prediction of pecking order theory (POT). It also suggests that the SMEs are supply-restricted, since the long-term borrowing is still hard to access for small business, although new policies have been implemented and developed in these Asian countries in recent years to provide more financing to SMEs. This finding could have three interpretations. First, it could indicate that smaller firms usually suffer greater problems of information asymmetry, because it is costly and difficult to obtain complete information for new and smaller firms. Second, this result implies that long-term credit bonds are a constraint due to the supply limitations on macroeconomic and institutional factors (e.g. limitation of supply, lack of laws relating to investors or providers of funds, underdevelopment of accounting and auditing systems, banking industry competition, etc.). In particular, the long-term bonds are also even more difficult to obtain for smaller firms in developing countries. Thirdly, those SMEs could take more advantages of short-term loans so as to overcome information and credit problems and develop a long-run credit relationship. In fact, this result is consistent with our earlier discussion, as Tables 5.19 and 5.20 have shown that large firms have much higher long-term debt ratios, whereas SMEs have greater short-term debt ratios.

7) Liquidity:

The Liquidity factor (**LIQUIDITY**) is regarded as a way to measure the ability of firms to meet their financial obligations and their capacity to pay to their creditors using their available assets. According to our results, it can be seen that liquidity is significantly negative to total debt, short-term debt ratios and market value ratio, whereas it has no significant correlation to long-term debt ratio. This finding is consistent with the prediction of pecking order theory (POT). The firms with more liquid assets have a lower level of external capital, which shows that firms with greater liquidities prefer to use internally generated earnings for future investments, and is consistent with some studies (i.e. Deesomsak *et al.*, 2004 and Mazur, 2007). There is even a prevalence of bank loans in the Asian financial system but they still receive less leverage when they stay at a higher level of liquidation. Diamond (1991, 1993) and Sharpe (1991) also have developed a model that a suboptimal liquidation decision could be made by too much debt maturing in the short-term period. Moreover, a negative correlation between liquidity and market value also suggests that firms will avoid external equity finance, since liquid resources (excess cash or reserves) exist. Theoretically, the costs of equity are lower with an increased liquidity, which makes equity finance more attractive. However, this contrasting result further sheds light on the fact that the Asian firms would still rather choose internal capital as priority over external finance due to many uncertainties in terms of higher risk and the costs imposed on external finance options.

8) Administration costs:

As the prediction of agency cost theory infers, the administration (**ADMIN**) of human capital could matter to capital structure decision, management approach or administrating efficiency. Business expenses also are related to financing patterns. Our results reveal that the firms

which spend more on managing expenses are inclined to use lesser debts because of an increase of costs in the market value parameter, which also leads to a higher agency cost between management and shareholders. Accordingly, the Asian firms with higher expenses on administration tend to rely more on issuing shares rather than bonds. However, the higher costs on management do not present significant influence on capital structure decision in the short-term in Asia.

9) Growth Opportunity:

In the results of all four debt ratios, the growth opportunity (**GROWTH**) proxy does not present a strongly correlation with any of them. Theoretically, based on pecking order theory (POT), if the internal capital is not enough and significant external finance is required for future development, the growth opportunity should be positively related to capital structure decision since the asymmetry information problem exists between firm investors and managers. Moreover, the firms with greater growth potential tend to find it easier to obtain external funding. On the contrary, a greater growth opportunity such as one of intangible asset also could result in higher financial distress costs in a long-run, since it is not able to be collateralized. Moreover, heavy borrowings would result in a burden for those fast growing firms and probably reduce the firms' value (Rajan and Zingales, 1995; Flannery and Rangan, 2006, etc.). In our results, the insignificant coefficient in the Asian market still remains a puzzle. This finding could probably be explained by the fact that Asian firms and their financial institutions are relatively more risk-sensitive. The financial distress cost and bankruptcy cost are also a priority to be considered over potential growth prospect when firms make their capital structure decision. In fact, Antoniou *et al.* (2008) has also discovered that the effect of growth opportunities on capital structure decision of a firm is more inclined

to be dependent on regulation, provisions to investors' protection, and corporate governance, rather than firm-specific conditions.

10) Stock performance:

The change of share price (**RETURN**) is also a factor that managers are likely to consider when they make capital structure decisions. It is possible for firms to issue equity after an increase in share price due to overvaluation. Hence, a negative correlation between share price performance and debt ratio is expected. Consistent with this prediction, our result show that the stock return is significantly inversely associated with total debt in market value and short-term debt ratios. This result provides evidence for the prediction of equity market timing theory, which states that more positive returns would promote firms to issue more equity. In other words, the equity can be issued after an increase in share price due to its overvaluation. However, it is arguable that such an inverse relationship between share price performance and capital structure decision could result from statistical distortions, since an increase in share price. It would also contribute to increase market value of equity³³ even though no any further equity was issued. However, the debt ratio of book value could be independent of this consequence and reveal the nature of the relationship between debt ratio and changes in share price. Therefore, in regard to the short-term debt model in Table 5.23, it can be found that the share performance in change of stock price also show an inverse association with book value of short-term debt ratio, which is able to double confirm the existence of market timing behaviour in the Asian market. As Jung *et al.* (1996)'s study suggested, the greater stock return volatility is associated with higher costs of financial distress and a greater likelihood of equity issuances. Some other empirical findings also

³³ The market value of equity usually is calculated by the number of shares multiple by stock price per share. Accordingly, the market value of equity could rise up with an increase of stock price in the capital market.

provide results consistent with this finding (e.g. Korajczyk *et al.* (1991); and Loughran and Ritter, (1995)). More importantly, this correlation only exists in short-term estimations and supports the findings of Alti (2006) that the consistency of market timing behaviour on capital structure decision is relatively low. The effect only lasts for the short-run and completely vanishes in a long-run debt ratio. Basically, this finding is in line with the studies of Yang *et al.* (2009) and Miglo (2010) on the demonstration of the traditional view of equity market timing theory. In addition, the market timing behaviour does play a vital role in shaping financing activities. And meanwhile, the financing behaviour is related to the cost of external capital, so the firms issue more equity when the cost of equity is relatively low. In addition, market timing is a short-term factor to influence financials decision and it could lead to short-term deviations from an optimal targets. However, this deviation could be reversed quickly, which also indicates the trade-off target capital structure has a non-negligible effects on firm value on the whole.

5.4. Tests of Robustness:

To further examine stability of the relationship between debt ratios and selected variables, a robustness analysis is applied. In the robustness test, the full sample is split according to several criteria and the equations have been re-estimated for robustness. The criteria used for sub-sampling are: 1) Firm Size; 2) The Degree of Indebtedness; and 3) Sample Period, in the crisis and no crisis periods respectively. In the following section the regression results when all sample firms are placed into these categories are presented and discussed. In general, the results are broadly consistent with our findings but this test also provides more insights about capital structure decision in Asian firms.

Table 5.23: Regression Result of dynamic panel data: the firm-specific determinants of capital structure over four debt ratios by applying GMM estimation:

Debt Ratios	Expected Signs	1) Total Debt	2) Long-term Debt	3) Short-term Debt	4) Total Debt in Market Value
Variables					
Lagged debt Ratios	+	0.806*** -0.0558	0.699*** 0.052	0.605*** -0.0536	0.779*** -0.03
Profitability (PROF)	-	-0.349*** -0.0334	-0.0770*** -0.0166	-0.235*** -0.0371	-0.194*** -0.0555
Tangibility (TANG)	+/-	0.736 -0.715	-3.115*** -0.757	-2.935*** -0.941	0.576 -2.11
Firm Size (SIZE)	+	0.841*** -0.276	0.935*** -0.166	-0.206 -0.161	1.531*** -0.248
Administration Expenses (ADMIN)	-	-0.481** -0.198	-0.867*** -0.248	-0.421 -0.282	-0.831*** -0.367
Liquidity (LIQUID)	-	-0.985*** -0.151	0.0686 -0.0817	-0.820*** -0.139	-1.002*** -0.207
Effective Income Tax (TAX)	+	0.0135 -0.0113	0.00475 -0.0101	0.00233 -0.0142	0.0119 -0.0187
Dividend Payout (DIV)	+/-	-0.0114* -0.00595	-0.00692 -0.00438	0.00546 -0.0066	-0.0117 -0.00837
Market-to-Book (MTB)	-	0.449*** -0.0987	0.0178 -0.0654	0.373*** -0.102	0.442 -0.64
Growth Opportunity (GROWTH)	+/-	0.00287 -0.00195	-0.00242 -0.00157	0.00313 -0.00225	0.00377 -0.00344
Stock Performance (RETURN)	-	0.00287 -0.00195	-0.00137 -0.00296	-0.00714* -0.00374	-0.112*** -0.0153
Constant		3.253*** -1.125	-5.873*** -1.101	8.331*** -1.75	9.012*** -2.578
Model Summary					
Year Dummy		Y	Y	Y	Y
AR1		0.000*	0.000*	0.000*	0
AR2		0.373	0.961	0.326	0.192
Sargan Test		0.306	0.649	0.747	0.473
Observations		2,703	2,703	2,703	1,496
R-squared		-	-	-	-
Number of id		1,034	1,034	1,034	634

Note: Debt ratios comprise of all four debt ratios in each model respectively. The total debt in book value (%) (TDBV) is total debt divided by total debt and total market capitalization in percentage of firm i in year t . $X_{i,t}$ is a vector of the firm-specific variables. The long-term liability in book value (%) (LTD) is the long-term debt divided by total debt and total shareholder equity in percentage of firm i in year t . The Short-term debt in book value (%) (STD) is short-term debt divided by total debt and total shareholder equity in percentage of firm i in year t . Total liability in market value (%) (TDMV) is total debt divided by total debt and total market capitalization in percentage of firm i in year t . The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (PROF) is EBIT divided by total asset; tangibility in % (TANG) is tangible asset divided by total asset; Effective Tax rate in % (TAX) is income tax expenses divided by pretax income; Dividend payout ratio (DIVIDEND) is dividend per share divided by earning per share; Market-to-Book (MTB) is market value per share divided by book value per share; liquidity in % (LIQUIDITY) is current asset divided by current liability; Administration Cost in % (ADMIN) is the percentage of total administration expenses to total asset; Growth opportunity in % (GROWTH) is the change of total revenue in percentage; Stock Performance (RETURN) in % is the change of stock price in percentage. The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. The data are data are drawn from the datastream and Bloomberg two databases. In the GMM estimation (Arellano-Bond test), the Year dummy variables refers to if the year dummy is included in the estimate (1), AR1 and AR2 are first and second-order autocorrelation in the first-differenced residuals. Sargan test is a test for the null of valid instruments and is asymptotically distributed as χ^2 under the null. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

considered over potential growth prospect when they make capital structure decision. In fact, Antoniou *et al.* (2008) also has figured out that the effect of growth opportunities on capital structure decision of a firm is more inclined to dependent on regulation and provisions to investors' protection and corporate governance, rather than firm-specific conditions.

11) Stock performance:

The change of share price (**RETURN**) is also a factor that managers are likely to consider when they make capital structure decisions. The firms are possible to issue equity after an increase in share price due to overvaluation. Hence, a negative correlation between share price performance and debt ratio is expected to present. Consistent with the prediction, our result has shown that the stock return is significantly inversely associated with total debt in market value and short-term debt ratios. This result has provided evidence on prediction of equity market timing theory that more positive returns would promote firms to issue more equity. In other words, the equity can be issued after an increase in share price due to its overvaluation. However, it is arguable that such an inverse relationship between share price performance and capital structure decision could result from statistical distortions, since an increase of share price. It would contribute to increase market value of equity³⁴ even though no any further equity issued. However, the debt ratio of book value could be independent for this consequence and reveal the nature of relationship between debt ratio and changes in share price. Therefore, in regard to the short-term debt model in Table 5.23, it can be found that the share performance in change of stock price also show an inverse association with book value of short-term debt ratio, which is able to double confirm the existence of market timing behaviour in Asian market. As Jung *et al.* (1996)'s study suggested, the greater stock

³⁴ The market value of equity usually is calculated by the number of shares multiple by stock price per share. Accordingly, the market value of equity could rise up with an increase of stock price in the capital market.

return volatility is associated with higher costs of financial distress and a greater likelihood of equity issuances. Some other empirical findings also provides consistent results with the this finding (Korajczyk *et al.*, 1991, Loughran and Ritter, 1995). More importantly, this correlation only exists in short-term estimation, which supports the findings of Alti (2006) that the consistency of market timing behaviour on capital structure decision is relatively low. The effect only lasts for the short-run and completely vanishes in a long-run debt ratio. Basically, this finding is in line with the studies of Yang *et al.* (2009) and Miglo (2010) about the demonstration of tradition view of equity market timing theory. In addition, the market timing behaviour does play a vital role in shaping financing activities. And meanwhile, the financing behaviour is related to cost of external capital, the firms issue more equity when the cost of equity is relatively low. In addition, market timing is a short-term factor to influence financial decision and it could lead to short-term deviations from an optimal target. However, this deviation would be reversed quickly, which also indicates the trade-off target capital structure has a non-negligible effects on firm value on the whole.

5.4. Tests of Robustness:

To further examine stability of the relation between debt ratios and selected explanatory variables, the robustness analysis is applied. In the robust test, the full sample is split according to several criteria and the equations have been re-estimated for robustness purposes. The criteria used for sub-sampling are 1) Firm Size; 2) The Degree of Indebtedness; 3) Sample Period: in the crisis and no crisis periods respectively. In this following section, it has been presented and discussed the regression results when all sample firms are grouped into different categories based on these three criteria into sub-samples. In

general, the results are broadly consistent with our findings and it also provides more insights about capital structure decision in Asian firms.

5.4.1: Robustness Check: Firm Size

A firm's matters because it changes the firm's financing behaviour since, for larger firms it could provide access to external financial markets in terms of bankruptcy risk and it can create scale economies in raising external capital. Thus, the full sample has been divided into three size categories according to the total asset of the firm.

Table 5.24 presents some differences among these three types of firm size. Overall, it can be seen that the most of these selected firm-specific variables are able to explain some of a firm's capital structure decision in medium-sized firms, but not small- and large-sized firms. The lagged debt ratio, profitability and liquidity proxies have strong correlations to total debt ratio across all three sizes of firm. More specifically, first of all, it is noticeable that lagged debt ratios are all positively dependent with current total debt ratios, and all coefficients also are within the range of zero to one in both OLS and Fixed Effect estimates across all three firm sizes. This result has strongly confirmed the existence of dynamism in capital structure decision in our sample, implying that all sized firms adjust their capital structure in order to achieve their optimal ones. Moreover, the significance of explanatory variables is dramatically improved when the lagged dependent variable is included in the model in terms of R squared. Secondly, the speed of adjustment does not present large gaps among these three categorized sub-samples. The large firms adjust fastest, followed by medium- and small firms respectively. These result implies that the smaller firms prefer to adjust slower due to a relatively lower cost of being off target, while a quicker adjustment is feasible for those larger firms due to a relatively lower cost of adjustment. Furthermore, more financing options are available for larger firms, and this might also be another reason why the capital structure

model for large firms is relatively more dynamic. Thirdly, both profitability and liquidity proxies present a negative association with total debt ratio for all three size groups. This demonstrates that pecking order theory (POT) can explain capital structure decision in all sizes of Asian listed non-financial firms and that internal capital financing is still a priority, even for those large firms, due to lower risk and cost undertaken.

In regard to the differences between the three size groups; first, it can be seen that administrative expenses are only negative to the total debt ratio for small firms. This could be because the financing pattern for small-sized firms tends to be more cost-oriented, even those overvalued small firms in capital markets still avoid higher levels of outstanding external debt. Second, it can be seen that growth opportunity and stock performance only are significantly positive and negatively related to total debt ratio respectively in medium-sized firms. This result can be understood in that only medium-sized firms would make more use of external capital, so as to meet high capital demands for greater potential growth in the future.

Table 5.24: Regression Result of Dynamic Panel Data: Total Debt Ratio in Book Value by Firm Size Clusters:

A) Small Firms						
	OLS	Std Error	Fixed Effect	Std Error	GMM	Std Error
Lagged Debt Ratio	0.840***	-0.0205	0.148***	-0.043	0.685***	-0.0861
Profitability	-0.271***	-0.0467	-0.128*	-0.0774	-0.293***	-0.0966
Tangibility	2.266	-1.597	-36.20***	-4.677	3.189	-1.343
Administration Expenses	-1.007*	-0.53	2.207	-1.396	-1.546*	-0.872
Liquidity	-2.781***	-0.451	-7.153***	-1.034	-4.343***	-1.124
Effective Income Taxes	0.0311	-0.0253	0.0183	-0.0302	-0.00285	-0.0368
Dividend Payout	0.0285**	-0.0124	-0.0304*	-0.018	0.0122	-0.0365
Market-to-Book	0.401**	-0.159	-0.125	-0.28	0.578	-0.4
Growth Opportunity	0.0247***	-0.00752	0.00683	-0.00802	0.0106	-0.014
Stock Performance	-0.00296	-0.0063	0.000329	-0.00618	0.000666	-0.0131
Constant	-4.309	-3.588	-9.941	-9.519	2.674	-5.95
B) Medium Firms						
	OLS	Std Error	Fixed Effect	Std Error	GMM	Std Error
Lagged Debt Ratio	0.860***	-0.0124	0.313***	-0.0284	0.607***	-0.171
Profitability	-0.203***	-0.034	-0.408***	-0.0632	-0.354***	-0.114
Tangibility	-0.805	-0.793	-14.12***	-2.502	-3.675	-1.427
Administration Expenses	-0.582**	-0.287	-1.789**	-0.873	-1.406	-1.628
Liquidity	-2.369***	-0.319	-3.725***	-0.511	-5.370***	-0.855
Effective Income Taxes	0.000755	-0.0148	-0.0613***	-0.0224	-0.0642*	-0.0356
Dividend Payout	-0.00912	-0.00729	-0.00949	-0.00984	-0.0138	-0.0183
Market-to-Book	0.392***	-0.108	0.644***	-0.201	1.293***	-0.356
Growth Opportunity	-0.0002	-0.00249	0.0041	-0.00265	0.0100*	-0.00526
Stock Performance	-0.0107***	-0.00328	-0.00884**	-0.00376	-0.0175*	-0.00987
Constant	1.619	-2.224	13.50***	-4.822	-	-

C) Large Firms						
	OLS	Std Error	Fixed Effect	Std Error	GMM	Std Error
Lagged Debt Ratio	0.857***	-0.0196	0.357***	-0.0436	0.589***	-0.158
Profitability	-0.158***	-0.0539	-0.315***	-0.0824	-0.434***	-0.116
Tangibility	0.9	-1.338	8.13	-6.065	-4.17**	-1.139
Administration Expenses	-0.237	-0.373	-5.656***	-1.642	-0.099	-3.312
Liquidity	-1.195*	-0.619	-2.072**	-0.85	-3.397**	-1.471
Effective Income Taxes	0.0319	-0.0316	0.0626	-0.0516	-0.0181	-0.0469
Dividend Payout	-0.00529	-0.0138	0.000139	-0.02	-0.0226	-0.0282
Market-to-Book	0.489**	-0.226	1.389***	-0.379	1.854***	-0.547
Growth Opportunity	0.00391	-0.00389	0.00745	-0.00456	0.000941	-0.00628
Stock Performance	-0.00567	-0.00528	-0.0133**	-0.00629	-0.011	-0.0139
Constant	5.798*	-3.505	-31.82***	-7.973	-	-

Note: This table reports the estimation result for equation by applying OLS specification, fixed effects by adding a parameter μ_i denoting firm fixed effects. The total debt in market value (%) (**TDBV**) is total debt divided by total debt and total market capitalization in percentage of firm i in year t . X_{it} is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (**PROF**) is EBIT divided by total asset; tangibility in % (**TANG**) is tangible asset divided by total asset; Effective Tax rate in % (**TAX**) is income tax expenses divided by pretax income; Dividend payout ratio (**DIV**) is dividend per share divided by earning per share; Market-to-Book (**MTB**) is market value per share divided by book value per share; liquidity in % (**LIQUIDITY**) is current asset divided by current liability; Administration Cost in % (**ADMIN**) is the percentage of total administration expenses to total asset; Growth opportunity in % (**GROWTH**) is the change of total revenue in percentage; Stock Performance (**RETURN**) in % is the change of stock price in percentage. Size Dummy is set as size cluster according to its total asset, we categorized firms into three size sub-groups, small firms: total asset of firms is less than 1.35 million on average in the full sample. Medium firms: total asset of firms is between 1.35 million and 52.65 million on average in the full sample. Large firms: total asset of firms is larger than 52.65 million on average in the full sample. The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. The data are drawn from the datastream and Bloomberg databases. We apply unbalanced panel data for each size sub-sample. In the GMM estimation (Arellano-Bond test), the Year dummy variables refers to if the year dummy is included in the estimate (1), AR1 and AR2 are first and second-order autocorrelation in the first-differenced residuals. Sargan-test is a test for the null of valid instruments and is asymptotically distributed as χ^2 under the null. Also, all t-values are reported in the parentheses; standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

In GMM model, for those small firms, the AR1 and AR2 are 0.001 and 0.785 respectively. The Sargan-test is 0.465. For medium-sized firms, the AR1 and AR2 are 0.0001 and 0.5071 respectively, the Sargan-test is around 0.3255. For large firms, the AR1 and AR2 are 0.022 and 0.806 respectively. The Sargan-test is around 0.723.

5.4.2: Robustness Check: the degree of indebtedness:

All sample firms are grouped into highly indebted and lower indebted categories³⁵. Firms with various degrees of indebtedness are supposed to have different financial patterns, and adjustments of their capital structure decision, since various transaction costs and overall risks are undertaken based on the level of indebtedness. As a consequence, we would expect the adjustment speeds of capital structures of highly indebted firms and lower indebted firms to be diverse. Firms are likely to adjust their capital structure much quicker when they are heavily indebted due to a lower financial capacity and high degree of bankruptcy. Comparatively, it should be slower for those lower indebted firms.

Our findings (Table 5.25) provide evidence that the speed of adjustment for highly indebted firms is significantly quicker than that of lower indebted firms. The adjustment of speed is around 62 per cent ($1-0.376=0.624$) when firms are heavily indebted, but only 38 per cent ($1-0.616=0.384$) for those slightly leveraged firms. Accordingly, the heavily indebted firms make significant adjustments towards the optimal since they face a greater burden of financial distress and are more prone to going bankrupt. In fact, this result also is also in line with the findings of Elliott *et al.* (2012), that the firms face a “hard” boundary when they are over-levered and they need adjust towards a target debt ratio more rapidly, since the present value of bankruptcy cost is at an increasing rate. In contrast, the firms that are under-levered can adjust towards a target capital structure more slowly since they face a relatively “soft” boundary. An increase of risk would accelerate the speed of adjustment, since the costs and benefits of adjustment change. Hence, our results have provided empirical evidence that there are diverse speeds by which firms, depending on their capital structure position in terms of

³⁵ The degree of indebtedness is categorized into two sub-samples according to its total debt ratio in book value. The Highly indebted firms is total debt ratio of firms is greater or equivalent to 49.3 per cent, otherwise, they are grouped into lower indebted firms.

over/under degree of indebtedness, adjust their target capital structure. This is consistent with the findings of Byoun (2008).

In terms of the impact of firm-specific, these results broadly remain consistent with those obtained in other investigations; that firm profitability, size, liquidity and market-to-book are the most significant factors affecting capital structure decision for both highly indebted and lower indebted companies. Basically, this result has provided evidence and robustness to our findings in three types of indebted firms. The retained earnings, the demand for liquidated assets and market timing (cost of equity) do matter to capital structure decision for both types of firms. Another finding is that market-to-book ratio is positively correlated to total debt ratio in both types of indebted firms. This finding is the result of a reduction in adverse selection costs when equity is overvalued for both heavily indebted and lower indebted firms. Furthermore, the magnitudes of market-to-book ratio in heavily indebted firms (0.823) is even higher than those lower leveraged firms (0.561), which also suggests that the costs related to adverse selections have a stronger effect on the cost of adjustment and capital structure decision when overall risk and bankruptcy cost is relatively higher. This is consistent with the result of Elliott *et al.* (2012).

Table 5.25: Regression Result of Dynamic Panel Data: Total Debt Ratio in Book Value by degree of indebtedness:

A) Highly Indebted Firms						
	OLS	Std Error	Fixed Effect	Std Error	GMM	Std Error
Lagged Debt Ratio	0.505***	-0.0176	0.148***	-0.0268	0.376***	-0.0614
Profitability	-0.285***	-0.0404	-0.328***	-0.069	-0.263***	-0.076
Tangibility	0.952	-0.925	-4.363	-5.644	1.714	-1.182
Firm Size	0.502***	-0.155	2.109***	-0.525	1.111***	-0.328
Administration Expenses	-0.984***	-0.288	0.356	-0.828	-0.576	-0.41
Liquidity	-0.103	-0.338	-0.391	-0.473	-1.041**	-0.53
Effective Tax Income	0.0445***	-0.0146	0.0265	-0.0203	0.0332	-0.0235
Dividend Payout	0.0023	-0.00736	-0.00363	-0.00925	-0.0113	-0.0121
Market-to-Book	0.456***	-0.105	0.528***	-0.179	0.823***	-0.257
Growth Opportunity	0.00266	-0.00216	0.00352	-0.00217	0.00411	-0.00284
Stock Performance	-0.00836***	-0.0032	-0.00845**	-0.00344	-0.00584	-0.00779
Constant	24.51***	-1.499	39.29***	-3.805	28.87***	-3.11
Model Summary:						
Year Dummy	-	-	-	-	Y	-
AR1	-	-	-	-	0.000*	-
AR2	-	-	-	-	0.57	-
Sargan test	-	-	-	-	0.538	-
No. of instruments	-	-	-	-	56	-
Observations	950	-	950	-	513	-
R-squared	0.531	-	0.197	-	-	-
Number of id	-	-	471	-	287	-
B) Low Indebted Firms						
	OLS	Std Error	Fixed Effect	Std Error	GMM	Std Error
Lagged Debt Ratio	0.721***	-0.0129	0.228***	-0.024	0.616***	-0.0654
Profitability	-0.0877***	-0.0247	-0.234***	-0.044	-0.200***	-0.0597
Tangibility	-1.009	-0.658	-16.16***	-1.879	-1.255	-1.265
Firm Size	0.463***	-0.145	1.840***	-0.549	0.834***	-0.293
Administration Expenses	-0.226	-0.226	1.280*	-0.714	-0.0924	-0.385
Liquidity	-2.832***	-0.257	-5.549***	-0.454	-3.949***	-0.721
Effective Tax Income	-0.0135	-0.0138	-0.0493**	-0.0198	-0.0157	-0.0211
Dividend Payout	0.000529	-0.00643	-0.0248***	-0.00888	-0.00391	-0.0103
Market-to-Book	0.497***	-0.0908	0.259	-0.165	0.561***	-0.192
Growth Opportunity	0.000988	-0.00259	0.00273	-0.00282	0.00181	-0.00507
Stock Performance	-0.00673**	-0.00287	0.000374	-0.00324	0.00563	-0.00657
Constant	6.401***	-1.013	20.30***	-3.166	9.310***	-2.366
Model Summary:						
Year Dummy	-	-	-	-	Y	-
AR1	-	-	-	-	0.000*	-
AR2	-	-	-	-	0.856	-
Sargan test	-	-	-	-	0.606	-
No. of instruments	-	-	-	-	58	-
Observations	1,753	-	1,753	-	983	-
R-squared	0.743	-	0.352	-	-	-
Number of id	-	-	718	-	431	-

Note: Total debt in book value (%) (TDBV) is total debt divided by total debt and total market capitalization in percentage of firm i in year t . $X_{i,t}$ is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (PROF) is EBIT divided by total asset; tangibility in % (TANG) is tangible asset divided by total asset; Effective Tax rate in % (TAX) is income tax expenses divided by pretax income; Dividend payout ratio (DIV) is dividend per share divided by earning per share; Market-to-Book (MTB) is market value per share divided by book value per share; liquidity in % (LIQUIDITY) is current asset divided by current liability; Administration Cost in % (ADMIN) is the percentage of total administration expenses to total asset; Growth opportunity in % (GROWTH) is the change of total revenue in percentage; Stock Performance(RETURN) in % is the change of stock price in percentage. Indebted Dummy is set as the degree of indebtedness according to its total liability ratio in book value, we categorized firms into two leveraged sub-groups. The Highly indebted firms is total liability ratio of firms is greater or equivalent to 49.3 per cent, otherwise, they are grouped into lower indebted firms. The sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. The data are drawn from the datastream and Bloomberg databases. The unbalanced panel data for each leveraged sub-sample are applied. In the GMM estimation (Arellano-Bond test), the Year dummy variables refers to if the year dummy is included in the estimate (1), AR1 and AR2 are first and second-order autocorrelation in the first-differenced residuals. Sargan test is a test for the null of valid instruments and is asymptotically distributed as χ^2 under the null. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

5.4.3 Robust Check: Pre-Financial Crisis and In-Financial Crisis Periods:

As the traditional view of corporate finance suggests, a firm's capital structure decision affects the cost of capital, and thereby influences firm value. In a period of financial recession, the real rate of return, inflation and risk premium would be low, whereas the liquidity and maturity risk premium would be higher. The financial recession has changed the macroeconomic environment. Hence, it could further change corporate finance behaviour and capital structure decision. As Agarwai (2003) has pointed out, firms would refinance their high-cost loans to low-cost loans in order to reduce overall risks. Accordingly, it is interesting to examine whether the determinants of capital structure change as an increase of overall risk, and the cost of external capital, in crisis periods. A regression model has been run to achieve this by employing total debt parameters to investigate the difference between the normal stage and the in-crisis stage.

Interestingly, in terms of optimal capital structure, it is noticeable that there is a desired capital structure before the crisis period, while this optimal capital structure does not exist during the crisis period between 2008 and 2009. More specifically, the coefficient of the lagged total debt ratio during the no-crisis stage is between 0 and 1 in the OLS and fixed-effect models, implying that the existence of target capital structure and debt ratio should converge and change to the desired level over time. Moreover, the speed of adjustment ($1 - 0.846 = 0.154$) is quite slow in the normal stage, since the speed of adjustment is negatively related to transaction costs. This implies that the cost of achieving optimal capital structure is lower compared to the cost of adjustment, and transaction cost are quite high. However, during crisis stage, the coefficients of both the OLS and the fixed-effect models do not fall between 0 and 1, which implies that no optimal capital structure exists when economic recession hits. This result demonstrates that the cost of capital will change according to the

broader economic climate, and that it further influences corporate finance decision. The absence of optimal capital structure in the financial recession stage might be led by growth in the risk of bankruptcy. Furthermore, this result has indicated that these non-financial Asian firms could face relatively limited external financing channels and a more static capital structure as a result of a relatively higher transaction cost. Flannery and Oztekin (2006) have pointed out that a better institutional environment would help to lower the transaction costs, which in turn adjusts the capital structure decision of a firm. Similar to the findings of other investigations, firm size, liquidity and market-to-book ratio are significantly correlated to total debt ratio in both normal and crisis periods. The firms' financing choice still takes timing behaviour into account no matter whether the market condition is stable or volatile. The firms would operate within windows of opportunity to reduce the overall cost of capital by issuing equity, even in the crisis period. However, the factors of profitability and stock performance show different signs, a significantly reverse correlation between profitability and total debt ratio turns out to be insignificant during the crisis period, this finding could be because a firm has retained earnings reduced by a recession, and this effect would lead to a change in the firm's financing pattern over the crisis period. In addition, the correlation of tangible assets and total debt ratio turns out to be negative during financial crisis years. The traditional capital structure theories (i.e. trade-off and pecking order theory (POT)) do not provide explanations about the existence of economic shock. This is probably because the firms would think more about how to survive and overcome the recession period instead of considering cost of capital during the in-crisis stage.

Table 5.26: Regression Result of Dynamic Panel Data: Total Debt Ratio in Book Value and Crisis Dummy:

A) No-Crisis Period						
	OLS	Std Error	FE	Std Error	GMM	Std Error
Lagged Debt Ratio	0.860***	-0.0102	0.388***	-0.0242	0.846***	-0.137
Profitability	-0.182***	-0.0278	-0.424***	-0.0541	-0.346***	-0.0743
Tangibility	0.0939	-0.712	-9.856***	-2.164	-4.595	-3.446
Firm Size	0.599***	-0.143	2.908***	-0.491	0.07***	-1.032
Administration Expenses	-0.543**	-0.236	-0.455	-0.763	1.418	-1.078
Liquidity	-2.376***	-0.263	-3.588***	-0.464	-0.982***	-0.573
Effective Income Tax	0.00743	-0.0133	-0.02	-0.022	-0.0122	-0.026
Dividend Payout	0.00299	-0.00634	-0.00906	-0.00947	-0.00902	-0.0114
Market-to-Book	0.428***	-0.0908	0.521***	-0.182	1.856***	-0.263
Growth Opportunity	0.00213	-0.00225	0.00285	-0.00274	0.00149	-0.00331
Stock Performance	-0.00697**	-0.00324	-0.00171	-0.00443	-0.0405***	-0.00738
Constant	2.775***	-1.031	9.538***	-3.101	-	-
Model Summary:						
Year Dummy	-		-		Y	
AR1	-		-		0.000*	
AR2	-		-		0.4236	
Sargan Test	-		-		0.7896	
Observations	2140		2140		1191	
R-square	0.845		0.367		-	
Number of id	-		969		600	
B) In-Crisis Period						
	OLS	Std Error	Fixed Effect	Std Error	GMM	Std Error
Lagged Debt Ratio	0.867***	-0.0205	-0.161**	-0.0722	0.144	-0.15
Profitability	-0.234***	-0.0469	-0.139	-0.101	-0.161	-0.145
Tangibility	-0.105	-1.26	-28.32***	-6.985	-3.375**	-1.362
Firm Size	0.588**	-0.265	22.89***	-3.373	2.87***	-0.332
Administration Expenses	-0.372	-0.426	-0.0762	-1.826	0.758	-2.084
Liquidity	-1.434***	-0.53	-3.875***	-1.141	-1.083***	-1.62
Effective Income Tax	0.0088	-0.0259	-0.0601	-0.043	-0.116**	-0.0516
Dividend Payout	-0.00878	-0.0131	-0.00579	-0.0242	0.0341	-0.0231
Market-to-Book	0.407**	-0.176	-0.366	-0.603	2.106***	-0.519
Growth Opportunity	0.000894	-0.00463	0.0123*	-0.00629	-0.00791	-0.00713
Stock Performance	-0.00806*	-0.00429	-0.0121*	-0.00647	-0.0313**	-0.0153
Constant	1.719	-1.866	-96.26***	-19.7	-	-
Model Summary:						
Year Dummy	N		N		Y	
AR1	-		-		0.6582	
AR2	-		-		-	
Sargan Test	-		-		0.7699	
Observations	563		563		154	
R-square	0.854		0.432		-	
Number of id	-		416		96	

Note: Total debt in market value (%) (**TLBV**) is total debt divided by total debt and total market capitalization in percentage of firm i in year t . $X_{i,t}$ is a vector of the firm-specific variables. The term v_1 captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (**PROF**) is EBIT divided by total asset; tangibility in % (**TANG**) is tangible asset divided by total asset; Effective Tax rate in % (**TAX**) is income tax expenses divided by pretax income; Dividend payout ratio (**DIV**) is dividend per share divided by earning per share; Market-to-Book (**MTB**) is market value per share divided by book value per share; liquidity in % (**LIQUIDITY**) is current asset divided by current liability; Administration Cost in % (**ADMIN**) is the percentage of total administration expenses to total asset; Growth opportunity in % (**GROWTH**) is the change of total revenue in percentage; Stock Performance (**RETURN**) in % is the change of stock price in percentage. The crisis dummy is set as year dummy variable, the crisis dummy 0 means in crisis period that is defined as the years between 2008 and 2009, otherwise, 1 is set as No crisis period that is defined as the years from 2006 to 2007 and from 2010 to 2011. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

5.5. Conclusion:

The determinants of capital structure decision were investigated extensively in the existing literature. However, empirical evidence from emerging economies is still scant compared to empirical studies examining developed countries. The aim of this chapter is to extend the empirical literature by providing new evidence from Asian markets. This chapter uses a dynamic panel data technique i.e. GMM estimator, to estimate dynamic models of capital structure. The same technique is used to estimate the speed of adjustment with which the Asian firms in the sample would adjust their capital towards a target one.

The results suggest that the debt ratios using four measures tend to have a slight fluctuation across the sample years. The gap between long- and short-term debts is large in Asia. More interestingly, the short-term debt is more broadly employed across firm sizes in Asia, whereas the long-term debts are mainly served to large firms. The result reveals the existence of a dynamic model in capital structure decision in all four debt ratios in Asia, which is in line with trade-off theory. The only exception is that the effect of target capital structure turns to be insignificant during the financial crisis period of 2008-2009. That is, during the crisis it was difficult for firms to adjust their capital more precisely because the cost of adjustment was higher than the cost of adjustment. This finding has shown that in general, capital structure is not static and it changes over years with the fluctuation of cost of capital. The speed of adjustment is a trade-off between the cost of adjustment and cost of being off target. Moreover, the speed of adjustment for short-term debt is much quicker than long-term debt, which shows that the cost of being off target on short-term debt is high compared to the cost of adjustment. This finding indicates that the agency cost between shareholders and creditors of long-term finance is lesser than short-term finance in Asia.

For the impacts of firm-specific factors, first, firm size and market-to-book ratios have a positive correlation to total debt ratio. The larger the firm size is, the higher the debt ratio. This is perhaps because large firms tend to be more diversified have less volatility in cash flow and less information asymmetry. These characteristics of large firms may further reduce the possibility of bankruptcy. The positive correlation between market-to-book ratio and total debt ratio has provided evidence of signalling theory, that the degree of indebtedness is reliant upon the performance of firms in stock markets in Asia. Second, Profitability, liquidity, administration expenses and dividend pay-out ratio have shown reverse correlations to total debt ratios. This finding shows that the firms with more retained earnings tend to avoid taking advantage of external finance. As the POT has predicted, the equity finance with higher risk, higher cost of financial distress and higher agency cost is used as last resort. However, a negative correlation between stock performance and short-term debt ratio supports the equity market timing theory hypotheses, which suggest that firms may like to issue equity when the cost of equity is relatively low, in order to build a stockpile of internal funds.

Appendix-3:

Table 5.27: Four Debt Ratios by Country:

Country	Total Debt Ratio in BV (%)			Long-term Debt Ratios (%)			Short-term Debt Ratios (%)			Total Debt Ratios in MV (%)		
	Mean (%)	Median (%)	STD (%)	Mean (%)	Median (%)	STD (%)	Mean (%)	Median (%)	STD (%)	Mean (%)	Median (%)	STD (%)
China	46.5	47.6	17.4	7.0	2.6	10.0	21.4	19.6	15.3	30.4	27.7	18.2
Hong Kong	40.3	40.5	16.3	12.0	9.5	11.8	9.3	7.2	8.4	31.6	27.7	19.9
Indonesia	40.9	40.0	16.6	9.3	4.2	13.3	10.4	7.3	11.3	35.9	33.9	22.5
Malaysia	23.1	22.3	15.5	6.5	3.3	7.8	16.6	13.8	13.2	26.1	24.7	17.5
Singapore	30.7	33.4	16.4	17.4	17.5	12.0	13.3	10.5	11.7	23.5	19.4	16.8
Thailand	41.6	41.7	19.4	10.9	6.1	12.8	11.8	6.5	13.5	38.4	36.6	21.6

Note: This table reports the simple correlations between explanatory variables and capital structure from 2006 to 2012. Four Dependent Variables: total debt in book value (%) (**TDBV**) is total debt divided by total debt and total shareholder equity in percentage; long-term debt (%) (**LTD**) is long-term debt divided by total debt and total shareholder equity in percentage; total short-term debt (%) (**STD**) is short-term debt divided by total debt and shareholder equity in percentage; total debt in market value (%) (**TDMV**) is total debt divided by total debt and market capitalization in percentage.

Table 5.28: Correlation Matrix:

Variables		1)	2)	3)	4)	5)	6)	7)	8)	9)	10)	11)	12)	13)	14)
TLBV	1)	1.000													
LTL	2)	0.340	1.000												
STL	3)	0.517	-0.099	1.000											
TLMV	4)	0.727	0.367	0.397	1.000										
PRO	5)	-0.254	-0.030	-0.274	-0.296	1.000									
TANG	6)	0.214	-0.151	0.010	-0.004	-0.157	1.000								
TAX	7)	0.277	0.381	-0.086	0.264	0.103	0.072	1.000							
DIVIDEND	8)	-0.255	-0.120	-0.129	-0.182	0.101	-0.375	-0.289	1.000						
MTB	9)	-0.418	-0.099	-0.209	-0.290	0.122	-0.123	-0.180	0.151	1.000					
SIZE	10)	-0.008	-0.043	-0.033	0.022	0.149	0.036	0.040	0.010	-0.045	1.000				
LIQUIDITY	11)	-0.074	-0.009	-0.060	-0.048	0.140	-0.015	0.055	0.017	0.113	0.026	1.000			
ADMIN	12)	0.146	-0.092	0.038	-0.426	0.123	0.203	-0.033	-0.028	-0.050	-0.029	-0.040	1.000		
GROWTH	13)	0.045	0.029	0.002	0.016	0.040	0.033	0.096	-0.082	-0.073	0.014	0.051	0.014	1.000	
RETURN	14)	0.005	0.027	-0.061	-0.227	0.141	-0.007	0.059	-0.011	-0.021	-0.008	-0.028	0.353	0.026	1.000

Note: This table reports the simple correlations between explanatory variables and capital structure from 2006 to 2011. Four Dependent Variables: total debt in book value (%) (**TDBV**) is total debt divided by total debt and total shareholder equity in percentage; long-term debt (%) (**LTD**) is long-term debt divided by total debt and total shareholder equity in percentage; total short-term debt (%) (**STD**) is short-term debt divided by total debt and shareholder equity in percentage; total debt in market value (%) (**TDMV**) is total debt divided by total debt and market capitalization in percentage. Ten Independent firm-specific Variables: Profitability in % (**PRO**) is EBIT divided by total asset; tangibility in % (**TANG**) is tangible asset divided by total asset; Effective Tax rate in % (**TAX**) is income tax expenses divided by pretax income; Dividend payout ratio (**DIV**) is dividend per share divided by earning per share; Market-to-Book (**MTB**) is market value per share divided by book value per share; liquidity in % (**LIQUIDITY**) is current asset divided by current liability; Administration Cost in % (**ADMIN**) is the percentage of total administration expenses to total asset; Growth opportunity in % (**GROWTH**) is the change of total revenue in percentage; Stock Performance (**RETURN**) in % is the change of stock price in percentage.

Table 5.29: Empirical Analysis: the Dynamic Capital Structure across Selected Countries in GMM Method:

VARIABLES	China	Hong Kong	Indonesia	Malaysia	Singapore	Thailand
Lagged TDBV	0.484*** (0.110)	0.670*** (0.145)	0.681*** (0.184)	0.247*** (0.0799)	0.414** (0.606)	0.761*** (0.239)
PROF	-0.404*** (0.0902)	-0.192 (0.188)	0.104 (0.177)	-0.390** (0.156)	-0.548 (0.577)	-0.521** (0.206)
TANG	2.101 (3.901)	0.244 (2.948)	1.361** (3.257)	-1.82*** (6.080)	0.72 (2.21)	-2.90* (1.18)
SIZE	1.60*** (1.913)	0.466 (0.583)	-1.489* (1.732)	1.320* (1.251)	0.111** (4.419)	0.474 (0.667)
ADMIN	0.932 (1.084)	0.509 (0.714)	-1.005** (2.667)	-1.982*** (1.084)	1.809 (2.401)	-0.659* (1.003)
LIQUIDITY	-2.255*** (0.555)	-3.11*** (1.551)	2.4089 (2.7663)	-0.988*** (1.134)	-0.616** (0.766)	-1.451 (0.952)
TAX	-0.0344 (0.0229)	0.0453 (0.0621)	0.134 (0.144)	-0.0414 (0.0773)	-0.167 (0.116)	0.0930 (0.0661)
PAYOUT	-0.00728 (0.0110)	-0.0473 (0.0478)	-0.0271* (0.0161)	-0.0364 (0.0309)	-0.117 (0.167)	0.00337 (0.0321)
MTB	1.575*** (0.252)	-0.355 (0.403)	-1.567 (1.264)	2.540 (1.989)	1.268 (0.36)	1.625** (0.285)
GROWTH	0.00198 (0.00276)	0.0371* (0.0204)	-0.0303 (0.0606)	0.0140 (0.0238)	0.0807 (0.0451)	-0.00940 (0.0186)
RETURN	-0.0367*** (0.00880)	0.0219* (0.0118)	0.0305 (0.0333)	0.00894 (0.0184)	0.000102 (0.0713)	-0.0379 (0.0232)
Year Dummy	Y	Y	Y	Y	Y	Y
AR1	0.000*	0.000*	0.1966	0.0334*	0.407	0.078*
AR2	0.4398	0.246	0.3493	0.8217	0.615	0.580
Sargan Test	0.272	0.535	0.4254	0.4023	1.000	0.938
Number of observations	1,566	411	62	357	119	188
No. of instrument	23	41	8	23	10	12

Note: Debt ratios comprise of all four debt ratios in each model respectively. The total debt in book value (%) (**TDBV**) is total debt divided by total debt and total market capitalization in percentage of firm i in year t . $X_{i,t}$ is a vector of the firm-specific variables. The long-term liability in book value (%) (**LTD**) is the long-term debt divided by total debt and total shareholder equity in percentage of firm i in year t . The Short-term debt in book value (%) (**STD**) is short-term debt divided by total debt and total shareholder equity in percentage of firm i in year t . Total liability in market value (%) (**TDMV**) is total debt divided by total debt and total market capitalization in percentage of firm i in year t . The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (**PROF**) is EBIT divided by total asset; tangibility in % (**TANG**) is tangible asset divided by total asset; Effective Tax rate in % (**TAX**) is income tax expenses divided by pretax income; Dividend payout ratio (**DIVIDEND**) is dividend per share divided by earning per share; Market-to-Book (**MTB**) is market value per share divided by book value per share; liquidity in % (**LIQUIDITY**) is current asset divided by current liability; Administration Cost in % (**ADMIN**) is the percentage of total administration expenses to total asset; Growth opportunity in % (**GROWTH**) is the change of total revenue in percentage; Stock Performance(**RETURN**) in % is the change of stock price in percentage. The Sargan test is a test for the null of valid instruments and is asymptotically distributed as χ^2 under the null. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Chapter 6: The Capital Structure Decision across Industries:

6. Introduction:

Firms operating within the same industry should have similar characteristics. These characteristics will reflect the nature of the industry (e.g. capital intensive, labour intensive, stable, profitable or risky), and follow common own-business policies and norms. Industries are also subjected to different challenges in terms of operating risk, technology requirement and environmental regulation etc. The existing literature has suggested that the firm's capital structure decision not only relies upon firm-specific characteristics, but the industry nature could also determine their financing decision (e.g. Bradley *et al.* (1984); MacKay and Phillips (2005); and Roberts (2002)). However, studies on the issue of industry and capital structure are scarce when it comes to emerging economies. The Asian markets feature booming economies, growing capital markets, massive foreign capital inflows and significant changes in the structure of economy sectors. The phenomenal economic growth these countries have experienced in the last two decades is reflected in per capital income and the growth of the middle class relative to overall population. This generates a gradual transferring from traditional primary sectors (industrial, basic materials etc.) to secondary or tertiary sectors (services) in order to serve the needs of the growing middle class population. Secondly, since the firms included in this study are non-financial firms, it is not possible to find the major problem of high leverage in these emerging market firms. Thus, this chapter will investigate how the industry within which a firm operated influences its financing decision. In addition, some industries are still highly controlled by the government in many Asian countries, which could lead to a different style of agency problems and consequently result in different approaches to a firm's capital structure decisions. This is because of the unique corporate governance and closer-ties with the state-owned banking sector. Hence, it is important to

understand how the cross-industry differences (i.e. industrial activities, industry nature, industrial business risk, stage of development and government policy) affect a firm's financing decision in Asia.

This chapter aims to answer three research questions: 1) Whether there is a significant difference in terms of the use of external finance across industries? 2) Do industries with greater prospects rely more on external finance compared to those mature and growing industries? and 3) Whether the financing system has provided enough support to correspond with the development of the real economic sector during this transitional period, in particular, those newly emerging and growing industries.

In order to answer the above questions the industries in the sample were classified into nine industries groups within two categories: 1) mature (traditional) industries, and 2) growing industries³⁶. The former is characterised by limited future growth prospects, where a firm's means of growing are by acquiring market shares from competitors or by diversifying. In contrast, the growing industries usually are based on services and technology-related products with more potential markets and greater growth opportunities. They are still in the early stage of development in the economy and are expected to be the representatives of a new economy, since they are characterised by a high potential for growth. In the case of growing industries, the funding requirement for new investments and increased debt capital can be larger than firms in mature industries. There has been no attempt to systematically document or provide a comprehensive cross-sectional analysis in this set of industry characteristics and capital structure decisions in the Asian region.

³⁶ Our dataset includes nine industrial sectors according to Industry Classification Benchmark (ICB), excluding financial companies, because their capital structure is unique and chosen with country-specific regulations for financial institutions.

The structure of this chapter is as follows: the following section briefly presents the fluctuation of debt ratios across industries. The third section presents the empirical regression results between mature and growing economies. The conclusion follows at the end of the chapter.

6.1. Summary of Industrial factors:

6.1.1. The Types of Industrial Sector:

Panel 1 in Table 6.30 shows nine industry groups (according to ICB criteria), and five perspective of each industry (a) sub-sector, b) cyclicalities c) phase of industry development, d) number of firms in each sector, and f) the proportion of each sector in the full sample). Panel 2 in Table 6.30 presents a breakdown that shows the role of sectors in the economy and their major activities in each industry group. In general, the sectors of industrial and consumer goods are the two largest groups. They occupy 31.2 and 21.45 per cent in the full sample respectively. The total number of firms in these two industrial groups has reached over 52 per cent in our sample. Comparatively, due to their high entry requirements, the number of firms in the sectors of telecommunications and oil & gas is the lowest in our sample; only around 0.63 and 2.05 per cent respectively. In terms of those services or knowledge-based sectors, they only occupy a small portion in the entire sample, the sectors of healthcare, technology and consumer services account for 6.06, 4.9 and 8.85 per cent respectively. In addition, although their economy structures vary across these sample countries, the state-owned enterprises in many Asian countries are an important segment of the entire economy in terms of their scale and scope. The State Owned Enterprises (SOEs)

remain significant in many large or key Asian economies³⁷. Hence, it is worth noting that the SOEs remain prominent in industrial (i.e. air and rail transportation), utility sectors.

³⁷ For example, in Thailand, the SOEs occupy roughly 25% of the GDP. In Malaysia and Singapore, they contribute around 15% of GDP. In terms of employment, the SOEs also represent a significant part of total employment. In China and Malaysia, the SOEs contribute to 15% and 5% of total employment respectively.

Table 6.30: Economic Activities Classification of firms by Sector:

Panel 1:						
This table shows our unbalanced panel data set by industrial factor. We apply the Industry Classification Benchmark (ICB) to split our dataset into nine industry groups and the concrete classification information is downloaded from both datastream and Bloomberg dataset. In this table, it shows nine industrial sectors, sub-sectors (major activities in each industry), the nature of cyclicity for each of industry, the number of firms in each industrial sector group and the percent of each sector in the entire sample set.						
No. of Sectors	Industrial Sector	Sub Sectors	The Nature of Cyclicity	Phrase of industry Development	No. of firms in each Sector	% of each industrial sector in the full sample
1)	Basic Materials	Chemicals and Basic Resources	Cyclical	Mature	956	19.57%
2)	Consumer Goods	Automobiles & parts, Food & Beverage, Personal & Household Goods	Both Cyclical and Non-Cyclical	Mature	1086	22.24%
3)	Consumer Services	Retail, media, Travel & Leisure	Cyclical	Growing	432	8.85%
4)	Healthcare	Health care services & Biotechnology, Pharmaceuticals	Non-cyclical	Growing	296	6.06%
5)	Industrials	Construction & Materials and Industrial Goods & Services	Cyclical	Mature	1540	31.53%
6)	Oil & Gas	Energy and Oil equipment & Services	Cyclical	Mature	100	2.05%
7)	Technology	Software and hardware, equipment	Cyclical	Growing	240	4.9%
8)	Telecommunications	Fixed and Mobile telecommunication	Non-Cyclical	Growing	31	0.63%
9)	Utilities	Electricity, gas, water	Non-cyclical	Mature	203	4.15%
Total					4884	

Note: The industry cyclicity is defined as whether the industry would be affected by economic changes in terms of its revenues, share price or etc. In other words, the cyclicity of industry mainly refers to those sectors that have relatively higher volatility with the change of economic climate, such as in economic boom or economic downturn periods. Furthermore, the demands of goods or services products in an industry tend to be easily affected by the change of general economic or seasonal conditions. In a contrast, the non-cyclical industry does not react to shift its business cycles. Their demands of products or services usually stay at a relatively stable level and do not present a significantly fluctuation as general economy or seasonal factors. The cyclical industries usually comprise of those industries that produce or deliver durable service, which would perform better when economy is favourable. By contrast, the firms producing those non-durable essentials or services on daily basis usually are grouped in non-cyclical sector. In my study, the nine industries are mainly categorized into two groups, one is cyclical industry, which included basic materials, consumer services, industrials, oil & gas, technology sectors. Another group is non-cyclic industry, including healthcare, telecommunication and utility sectors. The only one exception is consumer goods, which is either cyclical sector or non-cyclical sector sometimes, since food & beverage and other daily essentials are non-durable products that need to purchase anytime, hence, its consumption would not be affected by economic condition. For those products (including food & Beverage and other daily essentials, healthcare or mobile services), they are not susceptible to change as the economic climates and stay at a relatively constant level. In terms of the rest of industries, their products and services are likely affected by business and economic cycles. When the economy condition is favour, the purchases are relatively higher, and thus their sales would be impacted when economy downturns. In particularly, in those heavy industries that involves with infrastructures or large equipment (i.e. construction, oil & gas, basic materials, automobiles and its related), they are heavily impacted by the economic and weather conditions.

The definition of phrase of industry development is classified according to five stages in industry development, which is a) appearing, b) rapid-growing; c) mature; 4) declining, 5) Fragmented. In general, all these nine industries in our full sample are categorized into either mature or growing industries in Asia in terms of the demands and whether it is characterised by high growth rate and market potential in an industry. More specifically, Basic materials, consumer goods, industrials, oil & gas, utilities are classified into mature sectors. The sectors of consumer services, healthcare, technology and telecommunication sectors are grouped into growing industry.

Panel 2:

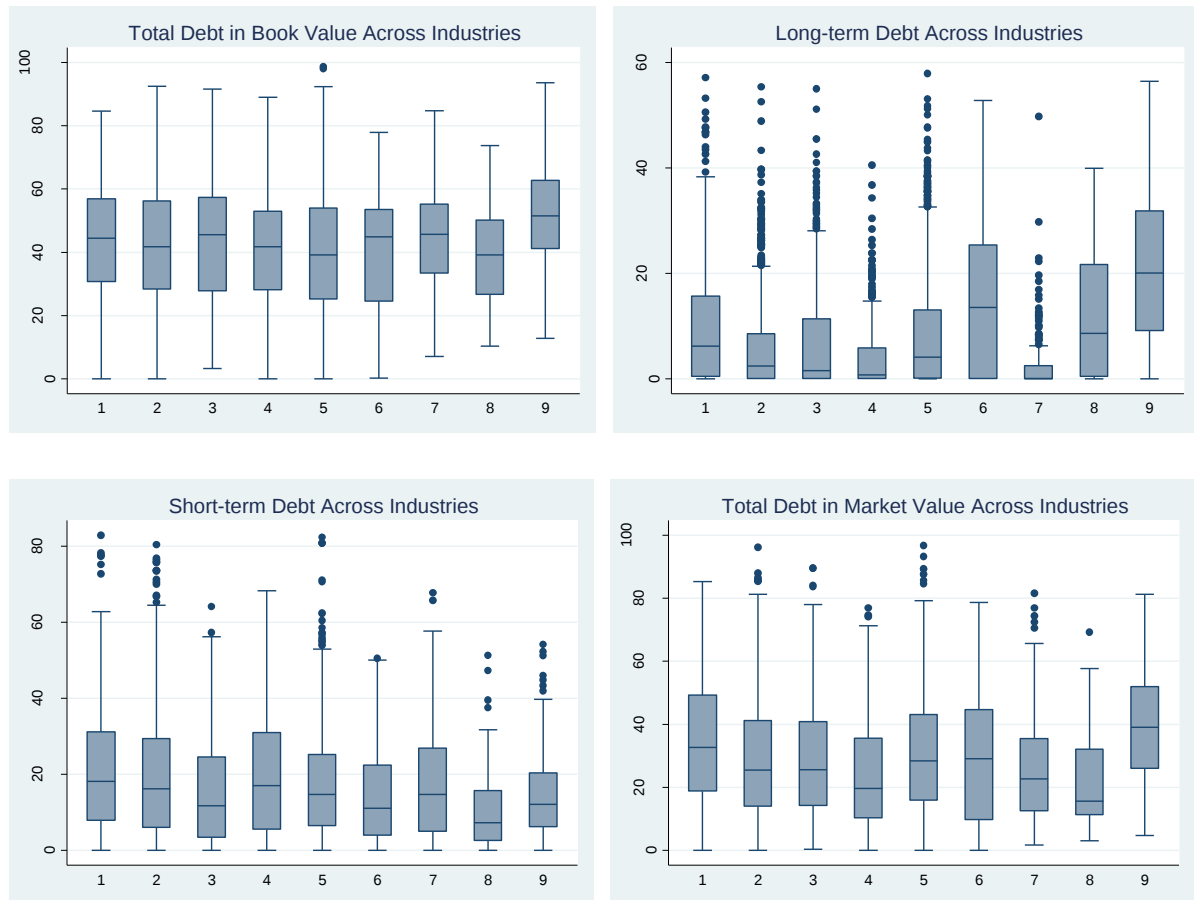
This Table has further shown a more specific picture about the role of its sector in economy and its main activities:

Number of Sectors in the full sample	Industrial Sector	Sectors in Economy	Major Activities in each Sector
1)	Basic Materials	Primary Sector	Chemicals, Forestry & Paper and metals & Mining
2)	Consumer Goods	Secondary Sector	Non-durable products: Beverage and Food, personal and leisure goods, tobacco; Durable products: Automobiles & its part, household goods & Home construction.
3)	Consumer Services	Tertiary Sector/ Quinary Sector	Food& Drug wholesalers, General Retailers (apparel, broad line, Home improvement, Specialized Consumer and Specialty), Media (Broadcasting & Entertainment, Media Agencies and publishing); Travel & Leisure (Airlines, gambling, hotels, Restaurants & Bars, Travel & Tourism and other Recreational Services.
4)	Healthcare	Tertiary/ Quinary Sector	Healthcare- and medical related equipment, providers & suppliers (a spectrum of clinical services covering from basic health screening to quaternary care, Pharmaceuticals& Biotechnology.
5)	Industrials	Secondary Sector	Construction, building materials, heavy construction, Aerospace & Defence, Containers & Packing, Diversified industries, Electrical equipment, Commercial vehicles & trucks, Industrial Machinery, transportation (delivery, Marine, railroads, trucking and other transportation services), support services (business support services, training& employment, industrial suppliers, waste& disposal Services)
6)	Oil & Gas	Secondary Sector	Exploration and production, integrated oil & gas, oil equipment & services, pipelines, renewable energy equipment, Alternative Fuels.
7)	Technology	Tertiary/Quaternary Sector	Computer, internet and software, technology-related hardware & equipment (Computer hardware, electronic office equipment, telecommunication equipment).
8)	Telecommunication	Tertiary/Quaternary Sector	Fixed and mobile telecommunication
9)	Utility	Secondary Sector	Conventional and alternative electricity, gas distribution, multiutilities and water.

Note: The proportion of population can be defined into various sectors, and the sector of the economy basically is a way to describe different parts of sector in economy according to its main business nature. In our study, in the category of sector in economy, the primary sector of the economy mainly includes the production of raw materials and basic foods. The secondary sector refers to those manufactures and construction. The Tertiary sector of economy is service-based industry, which provides general services to individuals or business. The Quaternary sector of economy consists of those knowledge- or intellectual-based industries in the economy. The Quinary Sector is one branch of the quaternary sectors, which mainly focus on highest level of decision making activities to provide speciality services. Based on International classification benchmark (ICB), the main activities in each sector has been further breakdown as more specific sub-sectors category.

6.1.2. Comparison of Debt Ratios across Sample Countries:

Figure 6.28: Total Debt Ratios across Nine Industries in the entire dataset:



Note: The four small figures below present four debt ratios across nine industries in recent decade, including total debt ratio in book value, long-term debt ratio, short-term debt and total debt in market value respectively. The length of the box represents to the inter-quartile range. The line in the middle of the box represents the median value in each industry group. The points are marked as those outliers. The horizontal line includes nine industries, presenting as followings; 1) Basic materials; 2) Consumer Goods; 3) Consumer Services; 4) Healthcare; 5) Industrials; 6) Oil & Gas; 7) Technology; 8) Telecommunications; 9) Utilities.

The four boxplot pictures above in Figure 6.28 show four debt ratios across nine industrial groups. First, it has shown that the long-term debt ratio and market value of total debt ratio are the most volatile among these nine groups compared to another two debt ratios. This result could indicate that the usage of long-term bond finance and equity finance are relatively various across industries. For example, the long-term debt ratio in the utility sector is the highest, but the technological firms have the lowest long-term finance. More importantly, such a large variation on these debt ratios across these nine industry groups

could also suggest that the difficulty of accessing external capitals is diverse across industries due to various types of business nature, degree of business risk, external funding requirement for future growth, financial traditions and institutional aspect, etc. Second, it is noticeable that the lengths of box in these nine industries between long- and short-term debt ratios are significantly different. In a contrast, the length of box in total debt ratio in book value has no such large variation. More specifically, the variation of long-term debt ratio is small across the technological firms, whereas it is relatively much larger for those industrial firms. Similarly, the telecommunications industry is the industry with the smallest debt dispersion, whereas the largest dispersion is in the healthcare sector. These findings show that the degree of taking advantage of long- and short-term debt ratios across individual firms within the same industry group is varied.

To sum up, these findings have mainly provided two interpretations about financing preference across industrial groups, which could answer our first research question. First, the general degree of overall indebtedness has no big difference across industries, whereas the levered degree of long- and short-term debt has a large variation across both individual firms and industry aspects, in particular, short-term debt. Second, the difficulty of accessing a capital market is at diverse degrees across industrial groups, especially for long-term bond finance, implying constraints of government-directed lending policy.

6.1.3. Descriptive Statistics:

In order to further compare the debt ratios across industries the descriptive statistics, including debt ratios and firm-specific explanatory variables, are shown in Tables 6.35(1) 6.36(2) ³⁸ in the appendix. In terms of total debt in book value, it has been shown that the

³⁸ Table 6.35(1) and Table 6.36(2) are on Page 176 and Page 177 respectively.

utility industry is the most indebted sector and oil & gas the least, being approximately 51 per cent and 39 per cent respectively. The technology industry follows the utility sector at around 44 per cent, implying that intensive capital is required here. There is little difference in average book value of total debt across the industries, except a slightly higher ratio in the utility sector. With regard to long- and short-term debt ratios, as discussed above, the gap between the highest (the utility sector) and lowest (the technology sector) long-term debt ratios is dramatic, reaching approximately 20 per cent. In a comparison, the gap between the highest (the basic material sector) and lowest (the telecommunication sector) short-term debt ratios is only around 8 per cent. On the one hand, the bond market in the emerging markets in these Asian countries is much smaller and more dominated by government bond than in those more mature economies (Domowitz *et al.*, 2000). On the other hand, this finding also suggests that the long-term bond finance is government-directed in a large degree and it mainly serves particular sectors (highly government-controlled sectors). With respect to market value, the utility sector is still the highest levered while the telecommunications and consumer services sectors have the least market value.

Some interpretations could be drawn from two major implications. First, according to the OECD study³⁹, companies in the oil & gas and telecommunications sectors are mainly monopolistic and state-owned in Asian countries. Hence, it can be seen that the firms in government-controlled sectors play a predominant role with a relatively higher degree of indebtedness. They have shown higher debt ratios due to the factors of less competition, higher entry requirement, high funding requirement for large infrastructure production equipment (i.e. telecommunication, oil & gas sectors with off-shore platforms) and substantial government support. In a contrast, the firms in the services or technology sectors

³⁹ OECD Report. Policy Brief on Corporate Governance of State-owned Enterprises in Asia. Recommendations for reform. <http://www.oecd.org/countries/philippines/45639683.pdf>.

have show relatively low levels of indebtedness, especially long-term contract finance. Second, the overall debt ratios for services and knowledge-based sectors are still lower than other heavy industries. This result is supported by the findings of Beattie *et al.* (2006) and Miao (2005) that financial debt is lower for high-tech firms than utility firms. By contrast, the formal financial channels (i.e. banking loans or long-term bond issuance) are readily extended to the oil & gas and utility sectors. However, with the deepening of economic reforms and transition processes in these emerging Asian countries, substantial funding support from both formal financing channels and private capital should meet the development of real economic sectors. The services, high technology and innovation-based sectors, as fast growing industries, are gradually playing an increasingly vital role in economic development.

6.1.4. The Comparison of Debt Ratios across Industries between No-crisis and In-crisis Periods:

Inspired by the result of Chapter Five, it has shown that the financial crisis between 2008 and 2009 does matter to a firm's capital structure decision. It is also interesting to examine whether the impacts of financial meltdown would also vary across industries. In Table 6.32, the total debt level is relatively stable across industries during these two periods. Only the telecommunications sector has a relatively larger fluctuation when crisis is exploded in terms of both long- and short-term debts. Moreover, it can be noted that the sectors of oil & gas, telecommunications and utility still rose up their short-term debt during the financial crisis period. Second, it is noticeable that the large fluctuation between pre-crisis and in-crisis periods mainly happened on long-term debt ratios. The firms in majority mature industries (i.e. basic materials, consumer goods, industrials and utility sectors) increase their long-term debt slightly in the crisis years, and the firms in the rest of the growing sectors (i.e. consumer

services, healthcare, oil & gas technology and telecommunications sectors) are opposite. This might indicate that the long-term finance also plays a role as a sort of “rescue” during a financial meltdown period in order to share higher risk from banks.

Table 6.31: The Debt Ratios across Industries by Economic Sector and Cyclicalities of Industry:

A) Debt Ratios By Economic Sector:					
Economic Sector	Industry	TDBV	LTD	STD	TDMV
Primary Sector	Basic Materials	42.7	9.6	20.7	34
Secondary Sector	Consumer Goods	41.6	5.9	19.2	29.3
	Industrials	39.6	8.5	17.1	30.4
	Oil & Gas	39.2	14	14.8	28.4
	Utility	51.1	22.4	14.4	39.7
	Average	43	13	16	32
Tertiary Sector	Consumer Services	43.2	7.4	15.4	28.5
	Healthcare	41.6	4.4	19.8	24.2
	Technology	44.1	2.5	17.3	26.3
	Telecommunication	39.9	12.8	12.2	23.8
	Average	42	7	16	26
B) Debt Ratios by Growth Potential					
	Industries	TDBV	LTD	STD	TDMV
Mature Industry	Basic Materials	42.7	9.6	20.7	34
	Consumer Goods	41.6	5.9	19.2	29.3
	Industrials	39.6	8.5	17.1	30.4
	Oil & Gas	39.2	14	14.8	28.4
	Utility	51.1	22.4	14.4	39.7
	Average	42.8	12.1	17.2	32.4
Growing Industry	Consumer Services	43.2	7.4	15.4	28.5
	Healthcare	41.6	4.4	19.8	24.2
	Technology	44.1	2.5	17.3	26.3
	Telecommunication	39.9	12.8	12.2	23.8
	Average	42.2	6.8	16.2	25.7

Note: In our study, in the category of sector in economy, the primary sector of the economy mainly includes the production of raw materials and basic foods. The secondary sector refers to those manufactures and construction. The Tertiary sector of economy is service-based industry, which provides general services to individuals or business. The Quaternary sector of economy consists of those knowledge- or intellectual-based industries in the economy. In general, all these nine industries in our full sample are categorized into either mature or growing industries in Asia in terms of the demands and whether it is characterised by high growth rate and market potential in an industry. More specifically, Basic materials, consumer goods, industrials, oil & gas, utilities are classified into mature sectors. The sectors of consumer services, healthcare, technology and telecommunication sectors are grouped into growing industry.

TDBV in %: total debt/total debt + total shareholder equity in percentage. **LTD** in %: Long-term debt/total debt + total shareholder equity in percentage. **STD** in %: Short-term debt/total debt + total shareholder equity in percentage. **TDMV** in %: total debt/ total debt + total market capitalization in percentage.

Table 6.32: The Debt Ratios across Industries between No-crisis and In-crisis Periods:

	1)	2)	3)	4)	5)	6)	7)	8)	9)
A) In-Crisis Period									
TDBV	42.7	40.6	43	39.8	40.2	38.6	45	42.9	55.2
LTD	11.8	6.8	7	4	9.1	13.4	2.3	7.1	26.4
STD	19.4	19	13.4	19.6	16.6	15.4	14.8	22.5	14.9
TDMV	35.6	30.5	27.9	22.6	32.5	30.7	28.8	27.3	42.2
B) No-Crisis Period									
TDBV	42.8	41.9	43.2	42.2	39.4	39.4	43.8	38.9	50
LTD	9	5.6	7.5	4.5	8.3	14.1	2.5	14.8	21.3
STD	21.1	19.3	15.9	19.9	17.2	14.7	18.2	8.6	14.3
TDMV	33.5	28.9	28.6	24.7	29.7	27.8	25.5	22.6	38.9

Note: This table compares the change of all four debt ratios between no crisis and in crisis two periods across nine industry groups. The nine industries are presented as followings: 1) Basic materials; 2) Consumer Goods; 3) Consumer Services; 4) Healthcare; 5) Industrials; 6) Oil & Gas; 7) Technology; 8) Telecommunications; 9) Utilities.
TDBV in %: total debt/total debt + total shareholder equity in percentage.
LTD in %: Long-term debt/total debt + total shareholder equity in percentage.
STD in %: Short-term debt/total debt + total shareholder equity in percentage.
TDMV in %: total debt/ total debt + total market capitalization in percentage.

6.2. Regression Results across Industries:

This section aims to present and compare the firm's financing patterns and speed of adjustment over nine industry groups by applying the following estimation in GMM method:

$$\text{Debt Ratios}_{it} = \alpha_0 + \lambda \text{lagged debt ratios}_{i,t-1} + \alpha_1 \text{PROF} + \alpha_2 \text{TANG} + \alpha_3 \text{TAX} + \alpha_4 \text{SIZE} + \alpha_5 \text{DIV} + \alpha_6 \text{MTB} + \alpha_7 \text{LIQUID} + \alpha_8 \text{ADMIN} + \alpha_9 \text{GROWTH} + \alpha_{10} \text{RETURN} + \alpha_{11} \text{IndustryDummy} + v_i + \varepsilon_{it}$$

Where debt ratios in book value are the capital structure decision, including four debt ratios (total debt ratio, long-term debt ratio, short-term debt ratio and total debt ratio in market value), α and β are parameters. Nine firm-specific explanatory variables are included in this estimation. **PROF** stands for profitability, **TANG** stands for tangible asset, **TAX** stands for effective tax rate, **SIZE** stands for firm size, **DIV** stands for dividend payout ratios, **MTB** stands for market-to-book ratio, **ADMIN** stands for administration expenses, **GROWTH** stands for growth opportunity, **RETURN** stands for stock performance. Industry Dummy factor is a dummy variable that comprises nine industrial groups. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. In each

sector, the OLS, fixed effect model (FE) and GMM are employed. Both OLS and fixed effect model (FE) are biased from endogeneity and heteroskedasticity, but they could provide the highest and lowest boundaries of coefficient of lagged dependent variables. Besides, in order to get rid of problems, the GMM approach is applied with inserted instrument variables (IV). The only exception is the telecommunications and oil & gas sectors, due to the limited number of firms in these two sectors and the result would be infeasible, they are deleted from separated regression by sectors. However, both telecommunication and oil& gas sectors are included into growing and mature industries respective to compare the differences between two major groups.

On the whole, our result has provided strong evidence that the industrial factor does matter to a firm's financing pattern. Most explanatory firm-specific variables are not only consistent with our previous empirical findings in Chapter Five, but they also show some differences across industry (i.e. its business nature, distinction of tax benefits and business risks, different degrees of governmental support, capital requirement on growth potential, etc.) that could result in various financing patterns. In the next section, a separated regression result and its determinants analysis of capital structure decision would be presented by two main sector groups, which is traditional mature industry and growing industry respectively.

6.2.1. Target Capital Structure and its Speed of Adjustment across nine industrial groups:

In Table 6.37(1) and Table 6.38(2), the result has shown that the dynamism capital structure does exist in seven industries and the speed of adjustment across these eight sectors is also diverse, which is consistent with Getzmann *et al.* (2010)'s findings. This result has demonstrated that industrial factor does matter to speed of adjustment. To compare among

these industries, the difference of speed of adjustment across these seven industries is smaller. The highest speed of adjustment is the utility sector, and then it is followed by sector of healthcare. Moreover, those growing human-based industries (except healthcare) are likely inclined to adjust much slower than those mature heavy industries. In the Table 6.37(1), it further presents that the speed of adjustment in mature industries is quicker than growing industries across total debt in book value, long- and short-term debt ratios. In fact, this result is similar to Getzmann *et al.* (2010)'s finding, and they also explain that a higher speed of adjustment implies that these large Asian firms benefit from lower transaction costs and well-established stock markets. Moreover, this interpretation is also consistent with the results of the previous empirical chapter that the larger firms tend to adjust quicker than the smaller firms. In addition, the industries with heavy infrastructure tend to adjust their capital structure faster than those “soft” or human-based growing industries. On the one hand, the heavy industries could have more fixed asset as collaterals to buffer risks, while human-based industries suffer more from higher risks and more uncertainties. On the other hand, a slow adjustment of capital structure also possibly results from difficulty of seeking financing for these innovative or knowledge-based companies, especially after the financial crisis of 2008⁴⁰.

⁴⁰ This finding is presented in report of OECD science, technology and industry scoreboard 2013 by Organisation for Economic Cooperation and Development in 2013. The link is as following:
<http://www.oecdilibrary.org/docserver/download/9213051e.pdf?expires=1385483309&id=id&accname=guest&checksum=0BEFDBE516C075B00D48B9739799A068>

6.2.2. Discussion and Analysis of Empirical Result between Mature and Growing Industries:

A) Mature Industries:

a) Basic Materials:

The nature of basic material industry is highly cyclical and a primary production industry in the economy, its major activities comprise of discovery, development and process of raw materials. The products in this sector usually are durable (such as basic metals, chemical and forestry products). Hence, it is sensitive to change of business cycle and demand fluctuation due to a largely driven price on supply and raw materials. According to the result in Table 6.33, our selected explanatory variables work well to explain capital structure characteristics in the basic material industry with 86 per cent R-square on total debt in book value. Five out of ten firm-specific variables are significant on total debt in GMM estimation. Profitability, firm size, liquidity, market-to-book and growth opportunity are correlated to capital structure decision. Profitability and liquidity are negatively correlated to total debt at 1 per cent level respectively, in particular, firm liquidity is heavily reversed relating to capital structure. This has been in line with prediction of Pecking Order Theory (POT) that firms with more internal generated funds tend to use lesser external capitals from concern of risk and cost aspects. Moreover, the firms with higher market value and growth opportunity tend to take more advantage of debt. It reveals that raising funds from credit markets is easier for those firms with a high expectation of future growth in basic materials, which has demonstrated Pecking Order Theory (POT) that firms with better growing prospects have more requirements on funding, and thus it would contribute to borrow more. Last, the firm size is positively associated with total debt ratio, suggesting that the large firms in basic material tend to use more debt that is in accordance with prediction of agency cost. The larger firms in the basic

material industry are easier to obtain debt securely compared to those SMEs, since the information asymmetric problem is smaller in larger firms.

To sum up, the basic materials sector as a deeply cyclical industry with producing durable goods or products is more likely to suffer from keeping low cost production and many other uncertainties with external economic environment, a high uncertainty behind the demand of consumption and domestic investment would mark decline in production in this sector. In a consequence, the financing pattern of these firms in basic material sector is a risk-sensitive and cost-efficient model and the internal retained earnings and debt issuance are preferred over issuing shares.

b) Consumer Goods:

The industry of consumer goods is defined as both a cyclical and non-cyclical industry⁴¹. Compared to products in basic materials, the consumer goods usually are related to items purchased by individuals over manufacturers and industries. The main tasks or goals of this type of firm are reducing production costs and stocks, enhancing product quality, improving operation and establishing better communication within departments. In empirical results, the model has 86.2 per cent R-square value in the OLS model with lagged debt ratio. Similarly, the sign of these four significant explanatory variables are the same with basic material sectors. Proxy of liquidity is significant related to total debt at 1 per cent, profitability is significant at 5 per cent and Firm Size is significant at 10 per cent. This also suggests that Pecking Order Theory (POT) also does matter in the consumer goods industry that consumer goods firms have to resort external financing followed by hybrids (such as debt and

⁴¹ The consumer goods sector in this study mainly comprises of Automobiles & parts, Food & Beverage, Personal & household goods three sub-sectors. The Automobiles & Part, household goods are categorized as cyclical sector as the consumption of these products would reduce during economic recession period. However, for Food & Beverage and other daily-based essentials, they are non-durable products and their consumption or revenue is not likely to change by economic condition. Hence, on the whole, the industry of consumer goods is defined as both cyclical and non-cyclical sector.

convertibles and equity as last financing resort). Last, the larger firms are still at an advantage from scale of economy and lower asymmetric information cost when they seek debt finance.

c) Industrials:

The industrial sector mainly refers to manufacturing companies as a secondary sector in economy. As the Panel 2 in Table 6.31 has shown, their major activities mainly cover construction, manufacturing, and transportation sub-sections. According to their industry feature, the manufacturing companies have relatively high cyclicalities that are affected by overall economic volatility. In the result, the regression model in OLS estimation obtains 84.4 per cent R-square, which is in the medium level compared to other eight industries in the full sample. Overall, the firm-specific factors have better explanation on firm's capital structure decision in our result. Five out of ten variables are significant. The administration cost, liquidity, market-to-book three proxies are significant at 1 per cent, the firm size is significant at 5 per cent and profitability is at 10 per cent. In general, the significant variables in the industrial sector are similar to other industries except proxy of administration cost. The larger manufacturing firms take advantage of the scale to be able to obtain more debts. Moreover, firms in this sector with more liquid assets and expenses on administration are inversely associated with total debt ratio, suggesting that they would avoid debt issuance when internal capital is sufficient and cost-efficient.

d) Utility Sector:

The sector of utility mainly refers to those power producers that deliver electricity, water or other energy sources. The electricity companies are sensitive to change of regulation and price volatility and it is a heavily regulated monopoly sector in Asia. There is a high entry

barrier as a result of relatively higher fixed costs and operating expenses. In the result, the OLS model in this sector performed least in total debt ratio regarding R-square among all sectors, which is around 73.7 per cent. In terms of significant variables in GMM estimation, five explanatory variables are significant to total debt ratio. Only the proxy of profitability is significant at 1 per cent, firm size and market-to-book ratios are significant at 5 per cent, proxies of tangibility and growth opportunity are significant at 10 per cent. One of the most interesting findings is that tangibility shows a positive sign in this sector that the electricity firms with more tangible asset as collaterals are easier to obtain funds through issuing debts, which is in line with trade-off theory. It could be understood that the Asian firms in utility sector usually retain their competitiveness through creating economies of scale in order to keep lower costs. Moreover, more tangible assets as collaterals could mitigate the lenders' risks in this sector. Second, the firms with greater growth opportunities are likely to issue more equity to meet their intensive capital requirement. In fact, the utility sector is gradually forcing to find new business models, including carbon reduction in electricity and renewable energy sources with a huge change of techniques within this sector. Hence, diverse external funding support is necessary for its R&D and market re-regulation. As Nick (2013) has pointed out that a more diverse source of capital is expected to come into the utility sector in Europe so as to reduce the cost of building assets and to attract more utility players with sector reform⁴². This reform and new business model has gradually begun to be implemented in utility sector in Asia in recent years with global climate change, privatization and the market-oriented model increasingly applied (Gabriele, 2004).

⁴² Nick Luff (2013) is group finance director at Britain's Centria. He was interviewed by financial times on 5 Aug 2013 about finding new business models for utility groups. The news link is as following: <http://www.ft.com/cms/s/0/93e28206-f37e-11e2-942f-00144feabdc0.html#axzz2lfXZkpCa>.

B) Growing Industries:

a) Consumer Services:

The key characteristic of consumer services section is a human capital-based section, which is relatively more complex and vast. More narrowly, this type of people-based services industry does not mainly rely on machinery. In contrast, they tend to require employees with a high level of education in order to deliver professional services. In Asia, the service-based sectors are expected to largely expand and develop quantitatively and qualitatively. In the empirical result, it obtains a slightly lower R-square at around 83.6 per cent with lagged debt ratio. Only three out of ten variables are significantly related to total debt ratio. Two of them (profitability and liquidity) are significantly negative to total debt ratio at 1 per cent level and another one (firm size) is significantly positive to total debt at 5 per cent. This result is generally consistent with result of Nunes and Serrasqueiro (2011) in Portuguese service industries.

These selected firm-specific explanatory factors in our study have a relatively weak explanation on capital structure decision in the consumer service sector compared to those mature sectors. It reveals that the services industry still prefers to self-finance as a priority over using external finance, which is identical to the majority of results in existing literature (i.e. Timan and Wessels 1988, Chen, 2004). Moreover, due to its industry nature, issuing shares or debts might not be easy for service-based firms, since keeping a constant level of growth on profit is not realistic during the pre-seed stage.

b) Healthcare industry:

The main activities in this sector consist of medical, biotechnology goods and healthcare related services. It is a typical industry that is not easily affected by economic recession, even

in the period of financial crisis. With progress of society and the welfare system, the healthcare sector is gradually transferring to the secondary or tertiary sector in the economy for providing more professional care services in Asia. The health-care system is not only facing escalating costs and rapid changes, but the change of lifestyle new technologies and rising expectations also contributes to increase demands on health-care systems. In the result, the model performance in OLS estimation is the best fit than other industries regarding R-square value, which has reached 89.8 per cent. Only two of ten variables are significant. The liquidity proxy is significantly reverse to total debt with 1 per cent significance and growth opportunity is significant at 5 per cent. The nature of healthcare industry might be able to explain the weak firm-specific explanation on firm's capital structure in healthcare sector. Basically, healthcare sector can be divided into profit-based and non-profit-based companies. For those not-for-profit orientation hospitals and acute caring services, minimising overall cost of finance is generally not as important as private hospitals or organizations. Their financing channels could mainly be provided by government welfare policy. Hence, the firm's financing choice in this sector seems not be able to be explained by those traditional capital structure theories. For those profit-based medical firms, as Wheeler *et al.* (2000)'s finding shown, their financing pattern is more inclined to pursue financing costs and easily change their capital structure by altering to equity finance when the cost of equity is lower than cost of debt.

c) Technology Industry:

The technology-based firms as innovation generators are playing an increasingly vital role in Asia's economic activities. In the OLS model, there is a poor performance regarding R-square value in the technology sector. The value for R-square is around 79 per cent including

lagged debt ratio. In Table 6.33, it can be seen that only two firm-specific factors have significant effects on firm's capital structure, the liquidity is at -1.394 with 5 per cent significance and growth opportunity is at 0.010 with 10 per cent. Firstly, a negative correlation between liquidity and total debt ratio might imply that these new technology firms prefer internal capital over external financing, which is consistent with many existing literatures (i.e. Myers, 1984; Williamson, 1988; Hogan and Hutson, 2005; Minola and Cassia, 2013). Moreover, existing literature further figures out that majority of outside equity comes from venture capitalists and angel investors in technology sector. Second, according to business features, the risk in the technology sector does exist or even is higher than others when the project does not work, work at a high cost (R&D expenses and marketing expenses) or ensuring whether development speed is faster than other competitors (Giudici and Paleari, 2000). Hence, the generated cash flow could not be enough to repay their loans. The OECD report reveals that the banks usually are reluctant to lend to these innovative firms, especially for those SMEs or technology firms in start-up stage⁴³. In this circumstance, a gap does exist between pre-seed and seed stages where profit expectations are less clear and the risks are much higher during start-up stage. In fact, this issue even exists in those developed economies, i.e. United Kingdom. As Ullah *et al.* (2011) have find out that those technology-based small firms still find difficulties in obtaining both debt and equity finance, especially those younger and established technology-based firms in the early stages of the innovation cycle or during the financial crisis period of 2008 to 2009. Their study also finds out that a high proportion of technology-based firms consider external finance from business angles, rather than borrowing from commercial banks. They suffer a more serious information asymmetry problem in these technology companies (Hogan and Hutson, 2005; Colombo and

⁴³ The OECD refers to organization of economic cooperation and development in United Kingdom.

Grilli, 2005a), since such firms with technology-involved are often opaque. On the whole, technological firms in Asia probably do not easily borrow from banks as a result of many higher bankruptcy and innovative risks, weak cash flow and existence of asymmetric information problems, etc.

Table 6.33: Empirical Regression Results: Dynamic Capital Structure and its Determinants of Capital Structure Decision across Industries:

Variables/Industries:	Basic Materials	Consumer Goods	Consumer Services	Healthcare	Industrials	Technology	Utility
Lagged Total Debt Ratio	0.674*** (-0.068)	0.573*** (-0.0863)	0.741*** (-0.055)	0.423** (-0.0738)	0.737*** (-0.0713)	0.788*** (-0.0859)	0.614*** (-0.0836)
Profitability	-0.253*** (-0.0888)	-0.385** (-0.0905)	-0.510*** (-0.164)	0.289 (-0.18)	-0.458* (-0.244)	0.147 (-0.293)	-0.794*** (-0.224)
Tangibility	-1.615 (-1.833)	0.598 (-2.734)	5.052 (-4.291)	-6.382 (-5.712)	-1.313 (-0.92)	5.987 (-15.1)	6.225* (-3.18)
Firm Size	1.394*** (-0.343)	1.797* (-0.507)	1.064** (-0.538)	2.855 (-3.791)	0.997** (-0.459)	0.865 (-0.71)	2.018** (-0.786)
Administration Expenses	-0.331 (-0.638)	-2.177 (-0.807)	1.019 (-0.802)	4.566 (-2.972)	-1.184*** (-0.435)	0.276 (-1.211)	0.021 (-1.048)
Liquidity	-1.664*** (-0.64)	-1.444*** (-1.024)	-1.791*** (-0.822)	-0.409*** (-2.331)	-1.508*** (-0.836)	-1.394** (-1.383)	-0.391 (-1.525)
Effective Tax Income	0.034 (-0.0263)	-0.00782 (-0.0327)	-0.0217 (-0.0359)	-0.00163 (-0.0503)	-0.0172 (-0.0294)	-0.0399 (-0.0476)	-0.016 (-0.0595)
Dividend Payout	0.00256 (-0.0144)	0.00209 (-0.0197)	0.016 (-0.0167)	-0.0352 (-0.0476)	0.00841 (-0.0183)	-0.0274 (-0.0222)	0.0287 (-0.0284)
Market-to-Book	0.542** (-0.214)	0.819* (-0.265)	0.33 (-0.327)	0.328 (-0.242)	0.901*** (-0.21)	0.578 (-0.496)	0.939** (-0.826)
Growth Opportunity	0.00832* (-0.00438)	-0.00222 (-0.00609)	0.0137 (-0.00859)	0.0210** (-0.00947)	-0.000407 (-0.00465)	0.0103* (-0.00602)	-0.0167* (-0.00864)
Stock Performance	-0.00436 (-0.00866)	-0.00862 (-0.00661)	0.00561 (-0.0116)	0.0232 (-0.0166)	-0.00209 (-0.00973)	0.00364 (-0.0225)	0.0229 (-0.0176)
Constant	-2.551 (-2.424)	5.478 (-3.042)	8.754** (-3.471)	19 (-14.4)	3.012 (-2.596)	5.868 (-4.523)	7.405 (-7.434)
Observations	520	563	262	99	858	118	130
Year Dummy	Y	Y	Y	Y	Y	Y	Y
AR1	0.011	0.004	0.091	0.0036	0.000*	0.067*	0.047*
AR2	0.538	0.795	0.785	0.5425	0.22	0.244	0.551
Sargan	0.352	0.322	0.319	0.4322	0.461	0.341	0.557
Hansen	0.555	0.833	0.84	0.53	0.588	0.779	0.872
No. of Instrument	23	20	64	64	32	59	38
Number of id	213	138	95	64	317	50	46

Note: The total debt in book value (%) (**TDBV**) is total debt divided by total debt and total shareholder equity in percentage of firm i in year t . The lagged debt ratio in book value (%) is total debt divided by total debt and total shareholder equity in percentage of firm i in year $t-1$. $X_{i,t}$ is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (**PROF**) is EBIT divided by total asset; tangibility in % (**TANG**) is tangible asset divided by total asset; Effective Tax rate in % (**TAX**) is income tax expenses divided by pretax income; Dividend Payout Ratio (**DIV**) is dividend per share divided by earning per share; Market-to-Book (**MTB**) is market value per share divided by book value per share; liquidity in % (**LIQUIDITY**) is current asset divided by current liability; Administration Cost in % (**ADMIN**) is the percentage of total administration expenses to total asset; Growth opportunity in % (**GROWTH**) is the change of total revenue in percentage; Stock Performance(**RETURN**) in % is the change of stock price in percentage. IndustryDummy is industry dummy, including nine industry groups (1. Basic Materials; 2. Consumer Goods; 3. Consumer Services; 4. Healthcare; 5. Industrials;; 6. Technology; 7. Utility). The sectors of oil & gas and telecommunication sectors are removed from running regression, because the number of firms are not enough to apply econometric model and the result is infeasible.

The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2002 to 2011. The Year dummy variables refers to if the year dummy is included in the estimate (1), AR1 and AR2 are first and second- order autocorrelation in the first-differenced residuals. Sargan-test is a test for the null of valid instruments and is asymptotically distributed as X^2 under the null. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 6.34: Empirical Regression Results: The Capital Structure Decision across Four Debt Ratios between Mature and Growing industries:

Variables	Growing Industries (TDBV)			
	TDBV	LTD	STD	TDMV
Lagged Debt	0.821*** (-0.0647)	0.608*** (-0.155)	0.748*** (-0.139)	0.701*** (-0.144)
PROF	-0.208*** (-0.0713)	-0.0438 (-0.038)	-0.101 (-0.0774)	-0.132 (-0.0933)
TANG	-1.236 (-2.999)	-9.632** (-4.516)	-4.218 (-3.272)	2.172 (-3.193)
SIZE	0.402 (-0.448)	1.041* (-0.602)	-0.541 (-0.403)	0.908 (-0.571)
ADMIN	0.199 (-0.707)	0.128 (-0.473)	-0.362 (-0.445)	1.001 (-5.526)
LIQUIDITY	-3.240*** (-0.832)	-0.385 (-0.454)	-2.148*** (-0.793)	-2.464*** (-0.821)
TAX	0.0108 (-0.0247)	-0.0329 (-0.0222)	0.0123 (-0.0259)	0.0121 (-0.0415)
PAYOUT	-0.00264 (-0.0125)	0.00151 (-0.0135)	0.0122 (-0.012)	-0.00735 (-0.0139)
MTB	0.294* (-0.169)	0.0467 (-0.17)	-0.0404 (-0.122)	-0.0796 (-0.547)
GROWTH	0.0102** (-0.00477)	0.00354 (-0.00516)	0.00975** (-0.00467)	0.00944 (-0.00582)
RETURN	-0.000255 (-0.0101)	0.000751 (-0.0053)	-0.00887 (-0.00673)	-0.112*** (-0.0197)
CRISIS	0.164 (-1.821)	0.181 (-2.183)	0.556 (-0.691)	1.968** (-0.851)
Constant	8.154*** (-2.902)	-2.932 (-2.743)	6.617 (-4.433)	15.66 (-23.73)
Observation	572	572	572	572
No. of id	216	216	216	216
Year Dummy	Y	Y	N	N
AR1	0.002	0.085	0.017	0.003
AR2	0.874	0.395	0.591	0.202
Sargen	0.198	0.174	0.554	0.844
Hansen	0.58	0.769	0.573	0.833
No. of instruments	23	63	30	23

Variables	Mature Industries (TDBV)			
	TDBV	LTD	STD	TDMV
Lagged Debt	0.817*** (-0.0538)	0.405** (-0.172)	0.589*** (-0.0735)	0.840*** (-0.0466)
PROF	-0.209*** (-0.0467)	-0.0778** (-0.0393)	-0.231*** (-0.0457)	-0.124*** (-0.0456)
TANG	0.208 (-0.778)	-4.968*** (-1.69)	-2.878** (-1.179)	0.532 (-0.793)
SIZE	0.794*** (-0.25)	2.049*** (-0.497)	-0.294 (-0.184)	1.270*** (-0.216)
ADMIN	-0.652** (-0.276)	-1.454*** (-0.505)	-0.271 (-0.337)	-0.513* (-0.279)
LIQUIDITY	-2.217*** (-0.592)	0.255 (-0.363)	-2.208*** (-0.423)	-1.849*** (-0.442)
TAX	0.0113 (-0.0157)	0.00132 (-0.0171)	-0.00986 (-0.0171)	0.0188 (-0.0157)
PAYOUT	-0.00463 (-0.00739)	-0.00716 (-0.00709)	0.00563 (-0.008)	-0.00501 (-0.00724)
MTB	0.530*** (-0.128)	0.249 (-0.18)	0.669*** (-0.148)	-0.344 (-0.226)
GROWTH	-0.000541 (-0.00262)	-0.00595 (-0.00368)	0.000715 (-0.00244)	0.00331 (-0.00229)
RETURN	-0.00858*** (-0.0029)	0.00344 (-0.00563)	-0.00788* (-0.00424)	-0.125*** (-0.00622)
CRISIS	-2.138*** (-0.546)	-2.527 (-1.971)	-0.027 (-0.783)	0.619 (-0.444)
Constant	3.148** (-1.56)	-11.12*** (-2.809)	9.117*** (-2.223)	1.752 (-1.539)
Observation	2131	2131	2131	2131
No. of id	818	818	818	818
Year Dummy	N	Y	Y	N
AR1	0	0.002	0	0
AR2	0.157	0.482	0.206	0.17
Sargen	0.147	0.123	0.256	0.195
Hansen	0.41	0.651	0.85	0.336
No. of instruments	56	56	65	23

Note: The industry can be grouped into mature and growing industries according to the phrase of industry development in economy. The sectors of basic materials, consumer goods, industrials, oil & gas, utilities are grouped into mature industries; the sectors of consumer services, healthcare, technology, and telecommunication are grouped into growing industries. This table further provides empirical results of capital structure decision in four debt measures between mature and growing industries by employing Two-Step GMM System method. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

6.3. Conclusion:

The findings of this chapter have shown that industrial factors play an important role in explaining a firm's capital structure decision in Asia. The degree of indebtedness does vary across the nine industrial categories. There is a relatively lower level of long-term debt ratio in growing or knowledge-based sectors (i.e. the healthcare and technology sectors), whereas the degree of short-term indebtedness almost has significant differences across these sectors in Asia. The effects of profitability and liquidity are the strongest in explaining the effect of firm-specific variables to capital structure decision across seven industries. This result is consistent with the pecking order theory (POT) hypotheses that the internal capital is the prime choice by firms and it still plays an essential role, given its advantages of lower risk and costs. Also, it is noticeable that the effect of firm size on capital structure decision is stronger in the industries with cost-saving oriented business models in traditional mature sectors (e.g. consumer goods, basic materials, industrials etc.), which shows that large firms seem to benefit from economies of scale compared to SMEs.

Regarding the comparison of capital structure decisions between mature and growing sectors, an interesting finding is that the effects of firm-specific factors are more significant in mature sector compared to growing sectors in Asia. The mature sectors find it easier to access funding from external financing channels. In a sharp contrast, the firms from growing knowledge-based sectors find it harder to access external capital from these formal financing channels as a result of many factors (such as lack of collateral, less clear profit and higher potential risks). In fact, this finding further illustrates that the cross-industry differences in terms of industrial characteristics, bankruptcy and business risk, growth prospect, financing tradition, government intervention, and regulatory and financial frameworks result in different preferences of financing decision. The banking sector and equity market in Asia

tend to provide funding to the industries with more collateral, lower operating risk and consistent return. Therefore, technology-based growing firms are less reliant on debt finance because they are still young (at start-up stage), and have insufficient credit record (i.e. more uncertainty). More importantly, our findings have revealed that differences in the financing decision of a firm from the heavily government controlled sectors (i.e. utility, oil and gas sectors) are too small to be explained by firm-specific factors. This implies that there are unobserved or exogenous factors that may affect the capital structure decision in these firms.

Appendix-4:

Table 6.35(1): Descriptive Statistics:

Variables		1) Basic Materials	2) Consumer Goods	3) Consumer Services	4) Healthcare	5) Industrials	6) Oil & Gas	7) Technology	8) Telecommu- nications	9) Utilities
Observations (No. of Firms)		956	1086	432	296	1540	100	240	31	203
Dependent Variables:										
Total Debt Ratio in Book Value (%) (TDBV)	Mean	42.7	41.6	43.2	41.6	39.6	39.2	44.1	39.9	51.1
	STD	18.7	18.8	18.5	18.3	19.5	18.8	15.2	14.9	15.4
	Min	0	0	3.3	0	0	0.3	7.1	10.3	12.8
	Max	84.6	92.4	91.6	89	98.6	77.9	84.7	73.7	93.6
Long-term Debt Ratio (%) (LTD)	Mean	9.6	5.9	7.4	4.4	8.5	14	2.5	12.8	22.4
	STD	10.5	8.2	10.8	7	10.6	13.3	5.5	13	15.2
	Min	0	0	0	0	0	0	0	0	0
	Max	57.1	55.3	55	40.5	57.9	52.7	49.7	39.9	56.4
Short-term Debt Ratio (%) (STD)	Mean	20.7	19.2	15.4	19.8	17.1	14.8	17.3	12.2	14.4
	STD	15.7	15.8	13.7	16.6	13.4	13.2	15.3	14.3	10.9
	Min	0	0	0	0	0	0	0	0	0
	Max	82.9	80.4	64.1	68.3	82.3	50.5	67.7	51.2	54.1
Total Debt Ratio in Market Value (%) (TDMV)	Mean	34	29.3	28.5	24.2	30.4	28.4	26.3	23.8	39.7
	STD	19.4	18.9	18.2	17.3	18.6	19.8	16.8	17.4	17.7
	Min	0	0	0.4	0	0	0.1	1.8	3.1	4.8
	Max	85.3	96.2	89.5	76.8	96.7	78.7	81.6	69.2	81.3

Note: The definition of each variable is as following: This table provides the mean, standard deviation, minimum and maximum values of each variable in nine industry groups. Four Dependent Variables: total debt in book value (%) (**TDBV**) is total debt divided by total debt and total shareholder equity in percentage; long-term debt (%) (**LTD**) is long-term debt divided by total debt and total shareholder equity in percentage; total short-term Debt (%) (**STD**) is short-term debt divided by total debt and shareholder equity in percentage; total debt in market value (%) (**TDMV**) is total debt divided by total debt and market capitalization in percentage.

Ten Independent Variables: Profitability in % (**PROF**) is EBIT divided by total asset; tangibility in % (**TANG**) is tangible asset divided by total asset; Effective Tax rate in % (**TAX**) is income tax expenses divided by pretax income; Dividend Payout ratio (**DIV**) is dividend per share divided by earning per share; Market-to-Book (**MTB**) is market value per share divided by book value per share; liquidity in % (**LIQUIDITY**) is current asset divided by current liability; Administration Cost in % (**ADMIN**) is the percentage of total administration expenses to total asset; Growth opportunity in % (**GROWTH**) is the change of total revenue in percentage; Stock Performance (**RETURN**) in % is the change of stock price in percentage.

Table 6.36(2): Descriptive Statistics:

		1)	2)	3)	4)	5)	6)	7)	8)	9)
Explanatory Variables:		Basic Materials	Consumer Goods	Consumer Services	Healthcare	Industrials	Oil & Gas	Technology	Telecommunications	Utilities
Profitability (%) (PROF)	Mean	7.1	6.4	6.1	7.4	6	8.6	5	10.2	5.2
	STD	7.6	7	6.6	7.3	5.7	5.7	5.5	6.1	4.3
	Min	-17.8	-19	-12.5	-17.8	-14.1	-1.8	-7.8	-2.1	-7.5
	Max	84.2	41.9	50	38	42.9	32.9	28.2	21.7	19.6
Tangibility (%) (TANG)	Mean	91.6	94.1	94.1	96.3	89	73.2	97.8	77.4	95.1
	STD	15.7	13.3	14.3	8.3	19.3	29.1	4.7	25.3	12.4
	Min	21.8	24.5	19.3	44.4	16.2	24.5	66.5	30.6	39.1
	Max	100	100	100	100	100	100	100	100	100
Effective Tax Rate (%) (TAX)	Mean	18.7	17.2	22.2	18.7	17.7	16.2	14.5	21.8	18.6
	STD	13	12.2	13.6	13.2	11.8	9.9	11.8	12	12.3
	Min	0	0	0	0	0	0	0	4	0
	Max	69.8	66	66	66.8	69.3	40.7	68.2	57.7	68.4
Dividend Payout ratio % (DIV)	Mean	26.8	28.7	26.1	25.7	28.4	28.2	27.8	43.2	23.4
	STD	25.8	27.4	27.8	27	26	23.9	27.4	24.5	25.9
	Min	0	0	0	0	0	0	0	0	0
	Max	100	100	98.7	98.2	100	100	98.7	91.7	98.2
Market-to-Book (MTB)	Mean	2.1	2.7	3.1	3.8	2.3	2.6	3.5	3.3	2.4
	STD	1.7	2.2	2.3	2.9	1.9	2.3	2.2	1.8	1.6
	Min	0.1	0.1	0.2	0.5	0.2	0.5	0.4	1.1	0.6
	Max	14	13.7	14.9	14.8	14.9	14	14.5	8	14.1
Firm Size (SIZE)	Mean	6	5.9	5.8	5.4	5.9	6.6	5.6	7.1	6.7
	STD	1.3	1.2	1.3	0.9	1.3	1.4	0.9	1.9	1.2
	Min	2.8	3	2.3	3	2.3	4.1	4	4.6	4.2
	Max	10.7	9.9	9.9	8.1	10.7	11.5	8.3	11.2	10.1
Liquidity (LIQUIDITY)	Mean	2	2.2	2.2	2.4	2.2	2	2	2.3	1.5
	STD	1.7	1.9	2	2.2	1.7	1	1.6	1.9	1.1
	Min	0.1	0.2	0.3	0.3	0.1	0.5	0.3	0.3	0.3
	Max	13.8	13.2	14.9	13	14.3	5.5	13.9	8	11
Administration expenses % (ADMIN)	Mean	4.9	6.1	6.4	7.3	5.7	4.3	6.9	12.5	2.3
	STD	4.3	4.3	4.8	5.1	4.5	4.1	5.4	9.3	2
	Min	0.3	0.6	0.1	1.8	0.2	0.3	1.1	3.3	0.1
	Max	52.4	37.5	26.9	38.9	42.7	17.4	29.9	39.9	16.5
Growth Opportunity % (GROWTH)	Mean	30.4	23.3	14.9	20.3	25.1	28.3	20.8	21	26.3
	STD	82.3	71.9	64.8	69	71.9	65.7	69.8	53.5	90.2
	Min	-91.7	-89.7	-90	-90	-89.7	-83.2	-89.5	-23.1	-82.3
	Max	441.3	441.3	293.6	401.4	440.4	409.1	395.7	294.1	409.1
Stock Performance (%) (RETURN)	Mean	11.5	19.4	19.1	17.1	14.8	25.7	15	15.1	15.1
	STD	60.1	65.8	62.8	64.8	61.2	66.6	63.2	32.3	57.9
	Min	-88.8	-93.8	-87.4	-74.1	-87.1	-80.2	-76.8	-45.8	-78.2
	Max	223.3	250	200	281.3	242.5	231.6	196	80.2	192.9

Table 6.37(1): Regression Result across Nine Industrial Groups: Total Debt in Book Value:

Explanatory Variables	Basic Materials			Consumer Goods			Consumer Services			Healthcare		
	1-OLS	1-FE	1-GMM	2-OLS	2-FE	2-GMM	3-OLS	3-FE	3-GMM	4-OLS	4-FE	4-GMM
Lagged Total Debt Ratio	0.841*** (0.0212)	0.382*** (0.0501)	0.674*** (0.0680)	0.854*** (0.0203)	0.338*** (0.0477)	0.573*** (0.0863)	0.811*** (0.0316)	0.217*** (0.0620)	0.741*** (0.0550)	0.893*** (0.0341)	0.315*** (0.0768)	0.423** (0.0738)
Profitability (PROF)	-0.186*** (0.0460)	-0.261*** (0.0741)	-0.253*** (0.0888)	-0.201*** (0.0535)	-0.454*** (0.101)	-0.385*** (0.0905)	-0.310*** (0.0761)	-0.397*** (0.132)	-0.510*** (0.164)	-0.222*** (0.0797)	-0.0217 (0.150)	0.289 (0.180)
Tangibility (TANG)	-1.183 (1.734)	-3.489 (5.033)	-1.615 (1.833)	0.402 (1.657)	-13.94*** (4.963)	0.598 (2.734)	3.380 (3.094)	-14.80** (5.709)	5.052 (4.291)	-14.36*** (4.932)	-8.635 (14.25)	-6.382 (5.712)
Firm Size (SIZE)	0.945*** (0.268)	6.591*** (0.974)	1.394*** (0.343)	0.555** (0.268)	2.159** (1.067)	1.797* (0.507)	0.840* (0.470)	5.408*** (1.146)	1.064** (0.538)	0.412 (0.594)	-0.752 (1.406)	2.855 (3.791)
Administration Expenses (ADMIN)	-0.633 (0.505)	3.263** (1.418)	-0.331 (0.638)	-0.978* (0.534)	2.838* (1.569)	-2.177 (0.807)	1.087 (0.753)	1.569 (1.870)	1.019 (0.802)	0.837 (0.947)	1.202 (2.075)	4.566 (2.972)
Liquidity (LIQUIDITY)	-2.824*** (0.563)	-4.046*** (0.953)	-2.664*** (0.640)	-2.192*** (0.507)	-2.613*** (0.880)	-4.444*** (1.024)	-3.442*** (0.731)	-2.717*** (0.954)	-3.791*** (0.822)	-2.441*** (0.803)	-8.844*** (1.547)	-8.409*** (2.331)
Effective Tax Income (TAX)	0.0442* (0.0261)	-0.0367 (0.0420)	0.0340 (0.0263)	0.00249 (0.0263)	-0.0505 (0.0425)	-0.00782 (0.0372)	-0.0150 (0.0355)	0.000628 (0.0390)	-0.0217 (0.0359)	0.0307 (0.0372)	-0.00336 (0.0497)	-0.00163 (0.0503)
Dividend Payout (DIV)	0.0154 (0.0134)	0.0156 (0.0202)	0.00256 (0.0144)	0.00210 (0.0120)	-0.0303 (0.0188)	0.00209 (0.0197)	0.0110 (0.0193)	0.0192 (0.0197)	0.0160 (0.0167)	0.0214 (0.0202)	-0.0397 (0.0250)	-0.0352 (0.0476)

Note: The total debt in book value (%) (**TDBV**) is total debt divided by total debt and total shareholder equity in percentage of firm i in year t . The lagged debt ratio in book value (%) is total debt divided by total debt and total shareholder equity in percentage of firm i in year $t-1$. $X_{i,t}$ is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (**PROF**) is EBIT divided by total asset; tangibility in % (**TANG**) is tangible asset divided by total asset; Effective Tax rate in % (**TAX**) is income tax expenses divided by pretax income; Dividend Payout Ratio (**DIV**) is dividend per share divided by earning per share; Market-to-Book (**MTB**) is market value per share divided by book value per share; liquidity in % (**LIQUIDITY**) is current asset divided by current liability; Administration Cost in % (**ADMIN**) is the percentage of total administration expenses to total asset; Growth opportunity in % (**GROWTH**) is the change of total revenue in percentage; Stock Performance(**RETURN**) in % is the change of stock price in percentage. IndustryDummy is industry dummy, including nine industry groups (1. Basic Materials; 2. Consumer Goods; 3. Consumer Services; 4. Healthcare; 5. Industrials; 6.Oil & Gas; 7. Technology; 8.telecommunication; 9. Utility). All t-values are reported in the parentheses: standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 6.38(2): Regression Result across Nine Industrial Groups: Total Debt in Book Value:

Explanatory Variables	Basic Materials			Consumer Goods			Consumer Services			Healthcare		
	1-OLS	1-FE	1-GMM	2-OLS	2-FE	2-GMM	3-OLS	3-FE	3-GMM	4-OLS	4-FE	4-GMM
Market-to-Book (MTB)	0.392*	0.267	0.542**	0.466***	0.912***	0.819*	0.492*	0.47	0.33	0.103	0.156	0.328
	-0.236	-0.421	-0.214	-0.166	-0.343	-0.265	-0.276	-0.385	-0.327	-0.181	-0.286	-0.242
Growth Opportunity (GROWTH)	0.00888**	0.00919*	0.00832*	0.00304	0.00454	-0.00222	0.00394	0.00298	0.0137	0.0172**	0.00407	0.0210**
	-0.00404	-0.00481	-0.00438	-0.00483	-0.00557	-0.00609	-0.0075	-0.00735	-0.00859	-0.00821	-0.0082	-0.00947
Stock Performance (RETURN)	-0.00983*	-0.00109	-0.00436	-0.00597	-0.00276	-0.00862	-0.00455	-0.00529	0.00561	0.00322	0.00422	0.0232
	-0.00578	-0.007	-0.00866	-0.0051	-0.00624	-0.00661	-0.00877	-0.00868	-0.0116	-0.00797	-0.00886	-0.0166
Constant	0.554	-0.402	-2.551	2.079	25.71***	5.478	9.828***	8.028	8.754**	5.384	41.05***	19
	-2.207	-6.036	-2.424	-2.103	-6.364	-3.042	-3.258	-8.096	-3.471	-4.052	-8.113	-14.4
Observations	520	520	520	563	563	563	262	262	262	175	175	99
R-squared	0.86	0.421	-	0.862	0.291	0.852	0.836	0.392	-	0.898	0.454	-
Year Dummy	N	N	Y	N	N	N	N	N	Y	N	N	Y
AR1	-	-	0.011	-	-	0.004	-	-	0.091	-	-	0.0036
AR2	-	-	0.538	-	-	0.795	-	-	0.785	-	-	0.5425
Sargan	-	-	0.352	-	-	0.322	-	-	0.319	-	-	0.4322
Hansen	-	-	0.555	-	-	0.833	-	-	0.53	-	-	0.53
No. of Instrument	-	-	70	-	-	101	-	-	108	-	-	64
Number of id		213	213		225	138		95	95		64	64

Note: The total debt in book value (%) (**TDBV**) is total debt divided by total debt and total shareholder equity in percentage of firm i in year t . The lagged debt ratio in book value (%) is total debt divided by total debt and total shareholder equity in percentage of firm i in year $t-1$. X_{it} is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (**PROF**) is EBIT divided by total asset; tangibility in % (**TANG**) is tangible asset divided by total asset; Effective Tax rate in % (**TAX**) is income tax expenses divided by pretax income; Dividend Payout Ratio (**DIV**) is dividend per share divided by earning per share; Market-to-Book (**MTB**) is market value per share divided by book value per share; liquidity in % (**LIQUIDITY**) is current asset divided by current liability; Administration Cost in % (**ADMIN**) is the percentage of total administration expenses to total asset; Growth opportunity in % (**GROWTH**) is the change of total revenue in percentage; Stock Performance (**RETURN**) in % is the change of stock price in percentage. Industry Dummy is industry dummy, including nine industry groups (1. Basic Materials; 2. Consumer Goods; 3. Consumer Services; 4. Healthcare; 5. Industrials; 6. Oil & Gas; 7. Technology; 8. telecommunication; 9. Utility). The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. The data are drawn from the datastream and Bloomberg databases. In the GMM estimation (Arellano-Bond test), the Year dummy variables refers to if the year dummy is included in the estimate (1), AR1 and AR2 are first and second-order autocorrelation in the first-differenced residuals. Sargan and Hansen tests are tests for the null of valid instruments and is asymptotically distributed as χ^2 under the null. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 6.39(1): Table: Regression Result across Nine Industrial Groups: Total Debt in Book Value:

Explanatory Variables	Industrials			Technology			Utility		
	5-OLS	5-FE	5-GMM	7-OLS	7-FE	7-GMM	9-OLS	9-FE	9-GMM
Lagged Total Debt Ratio	0.873*** (0.0164)	0.359*** (0.0370)	0.737*** (0.0713)	0.863*** (0.0486)	0.563*** (0.0970)	0.788*** (0.0859)	0.769*** (0.0502)	0.179*** (0.0640)	0.614*** (0.0836)
Profitability (PROF)	-0.174*** (0.0471)	-0.376*** (0.0862)	-0.458* (0.244)	-0.0698 (0.125)	-0.504 (0.351)	0.147 (0.293)	-0.538*** (0.202)	-1.338*** (0.268)	-0.794*** (0.224)
Tangibility (TANG)	-1.485 (0.970)	-15.00*** (2.718)	-1.313 (0.920)	6.751 (12.30)	-34.85 (33.21)	5.897 (15.10)	5.629 (3.910)	3.865 (7.444)	6.225* (3.180)
Firm Size (SIZE)	0.310 (0.228)	2.354*** (0.790)	0.997** (0.459)	0.532 (0.790)	0.0889 (2.393)	0.865 (0.710)	0.787 (0.756)	4.861*** (1.792)	2.018** (0.786)
Administration Expenses (ADMIN)	-1.205*** (0.372)	-3.096** (1.212)	-1.184*** (0.435)	0.376 (1.259)	0.640 (2.945)	0.276 (1.211)	-0.200 (1.102)	-7.298*** (2.444)	0.0215 (1.048)
Liquidity (LIQUIDITY)	-1.640*** (0.416)	-4.910*** (0.757)	-2.508*** (0.836)	-3.276*** (1.245)	-5.732*** (1.780)	-3.394** (1.383)	0.572 (1.335)	2.244 (1.372)	-0.391 (1.525)
Effective Tax Income (TAX)	-0.0224 (0.0231)	-0.0206 (0.0332)	-0.0172 (0.0294)	0.00462 (0.0521)	0.122 (0.0804)	-0.0399 (0.0476)	0.0269 (0.0644)	0.00596 (0.0738)	-0.0160 (0.0595)
Dividend Payout (DIV)	-0.00777 (0.0103)	-0.00378 (0.0142)	0.00841 (0.0183)	-0.0265 (0.0236)	-0.0882** (0.0341)	-0.0274 (0.0222)	0.0233 (0.0310)	-0.0175 (0.0291)	0.0287 (0.0284)

Note: The total debt in book value (%) (**TDBV**) is total debt divided by total debt and total shareholder equity in percentage of firm i in year $t-1$. $X_{i,t}$ is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (**PROF**) is EBIT divided by total asset; tangibility in % (**TANG**) is tangible asset divided by total asset; Effective Tax rate in % (**TAX**) is income tax expenses divided by pretax income; Dividend Payout Ratio (**DIV**) is dividend per share divided by earning per share; Market-to-Book (**MTB**) is market value per share divided by book value per share; liquidity in % (**LIQUIDITY**) is current asset divided by current liability; Administration Cost in % (**ADMIN**) is the percentage of total administration expenses to total asset; Growth opportunity in % (**GROWTH**) is the change of total revenue in percentage; Stock Performance(**RETURN**) in % is the change of stock price in percentage. IndustryDummy is industry dummy, including nine industry groups (1. Basic Materials; 2. Consumer Goods; 3. Consumer Services; 4. Healthcare; 5. Industrials; 6. Technology; 7. Utility). The sectors of oil & gas and telecommunication sectors are removed from running regression, because the number of firms are not enough to apply econometric model and the result is infeasible. The The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011.

Table 6.40(2): Continuing Table: Regression Result across Nine Industrial Groups: Total Debt in Book Value:

Explanatory Variables	Industrials			Technology			Utility		
	5-OLS	5-FE	5-GMM	7-OLS	7-FE	7-GMM	9-OLS	9-FE	9-GMM
Market-to-Book (MTB)	0.753*** -0.168	0.913*** -0.299	0.901*** -0.21	0.143 -0.336	0.376 -0.846	0.578 -0.496	0.881 -0.644	-0.664 -0.807	1.939** -0.826
Growth Opportunity (GROWTH)	-0.00135 -0.00354	0.00670* -0.00391	-0.000407 -0.00465	0.0102 -0.00995	-0.00413 -0.0122	0.0103* -0.00602	-0.0135 -0.00845	-0.0110* -0.00611	-0.0167* -0.00864
Stock Performance (RETURN)	-0.0164*** -0.00472	-0.0172*** -0.00544	-0.00209 -0.00973	7.17E-06 -0.0116	-0.00967 -0.0157	0.00364 -0.0225	0.00128 -0.0148	0.00857 -0.0129	0.0229 -0.0176
Constant	0.621 -1.518	1.24 -5.019	3.012 -2.596	6.743 -5.155	25.05 -16.6	5.868 -4.523	7.452 -6.231	-11.48 -13.57	7.405 -7.434
Observations	858	858	858	118	118	118	130	130	130
R-squared	0.844	0.427		0.791	0.583		0.737	0.551	
Year Dummy	N	N	Y	N	N	Y	N	N	Y
AR1	-	-	0.000*	-	-	0.067*	-	-	0.047*
AR2	-	-	0.22	-	-	0.244	-	-	0.551
Sargan	-	-	0.461	-	-	0.341	-	-	0.557
Hansen	-	-	0.588	-	-	0.779	-	-	0.872
Heteroskedasticity Test	0.7333	-	-	0.0093	-	-	0.0000*	-	-
No of Instruments	-	-	108	-	-	59	-	-	38
Number of id		317	317		50	50		46	46

Note: IndustryDummy is industry dummy, including nine industry groups (1. Basic Materials; 2. Consumer Goods; 3. Consumer Services; 4. Healthcare; 5. Industrials; 6. Technology; 7. Utility). The sectors of oil & gas and telecommunication sectors are removed from running regression, because the number of firms is not enough to apply econometric model and the result is infeasible. The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. The data are drawn from the DataStream and Bloomberg databases. In the GMM estimation (Arellano-Bond test), the Year dummy variables refers to if the year dummy is included in the estimate (1), AR1 and AR2 are first and second- order autocorrelation in the first-differenced residuals. The Sargan and Hansen tests are the tests for the null of valid instruments and are asymptotically distributed as χ^2 under the null. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Chapter 7: Factors Affecting Capital Structure Decision: Analyzing from Country-level factors:

7.1: Introduction:

The pioneering study of Rajan and Zingales (1995) concludes that inter-country variation enables identify the determinants of capital structure and provides a better understanding of firm's financing decisions. Accordingly, the capital structure decisions required for either the formation of a new firm or to finance firm growth are not only determined by their own firm and industrial characteristics, but also on the general country-level environment (i.e. the development of financial markets and institutional frameworks). The authors called for more studies to be conducted to provide new evidence of different country specific factors. A handful of studies responded to the call of Rajan and Zinglaes (1995), but this left room for many studies in the future to fill this significant gap.

The rapid and remarkable economic growth in Asia accompanied by a series of reform policies, makes it interesting to investigate how cross-country institutional qualities and differences can change firm's capital structure decision. Hence these factors may directly or indirectly affect the cost of capital through bankruptcy costs, agency costs, information asymmetry costs and tax costs.

The aim of this chapter is to provide new evidence on the determinants of firm's capital structure decisions based on macroeconomic development and institutional framework. The macroeconomic factors investigated in this chapter include: 1) Development of Stock and Bond markets; 2) Inflation Rate; and 3) GDP growth. In terms of institutional-specific factors, it is grouped into six main categories of institutional features to examine their relationship to capital structure decision, including 1) ease of access; 2) information asymmetry; 3) power of law; 4) financial distress cost; 5) business environment; and 6)

development of financial sector. This chapter attempts to investigate how the development of legal and institutional features affects a firm's capital structure decision in Asia by introducing new variables.

This chapter is organized as follows. The following section describes the dataset on country and institutional-specific aspects in our study. The third and the fourth sections present empirical regression results of country- and institutional-specific effects on capital structure decision between mature and growing industries. The conclusion and policy implications for policymakers engaged in institutional design are reported in the last section.

7.2. Descriptive Statistics:

7.2.1. Descriptive Statistics: Country and Institutional-specific Factors:

According to Table 7.41, in terms of country-specific conditions in these six Asian markets, it can be seen that the development of stock market has a relatively large variation among these six Asian markets. In the full sample, the Hong Kong Stock Exchange, in terms of market capitalization, is the most advanced and developed, whereas the Jakarta Stock Exchange (JSX) of Indonesia is relatively less developed compared to these six Asian markets. Regarding comparison of development of bond market, the bond market in Malaysia is the most developed, Indonesia's bond market is still the least developed among these six markets. In terms of price stability regarding to inflation index, Indonesia has the most fluctuating inflation rate than other countries in recent decades, even other emerging countries (i.e. China and Malaysia). The other five markets share an inflationary rate that is stable at around 2.6 per cent. In regard to economic growth, apparently, China enjoyed a significantly high GDP growth at average 10.48 per cent compared to the other five markets, whereas Thailand has the slowest growth at only 2.4 per cent in recent decades.

Table 7.41: Country- and Institutional-specific Characteristics of selected Asian Countries in this Study:

	China	Hong Kong	Indonesia	Malaysia	Singapore	Thailand	Full Sample Mean	Full Sample Median
Country-specific Factors:								
Development of Stock Market	66.63	433.44	38.05	139.50	181.36	70.25	154.87	104.87
Inflation Rate	2.80	2.13	7.49	2.47	2.51	2.76	3.36	2.64
Development of Bond Market	42.41	55.28	17.08	83.16	69.01	63.77	55.12	59.53
GDP Growth	10.48	4.64	6.25	5.16	6.72	2.38	5.94	5.70
Institutional-Specific Factor								
1) Ease of Access								
Creditor Right	2	4	2	3	3	2	2.67	2.50
Strength of Legal Right	6	10	3	10	10	5	7.33	8.00
Investor Protection Ranking	98	3	52	4	2	12	28.50	8.00
2) Information Asymmetry								
Disclosure Requirement	0	1	1	0	0	1	0.50	0.50
Credit Information	4	5	4	6	4	5	4.67	4.50
3) Power of Law								
Formalism	3.41	0.73	3.90	2.34	2.50	3.14	2.67	2.82
Enforcing Contract	19	9	147	30	12	22	39.83	20.50
Corruption	40	75	32	50	86	35	53.00	45.00
4) Financial Distress Cost								
Cost of bankruptcy	0.09	0.09	0.18	0.145	0.01	0.36	0.15	0.12
Time to deal with bankruptcy	1.8	0.63	5.5	2.3	0.58	2.7	2.25	2.05
5) Business Environment								
Starting a Business	158	5	175	16	3	91	74.67	53.50
Human Capital (Enrolment in Tertiary Sector)	19.19	43.89	19.95	31.25	NA	45.82	32.02	31.25
FDI % of GDP	3.1	28.3	2.2	3.2	20.6	2.9	10.05	3.15
6) Financial Sector								
Non-performing loans % of gross loans	8.76	1.88	6.39	8.06	3.34	8.4	6.14	7.23
Stability of Stock Price	121.85	35.19	88.66	40.32	35.08	68.80	64.98	54.56

Note: . There are four proxies in country-specific factors, which includes development of stock market, inflation rate, development of bond market and GDP Growth. **The development of stock market** refers to total market capitalization in USD in each market. **Inflation** is measure by the consumer price index. **The development of bond market** is the size of bond market as percentage of nominal GDP, which includes all bonds issued by government, financial institutions and corporates. **GDP growth** is the sum of gross value added by all resident producers in economy. In terms of institutional-specific factors, there are six groups to examine how institutional-specific factors have influence on capital structure decision. In the group of ease of access, there are three proxies, which is creditor rights, strength of legal rights and investor protection. The **creditor right** is creditor rights scores in Djankov et.al (2007)'s study. **Strength of legal right** is degree of collateral and bankruptcy laws to protect the rights of borrowers and lenders and thus facilitate lending. The range of its index from 0 to 10, higher scores indicates that there laws are better designed to expand access to credit. **Investor Protection** is the strength of minority shareholder protections against directors' misuse of corporate assets for personal gain according to WorldBank questionnaire. In the second group of information asymmetry, there are two proxies, which is disclosure requirement and credit information respectively. The **disclosure requirement** is a dummy variable whether the law or regulation of the country requires to provide either financial or/and business interest disclosures, value of 1 is they have to, value of zero otherwise. The proxy of **credit information** measures credit depth of information index that affect the scope, accessibility and quality of credit information available. This index range from 0 to 6, a higher value indicates the availability of more credit information. In the group of power of law, there are three proxies, which is formalism, enforcing contract and corruption respectively. The **formalism** is a measure of how heavily the law regulates the procedure according to Djankov et al (2003)'s study. **Enforcing Contract** is the efficiency of the judicial systems in resolving commercial dispute. **Corruption** measures the abuse of power, secret dealings and bribery to societies in each country. In the group of financial distress cost, there are two proxies, which is bankruptcy cost and time to deal with bankruptcy. The **bankruptcy cost** is estimated cost of insolvency proceeding. **Time to deal with bankruptcy** is the estimated duration to resolve the insolvency case. In the group of business environment, three proxies are included. **Starting a business** mainly measures the number of procedures, time and cost for a small and medium-sized liability company to start up and formally operate. The proxy of **human capital** measure total enrolment in tertiary education. **FDI % of GDP** is foreign direct investment net inflows in the economy from foreign investors divided by GDP. In the final group of development of financial sector, the **non-performing Banking loans** measure the value of non-performing

loans divided by the total value of the loan portfolio. The **stability of stock price** is the yearly standard deviation of the return on the national stock market index. The country-specific variables are year-various, all institutional-specific variables are fixed value across years in each country.

With regard to institutional aspects, Hong Kong and Singapore have the most developed financial and legal framework of these six Asian markets according to six institutional characteristics in our sample. In a comparison, Malaysia, Thailand and China follow, Indonesia has a relatively less well-developed framework in both legal and development financial systems in our sample.

Table 7.42 Descriptive Statistics: Four Debt Ratios across Institutional-specific Factors:

Institutional-Specific Factors:				
	TDBV	LTD	STD	TDMV
1) Ease of Access				
Strong	31.6	10.4	13	28.1
Weak	45.8	7.4	20.1	31.3
2) Information Asymmetry:				
Strong	37.4	10.5	11.5	32.6
Weak	43.8	7.5	20.4	29.8
3) Power of Law				
Strong	35.97	9.7	15	28.8
Weak	40.9	7.7	18.2	31.3
4) Financial Distress				
Strong	44.7	8.3	19.1	30.2
Weak	31.1	8.2	14.3	31.2
5) Business Environment				
Strong	34.7	10.8	12	30.1
Weak	44.7	7.3	20.1	30.9
6) Development of Financial Sector				
Strong	36.2	11.6	11.5	30.5
Weak	44.6	7.1	20.7	30.4

Note: In order to access the impacts of these institutional features on capital structure decision, we would separate full sample into two main categories according to their institutional factors. This table has shown the degree of four debt ratios across strong and weak institutional groups. The **TDBV** is total debt in book value, **LTD** is long-term debt ratio, **STD** is short-term debt ratio, **TDMV** is total debt ratio in market value. The classification benchmark between strong and weak group is according to its median values of the full sample Table 7.44 in Appendix. The proxy that is better than median value is classified as strong group; otherwise, it is grouped into weak institutional category.

According to Table 7.42, first, looking into components of total debt ratio, it is worth noticing that there are dramatic gaps between long- and short-term ratios in weak groups in most of the selected institutional variables (i.e. all six groups except category of financial distress cost), while this difference is significantly smaller in a strong institutional group. This finding has implied that long- and short-term debt ratios vary markedly across different institutional features. Second, it is noticeable that the degree of indebtedness is slightly higher in weak group compared to strong institutional group, and short-term finance is a major portion of their external debt finance in these countries with a weaker institutional framework. This

finding is in line with our previous empirical findings in Chapter Five that the degree of indebtedness is higher in China, Indonesia and Thailand. However, they mainly rely upon short-term banking loans compared to those developed market (i.e. Hong Kong and Singapore). It might provide an interpretation that the firms' financing patterns between short-term banking loans and long-term bond could be determined by institutional features. In fact, the studies of Yoshitomi and Shirai (2001) and Shirai (2001) have explained that the banking sector is more likely to be developed compared to bond market and the individuals are more likely to prefer liquid short-term bank deposits rather than long-term debt. More importantly, only few large and reputable firms are sufficiently able to issue bonds when legal and judicial infrastructures are not in place. In addition, a large amount of short-term debts and a few long-term debt issuances in those countries with weak institutional features also could interpret that firms tend to excessively rely on short-term debt to meet long-term financing requirement under a weaker institutional environment.

7.3. Empirical Results: the Impacts of Country-specific Factors on Capital Structure Decision:

With regard to the effects of country-specific factors on capital structure decision, development of stock market and GDP growth are two of the most significant variables in our regression results. The development of the stock market is negatively associated with total debt ratio in book value and long- and short-term debt ratios. This finding is consistent with many existing empirical findings (e.g. Yeh and Chi (2009); Demirguc-Kunt and Maksimovic (1999); and Deesomask et al (2004)) that stock markets at different stages of development have an influence on corporate financing decisions, including long- and short-term finance decisions. The capacity of issuing equity increases with the availability of equity finance, but nevertheless, compared to development of the bond market, has no significant effect on a

firm's capital structure decision, which is not in line with some literature (i.e. Jong *et al.*, 2008). This insignificant correlation between bond market development and capital structure decision shows that Asian firms do not like to take advantage of issuing corporate bonds as one of their financing options regardless of the degree of bond market development. Moreover, compared with the development of the stock market, growth of bond market has been relatively slow in the Asian financial system in recent decades⁴⁴, which means it is not able to change the financial pattern dramatically. In terms of economic growth, the results have shown that GDP growth has a significant association to total debt ratio in book value, whereas inflation does not show any correlation to capital structure decision. Based on the literature, GDP growth is regarded as a signal of growth opportunity, a higher GDP growth is supposed to signify an active economy and a better investment environment. Hence, it is expected to show a positive correlation. In fact, our result is consistent with our prediction that a higher GDP growth encourages firms to issue more debts, which is in line with Frank and Goyal (2009)'s study. In regard to inflation rate, it presents a general level of price over the time. Theoretically, the inflation rate is supposed to affect a firm's financing behaviours in many aspects, such as cost of capital, costs of labour, materials, price of products and real value of tax. In a consequence, the Asian firms with higher inflation fluctuation are expected to issue more debts in a macroeconomic environment, since interest payments to bondholders are deducted from the taxable revenues of the firm. However, in our results, the inflation factor does not affect corporate finance decision in our selected Asian firms. This result could be explained by irrelevance of tax effect on capital structure in the thesis. As Chapter Five

⁴⁴ Shim, L (2012). Development of Asia-Pacific Corporate Bond and Securitisation Markets. A chapter in weathering financial crisis: bond markets in Asia and the Pacific 63, pp5-14. In this chapter, it is mentioned that the development of bond has a steady growth, but since then they have been slow to develop due to sharp capital outflows from their domestic bond markets during the period from 2007 to 2009.

has shown, the tax effect in our select countries has no significant bearing on corporate finance decision, which might indicate that tax benefit on a higher inflation is not able to change capital structure decision in our study.

7.4. The Empirical Result Analysis: the Determinants of Capital Structure from Perspective of Institutional Aspect:

Different institutional features across countries do matter to a firm's capital structure decision. Firms from a country with stronger creditor rights, enforcing contract, well-educated human capital and a more developed banking sector tend to have a higher debt ratio in Asia. In a contrast, firms from countries with stronger legal rights and a more volatile stock market tend to avoid issuing more debts. In terms of long- and short-term debt, the finding shows that firms with more transparent information, lower costs of bankruptcy and a more efficient banking sector are inclined to issue more long-term debts. The firms under a more friendly business environment, better enforcing contract and stronger credit rights are more likely to avoid issuing short-term banking loans. In regard to market value of total debt ratio, firms in a friendlier business and investment environment are more inclined to issue equity. In a contrast, the Asian firms under a stronger enforcing contract and a more developed banking sector are likely to avoid equity issuance. On the whole, the six institutional groups (except information asymmetry and financial distress cost) present a significant association with total debt in book and market values, and at least one of the variables in each category is correlated with the long-term debt ratio.

a) Ease of Access:

In the group of ease of access, our results have shown that firms prefer to issue more debts with a stronger creditor right, which is consistent with Levine (1999) and Fabbri (2001)'s finding that a stronger credit right reduces the cost of external financing and contributes to access to external financing. This finding has revealed that a firms' access to the credit market expands substantially when the legal rights of creditors are well protected. Moreover, a strict protection for creditors helps to reduce the cost of debt. Second, the finding also shows that these Asian firms tend to avoid issuing long-term debt when protection for investor is strong in terms of transparency, shareholder right and self-dealing capacity. Last, the firms with stronger legal rights in terms of a stronger collateral and bankruptcy law protection tend to issue more short-term debts. Overall, our results imply that firms are likely to issue more debts (especially short-term banking loans) when investors are more likely to receive their promised cash flow.

b) Disclosure Requirement:

In the result, it can be seen that information asymmetry is only significantly positively correlated to long- and short-term debts. This finding is in line with some existing empirical results (i.e. Lombardo and Pagano, (2002); and Lambert and Verrecchia (2007)) that a more transparent and complete information environment encourages firms to issue more long- and short-term debt ratios, which implies that shared information helps to reduce the wedge between internal and external financing costs (see Myers, (1984); Myers and Majluf, (1984)). Moreover, this result has shown that a higher quality of available information also is able to facilitate lending and reduce default rate. As the pecking order theory (POT) suggests, external finance is more costly and risky due to the problem of imbalanced information.

Hence, enhancing and promoting information transparency and information quality in lending relationships does help to reduce the cost of capital, adverse selection and the moral hazard of credit market decisions. This finding sheds light on the importance and usefulness of information transparency and sharing in the credit market, since the implementation and deepening of the credit information system helps towards a more stable financial system.

c) Power of Law:

Only the variable of contract is able to represent all debt ratios. More specifically, it presents positive correlations with total debt in both book and market values. This finding is in line with Fan *et al.* (2012)'s study that firms from a country with better protection and an guarantee to rectify conflict between shareholders and creditors tend to expand their credit finance substantially. Moreover, a high degree of enforcement capability could help to reduce financial intermediation costs (Moe, 2012).

However, the proxies for corruption and formalization do not show any correlations with capital structure decision in our study. According to existing literature, a poor legal framework to with stem serious corruption, a weak enforcement capacity, and closer ties with government officials makes it more likely that cost of debt and equity will increase. Hence, politically connected firms in countries with serious corruption and weak laws and regulations are supposed to benefit more even if their performance is worse than other non-connected firms (Dinc, (2005); and Siegel (2005)). However, the effect of corruption and legal power is probably only relevant to debt ratio in the private sector rather than state sector.

d) Financial Distress Cost:

As Table 7.43 shows, in the group of financial distress costs, only the proxy for the cost of bankruptcy is correlated with a firm's capital structure decision and the sign is only positively correlated with long-term debt ratio in Asia. This result is in contrast to our prediction that firms from a country with lower financial distress cost would issue more debts. This result might provide some explanation from the Asian- insolvency system in their financial markets. For instance, in China, the state-owned firms could generally have a much lower cost of bankruptcy than those private firms under the protection of the government and with close ties with state-owned banks. More importantly, the bankruptcy law for Chinese listed firms was implemented in June 2007⁴⁵, which means that the effect of a distress situation is still likely to be insignificant when dealing legally with firm bankruptcy. A contrasting result in this thesis also sheds light on the fact that firm's financing behaviour for these Asian listed firms is still different from those firms from a developed economy in terms of ownership, maturity of investors and efficiency of bankruptcy law on firm's financing decision. As an OECD report⁴⁶ has suggested, a series of reform processes in insolvency law, the introduction of new procedures and the strengthening of the institution in recent decades implemented to improve in Asian Jurisdictions, but nevertheless, the role of a more effective insolvency system within the greater financial system is still much less in the Asian region. On the whole, since the implementation of western-style insolvency laws in the late 1990s, the effectiveness and efficiency of insolvency law could still cause many challenges for Asian countries, especially for those developing and emerging Asian countries (i.e. China and

⁴⁵ Altman, E, Heine (2007). Corporate Financial Distress Diagnosis in China. New York University Workpaper. <http://people.stern.nyu.edu/ealtman/WP-China.pdf>.

⁴⁶ Asian Insolvency Systems: Closing the Implementation Gap (2007). The Organization of Economic Cooperation and Development research Paper.

Indonesia) though a significant reform of insolvency law and rescue mechanisms has succeeded to some degree in Asia in recent years.

e) Business Environment:

It is interesting to note that the three proxies in the business environment group are negatively related to total debt ratio in market value. This suggests that firms from a

Table 7.43: Empirical Results: the Effect of Macroeconomic and Institutional on Capital Structure Decision:

	GMM (TDBV)	Std Error	GMM (LTD)	Std Error	GMM (STD)	Std Error	GMM (TDMV)	Std Error
A) Country-Specific Factors								
Macroeconomic Condition:								
Development of Stock Market	-0.0156***	0.00508	-0.00289**	-0.00114	-0.00492***	-0.002	-0.00153	-0.006
Inflation Rate	0.0289	-0.111	-0.0947	-0.0611	-0.0326	-0.078	-0.025	-0.693
Development of Bond Market	-0.0348	-0.0257	-0.00292	-0.00814	-0.0183	-0.012	0.0176	-0.074
GDP Growth	0.364***	0.0810	-0.0531	0.0393	0.0813	0.0573	-0.211	0.167
B) Institutional-Specific Factors								
1) Ease of Access								
Creditor Right	1.535**	0.976	-0.151	0.729	-0.89*	0.554	-0.475*	0.76
Strength of Legal Right	-0.420**	1.043	0.813	0.598	1.067**	1.548	0.646	0.361
Investor Protection	0.012	0.0676	-0.101**	0.0401	-0.0932	0.0697	-0.0394	0.081
2) Information Asymmetry								
Disclosure Requirement	0.741	0.810	0.396**	1.547	-0.157	0.555	-0.351	0.574
Credit Information	1.016	1.079	0.368*	0.702	0.626**	0.232	0.964	0.976
3) Power of Law								
Formalism	0.415	2.387	-0.885	0.813	0.25	0.312	-0.277	0.511
Enforcing Contract	0.0734*	0.0407	-0.0262	0.0139	-1.41	0.0691	0.618**	0.283
Corruption	0.0312	0.0721	-0.0475	0.0364	0.209	0.389	0.664	1.074
4) Financial Distress Cost								
Cost of bankruptcy	-0.32	0.87	0.695*	0.784	0.661	1.524	-0.795	0.96
Time to deal with bankruptcy	0.57	0.98	0.024	0.571	-1.336	1.461	0.072	0.661
5) Business Environment								
Starting a Business	0.00361	0.0154	-0.205**	0.0944	-0.0850***	0.0317	-0.453**	0.211
Human Capital (Enrollment in Tertiary Sector)	0.262***	0.0477	-0.431	0.407	-0.231	0.157	-1.528**	0.749
FDI % of GDP	0.073	0.0919	-0.461	0.456	-0.264	0.28	-2.793**	1.418
6) Financial Sector								
Non-performing loans % gross loans	0.715**	1.261	0.904*	1.565	0.577	1.091	1.084**	1.552
Stability of Stock Price	-0.245**	0.118	-0.271**	0.124	0.0323	0.0721	-0.067	0.115

Note: this table reports our empirical results from both macroeconomic and institutional effect on capital structure decision in four debt estimations by applying GMM specification. The GMM specification is followed the procedure by Arellano and Bond (1991), which carried out by the xtabond2 command in STATA. The definition of both macroeconomic and institutional independent variables has been shown in the note of Table 7.56(1) and Table 7.57(2).

financial market where there is a friendly business environment are more inclined to rely on equity issuance, rather than issuing debt. Only the proxy for human capital is positively associated with total debt in book value. Moreover, a country with more intensive foreign investment contributes to it issuing more equity. As Brander and Lewis (1986)'s finding has suggested, firm's capital structure decisions are interconnected with their output, and firm output also is affected by presence of foreign firms and total amount of FDIs. Lastly, the effect of tertiary education on capital structure decision is relatively complex from an indirect perspective. A human resource and education background is positively related to economic development and the modernization of society. Under this circumstance, a country with a higher quality of human resource is more likely to create more active and friendly business activities and have a more knowledgeable and skilful workforce. It can also further stimulate an individual firm's output, profitability and external finance.

f) Development of Financial system:

With regard to development of financial systems, it can be seen that both proxies in this group present significant relationship to a firm's capital structure decision. Interestingly, the non-performing loans (NPLs) present a positive correlation to total debt in both book and market values. The volatility of stock price shows an inverse association with total debt ratio in book value and long-term debt ratio. In other words, the total debt ratio should decrease in a more developed and efficient banking system and firms from a country with more volatile stock markets should tend to avoid issuing debts, especially long-term debt. On the one hand, this result could explain why the banking sector plays a more dominant role in the financial system, since banking loans are able to provide a higher degree of monitoring ability and

enforcement than open-ended equity with lesser protection, especially in a country with a weak financial system. On the other hand, the movement of stock price reflects substantial uncertainty in terms of the cost of raising public capital, demand and the expectations of investors. Hence, a more volatile market is likely to suffer high information asymmetry, resulting in problems with their future growth. The firms would avoid more external finance, especially long-term bond finance.

7.5 Conclusion:

The empirical finding suggests that a country's macroeconomic environment and institutional features help to improve the understanding of a firm's capital structure decision in Asian countries. It demonstrates that international differences in both economic development and institutional characteristics affect the cost of external capital, which further leads to a preference for a particular financing decision. Our results suggest that there is no significant difference in overall indebtedness between stronger and weaker institutional environments. However, long- and short-term debt ratios show a dramatic gap. This result might provide an insight that the short- and long-term debt ratios are heavily determined by institutional features in a heavily bank-dominated financial system, such as is the case in Asian countries. In terms of macroeconomic development, both the development of the stock market and GDP growth have shown significant relationships to a firm's capital structure decision. The implication of these results has two dimensions. First, it shows that the stock markets at different stages of development, are capable changing a firm's financing decision. Second, it indicates that firms in an active economic and investment environment are encouraged to

issue more external debts. There is no evidence that the development of the bond market has an impact on firm's debt ratios in Asia. This might due to the domination of government bonds in the bond market compared to very low representation from the corporates.

The institutional effect on capital structure decision shows that the creditor right is positively related to external capital, which indicates that a strict protection for creditors reduces the cost of debt. Second, a more transparent and complete information environment encourages firms to issue more debts. This confirms that a higher quality of information will facilitate lending and reduce default rate. Firms from financial markets where there is a more friendly business environment are more inclined to rely on equity issuance than issuing debt.

The cost of financial distress shows a positive relationship with firm's capital structure, which is in contrast with trade-off theory that suggests that firms would avoid external capital when distress cost is high. This implies that the implementation of bankruptcy law in Asia is generally less active, and that financially distressed firms are still able to survive to some degree due to the support of central or local governments. The development of financial system features are significantly related to a firm's capital structure decision. This suggests that firms tend to excessively rely on short-term banking loans under an inefficient and less developed banking sector. This means that, in Asia, firms tend to take excessive advantage of short-term banking loans to meet their long-term finance requirements because of the relatively poor institutional environment. The collateral effect (i.e. creditor right, disclosure requirement and credit information) has a positive and significant impact on capital structure, which implies that the creditors are reluctant to lend if they are not legally well-protected.

Appendix-5:

Table 7.44: Country- and Institutional-specific Characteristics:

Country- and Institutional-specific Factors in the Full Sample:					
	Obs	Mean	Std Deviation	Min	Max
A) Country-Specific Factors:					
Development of Stock Market	4884	123.7243	127.7642	19.35554	606.001
Inflation Rate	4884	2.792535	2.283633	-3.05585	13.10942
Development of Bond Market	4884	50.62388	16.97064	13.39	94.73
GDP Growth Rate	4884	8.340621	3.639991	-2.5	14.8
B) Institutional-Specific Factors:					
1) Ease of Access					
Creditor Right	4884	2.401266	0.6946449	2	4
Strength of Legal Right	4884	6.973486	1.961052	3	10
Investor Protection	4884	64.55164	44.03978	2	98
2) Information Asymmetry					
Disclosure Requirement	4884	0.214088	0.4102286	0	1
Credit Information	4884	4.427582	0.6967447	4	6
3) Power of Law					
Formalism	4884	2.919872	0.9002122	0.730263	3.901316
Enforcing Contract	4884	22.50831	21.47247	9	147
Corruption	4884	46.67887	14.18603	32	86
4) Financial Distress Cost					
Cost of bankruptcy	4884	0.117234	0.0681899	0.09	0.36
Time to deal with bankruptcy	4884	429.6932	216.0361	80	591.429
5) Business Environment					
Starting a Business	4884	112.4254	66.47967	3	175
Human Capital (Enrolment in Tertiary Sector)	4884	25.65245	10.09715	19.1819	45.8241
FDI % of GDP	4884	6.80465	8.665526	2.2	28.3
6) Financial Sector					
Non-performing loans % of gross loans	4884	7.544517	2.369501	1.88	8.76
Stability of Stock Price	4884	71.21048	30.14014	28.719	94.4049

Note: The definition of both macroeconomic and institutional independent variables has been shown in the note of Table 7.56(1) and Table 7.57(2). The country-specific variables are year-various, all institutional-specific variables are fixed value across years in each country.

Table 7.45 Country- and Institutional-specific Characteristics between Strong and Weak institutions:

Institutional Features	Group	Total Debt in BV	Long-term Debt	Short-term Debt	Total Debt in MV
1) Ease of Access					
Creditor Right	Strong	31.6	10.4	13.0	28.1
	Weak	45.8	7.4	20.1	31.3
Strength of Legal Right	Strong	31.6	10.4	13.0	28.1
	Weak	45.8	7.4	20.1	31.3
Investor Protection ranking	Strong	31.6	10.4	13.0	28.1
	Weak	45.8	7.4	20.1	31.3
2) Information Asymmetry					
Disclosure Requirement	Strong	40.8	11.3	10.2	34.2
	Weak	42.1	7.4	20.2	29.4
Credit Information	Strong	33.9	9.6	12.7	30.9
	Weak	45.4	7.6	20.5	30.2
3) Power of Law					
Formalism	Strong	31.6	10.4	13.0	28.1
	Weak	45.8	7.4	20.1	31.3
Enforcing Contract	Strong	44.7	8.3	19.1	30.2
	Weak	31.1	8.2	14.3	31.2
Corruption	Strong	31.6	10.4	13.0	28.1
	Weak	45.8	7.4	20.1	31.3
4) Financial Distress Cost					
Cost of bankruptcy	Strong	44.7	8.3	19.1	30.2
	Weak	31.1	8.2	14.3	31.2
Time to deal with bankruptcy	Strong	44.7	8.3	19.1	30.2
	Weak	31.1	8.2	14.3	31.2
5) Business Environment					
Starting a Business	Strong	31.6	10.4	13.0	28.1
	Weak	45.8	7.4	20.1	31.3
Human Capital (Enrollment in Tertiary)	NA	30.7	17.4	13.3	23.5
	Strong	40.8	11.6	10.2	34.0
	Weak	42.6	7.0	20.2	29.9
FDI % of GDP	Strong	31.6	10.4	13.0	28.1
	Weak	45.8	7.4	20.1	31.3
6) Financial Sector					
Non-performing loans % gross loans	Strong	38.4	12.7	10.3	30.5
	Weak	42.6	7.2	19.9	30.4
Stability of Stock Price	Strong	34.0	10.4	12.6	30.5
	Weak	46.5	7.0	21.4	30.4

Note: The definition of each variable is as following: This table provides the mean, standard deviation, minimum and maximum values of each variable in the sample. Four Dependent Variables: total debt in book value (%) (**TDBV**) is total debt divided by total debt and total shareholder equity in percentage; long-term debt (%) (**LTD**) is long-term debt divided by total debt and total shareholder equity in percentage; total short-term debt (%) (**STD**) is short-term debt divided by total debt and shareholder equity in percentage; total liability in market value (%) (**TDMV**) is total debt divided by total debt and market capitalization in percentage. The definition of both macroeconomic and institutional independent variables has been shown in the note of Table 7.56(1) and Table 7.57(2). The groups of strong and weak institutional settings are based on the medium value of full sample in each category. More specifically, the proxy that is better than median value is classified as strong group. Otherwise, it is grouped into weak institutional category.

Table 7.46(1): Empirical Regression Results from Country-Specific Factors in Four Debt Ratios:

Explanatory Variables	Total Debt in BV			Long-term Debt			Short-term Debt			Total Debt in MV		
	OLS	FE	GMM	OLS	FE	GMM	OLS	FE	GMM	OLS	FE	GMM
PROF	-0.198*** (0.0243)	-0.400*** (0.0424)	-0.180*** (0.0436)	-0.0700*** (0.0192)	-0.194*** (0.0353)	-0.0713*** (0.0181)	-0.116*** (0.0236)	-0.248*** (0.0421)	-0.176*** (0.0368)	-0.121*** (0.0245)	-0.415*** (0.0450)	-0.628 (0.663)
TANG	-1.741** (0.698)	-9.878*** (1.823)	-2.506** (1.178)	-2.115*** (0.567)	-2.384 (1.500)	-3.135*** (0.855)	-2.405*** (0.685)	-7.631*** (1.803)	-3.622*** (1.181)	-1.178* (0.696)	-8.409*** (1.917)	-9.386 (7.281)
SIZE	0.724*** (0.139)	5.406*** (0.549)	1.899*** (0.357)	0.921*** (0.111)	3.306*** (0.456)	1.025*** (0.181)	-0.0349 (0.130)	1.423*** (0.535)	-0.0778 (0.163)	1.039*** (0.136)	3.263*** (0.573)	1.372 (1.153)
ADMIN	-0.374* (0.209)	0.204 (0.633)	-0.177 (0.291)	-0.799*** (0.168)	-0.396 (0.526)	-0.792*** (0.192)	-0.244 (0.204)	-0.830 (0.628)	-0.162 (0.288)	-0.424** (0.208)	-1.580** (0.669)	22.02 (18.33)
LIQUIDITY	-2.199*** (0.235)	-4.043*** (0.391)	-2.709*** (0.515)	0.430** (0.180)	1.884*** (0.324)	0.187 (0.233)	-1.625*** (0.221)	-4.251*** (0.387)	-2.234*** (0.380)	-1.684*** (0.230)	-2.821*** (0.414)	5.572 (9.598)
TAX	0.00499 (0.0118)	-0.0183 (0.0173)	-0.00914 (0.0151)	0.00317 (0.00944)	0.000547 (0.0144)	-0.000527 (0.0101)	-0.00763 (0.0115)	-0.0138 (0.0172)	-0.0118 (0.0142)	-0.000839 (0.0118)	-0.0166 (0.0183)	0.0703 (0.0612)
DIV	0.00103 (0.00570)	-0.0119 (0.00786)	0.000973 (0.00671)	-0.00973** (0.00454)	-0.0160** (0.00653)	-0.00455 (0.00456)	0.0102* (0.00555)	0.00423 (0.00779)	0.00810 (0.00704)	-0.00148 (0.00567)	0.00404 (0.00831)	0.0425 (0.142)
MTB	0.397*** (0.0829)	0.778*** (0.151)	0.376*** (0.111)	0.0494 (0.0659)	0.236* (0.125)	0.0329 (0.0669)	0.227*** (0.0805)	0.126 (0.150)	0.225** (0.108)	-0.229** (0.0903)	-0.989*** (0.171)	-2.163* (1.309)
GRWOTH	0.00260 (0.00201)	0.00448** (0.00220)	-0.000424 (0.00237)	-0.00265* (0.00160)	-7.14e-05 (0.00183)	-0.00253 (0.00164)	0.00233 (0.00196)	0.00400* (0.00218)	0.00296 (0.00228)	0.00340* (0.00200)	0.00272 (0.00232)	0.00213 (0.0115)

Note: The total debt in book value (%) (**TDBV**) is total debt divided by total debt and total shareholder equity in percentage of firm i in year t . The lagged debt ratio in book value (%) is total debt divided by total debt and total shareholder equity in percentage of firm i in year $t-1$. (**LTD**) is long-term debt divided by total debt and total shareholder equity in percentage; total short-term debt (%) (**STD**) is short-term debt divided by total debt and shareholder equity in percentage; total liability in market value (%) (**TDMV**) is total debt divided by total debt and market capitalization in percentage. $X_{i,t}$ is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (**PROF**) is EBIT divided by total asset; tangibility in % (**TANG**) is tangible asset divided by total asset; Effective Tax rate in % (**TAX**) is income tax expenses divided by pretax income; Dividend Payout Ratio (**DIV**) is dividend per share divided by earning per share; Market-to-Book (**MTB**) is market value per share divided by book value per share; liquidity in % (**LIQUIDITY**) is current asset divided by current liability; Administration Cost in % (**ADMIN**) is the percentage of total administration expenses to total asset; Growth opportunity in % (**GROWTH**) is the change of total revenue in percentage; Stock Performance(**RETURN**) in % is the change of stock price in percentage. This table reports our empirical results from macroeconomic effect on capital structure decision in four debt estimations by applying GMM specification. The definition of both macroeconomic and institutional independent variables has been shown in the note of Table 7.56(1) and Table 7.57(2).

The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 7.47(2): Empirical Regression Results from Country-Specific Factors in Four Debt Ratios:

Explanatory Variables	Total Debt in BV			Long-term Debt			Short-term Debt			Total Debt in MV		
	OLS	FE	GMM	OLS	FE	GMM	OLS	FE	GMM	OLS	FE	GMM
RETURN	-0.00379	-0.00557	-0.00449	0.00128	0.00121	0.00157	-0.0131***	-0.0029	-0.0135***	-0.114***	-0.0836***	-0.0629*
	-0.00282	-0.00348	-0.00392	-0.00225	-0.00289	-0.00211	-0.00275	-0.00347	-0.00291	-0.00302	-0.00407	-0.0362
Development of Stock Market	-0.00345***	-0.0118***	-0.0156***	-0.00296***	-0.00466*	-0.00289**	-0.0017	-0.00885***	-0.00492***	-0.0012	-0.00654*	-0.00153
Inflation	-0.00126	-0.00318	-0.00508	-0.000997	-0.00264	-0.00114	-0.00123	-0.00315	-0.00159	-0.00125	-0.00336	-0.00552
	0.0848	-0.275***	0.0289	-0.164***	-0.289***	-0.0947	0.03	-0.0306	-0.0326	0.553***	0.108	-0.025
	-0.075	-0.0909	-0.111	-0.0598	-0.0756	-0.0611	-0.0732	-0.09	-0.0777	-0.0747	-0.0976	-0.693
Development of Bond Market	-0.0629***	-0.158***	-0.0348	0.00122	-0.103***	-0.00292	-0.0147	-0.104***	-0.0183	-0.0655***	-0.120***	0.0176
GDP Growth	-0.0117	-0.0269	-0.0257	-0.00916	-0.0224	-0.00814	-0.0112	-0.0266	-0.0115	-0.0115	-0.0284	-0.0742
	-0.143***	0.160***	0.364***	-0.0398	0.0883*	-0.0531	-0.0277	0.0314	0.0813	-0.191***	-0.131**	-0.211
	-0.0471	-0.0594	-0.081	-0.0377	-0.0494	-0.0393	-0.0463	-0.0588	-0.0573	-0.047	-0.0628	-0.167
Lagged Debt in BV	0.848***	0.362***	0.729***									
	-0.00941	-0.0203	-0.0494									
Lagged Long-term Debt				0.775***	0.311***	0.696***						
Lagged Short-term Debt				-0.0118	-0.0227	-0.0515						
Lagged Debt in MV							0.834***	0.315***	0.618***			
							-0.0107	-0.0226	-0.0683			
										0.870***	0.504***	0.620*
										-0.00987	-0.0201	-0.343
Constant	7.295***	5.870**	2.196	-4.661***	-9.231***	-4.836***	4.259***	9.624***	8.851***	5.713***	6.537**	117.8
	-1.31	-2.836	-2.603	-1.019	-2.367	-0.994	-1.263	-2.823	-2.021	-1.303	-3.01	-79.35
Observations	2,703	2,703	2,703	2,703	2,703	2,703	2,703	2,703	2,703	2,703	2,703	2,703
AR1			0.000*			0.000*			0.000*			0.088*
AR2			0.331			0.769			0.281			0.335
Sargen Test			0.391			0.704			0.617			0.78
No. of instruments			46			43			59			24
R-squared	0.848	0.369		0.71	0.2		0.75	0.234		0.853	0.595	
Number of id		1,034	1,034		1,034	1,034		1,034	1,034		1,034	1,034

Note: The total debt in book value (%) (**TDBV**) is total debt divided by total debt and total shareholder equity in percentage of firm i in year t . The lagged debt ratio in book value (%) is total debt divided by total debt and total shareholder equity in percentage of firm i in year $t-1$. (**LTD**) is long-term debt divided by total debt and total shareholder equity in percentage; total short-term debt (%) (**STD**) is short-term debt divided by total debt and shareholder equity in percentage; total liability in market value (%) (**TDMV**) is total debt divided by total debt and market capitalization in percentage. X_{it} is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. This table reports our empirical results from macroeconomic effect on capital structure decision in four debt estimations by applying GMM specification. The GMM specification is followed the procedure by Arellano and Bond (1991), which carried out by the `xtabond2` command in STATA. The advantages of GMM specification is to robust to serial correlation and heteroskedasticity problem. The definition of both macroeconomic and institutional independent variables has been shown in the note of Table 7.56(1) and Table 7.57(2).

The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. The data are drawn from the datastream and Bloomberg databases. In the GMM estimation (Arellano-Bond test), the Year dummy variables refers to if the year dummy is included in the estimate (1), AR1 and AR2 are first and second-order autocorrelation in the first-differenced residuals. Sargan-test is a test for the null of valid instruments and is asymptotically distributed as χ^2 under the null. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Table 7.48(1): Empirical Regression Results in Total Debt in Book value: Impacts of Country and Institutional Factors:

Total Debt in BV Explanatory Variables	(1) Access	(2) Information Asymmetry	(3) Power of Law	(4) Financial Distress	(5) Business Environment	(6) Development of Financial Sector
Firm-specific Factors:						
Lagged TDBV	0.770*** (0.0576)	0.775*** (0.0589)	0.834*** (0.0614)	0.585*** (0.167)	0.778*** (0.0547)	0.722*** (0.0711)
PROF	-0.235*** (0.0530)	-0.266*** (0.0439)	-0.234*** (0.0418)	-0.449** (0.207)	-0.216*** (0.0418)	-0.288*** (0.0899)
TANG	-5.208 (3.256)	-3.628** (1.608)	2.532 (3.647)	-14.73 (9.723)	-3.581** (1.694)	-3.447 (2.415)
SIZE	0.984*** (0.342)	1.158** (0.571)	1.024*** (0.327)	7.278** (3.438)	1.196*** (0.288)	4.109*** (1.308)
ADMIN	0.122 (0.385)	-0.147 (0.292)	-0.727* (0.391)	1.293 (1.545)	0.0275 (0.268)	-0.265 (0.465)
LIQUIDITY	-2.563*** (0.527)	-2.682*** (0.529)	-2.638*** (0.532)	-3.228** (1.454)	-2.524*** (0.481)	-2.885*** (0.736)
TAX	-0.00167 (0.0132)	0.00397 (0.0139)	0.00234 (0.0128)	-0.112 (0.0809)	0.0106 (0.0127)	-0.0255 (0.0229)
PAYOUT	0.00257 (0.00844)	-0.00295 (0.00772)	0.000915 (0.00629)	-0.0128 (0.0171)	-0.00515 (0.00624)	-0.0199** (0.0101)
MTB	0.352 (0.284)	0.560*** (0.182)	0.680*** (0.198)	1.546** (0.658)	0.512*** (0.113)	1.167*** (0.365)
GROWTH	0.00221 (0.00237)	0.00295 (0.00236)	0.00352 (0.00239)	0.00473 (0.00515)	0.00239 (0.00218)	0.00240 (0.00281)
RETURN	-0.00370 (0.00449)	-0.00313 (0.00495)	-0.0189* (0.0106)	-0.0304** (0.0141)	-0.00497 (0.00398)	-0.00885 (0.00653)
Country-specific Factors:						
Development of Stock Market	-0.0182** (0.00748)	-0.0117 (0.0135)	-0.00264 (0.0184)	-0.00829 (0.0148)	-0.0166** (0.00646)	-0.0113 (0.0141)
Inflation Rate	-0.00155 (0.113)	0.199 (0.294)	-0.327 (0.412)	-0.825* (0.492)	-0.0147 (0.115)	0.0528 (0.292)
Development of Bond Market	-0.0250 (0.0563)	-0.0870*** (0.0203)	0.0894 (0.0970)	-0.197 (0.168)	-0.0741** (0.0312)	-0.249*** (0.0849)
GDP Growth	0.400*** (0.0885)	0.119 (0.139)	0.149 (0.172)	0.137 (0.351)	0.425*** (0.0897)	-0.157 (0.275)

Note: The GMM specification also has shown by following the procedure outlined by Arellano and Bond (1991), which carried out by the xtabond command in STATA. The GMM estimation is robust to serial correlation and heteroskedasticity problems. The total debt in book value (%) (**TDBV**) is total debt divided by total debt and total shareholder equity in percentage of firm i in year t . The lagged debt ratio in book value (%) is total debt divided by total debt and total shareholder equity in percentage of firm i in year $t-1$. $X_{i,t}$ is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (**PROF**) is EBIT divided by total asset; tangibility in % (**TANG**) is tangible asset divided by total asset; Effective Tax rate in % (**TAX**) is income tax expenses divided by pretax income; Dividend Payout Ratio (**DIV**) is dividend per share divided by earning per share; Market-to-Book (**MTB**) is market value per share divided by book value per share; liquidity in % (**LIQUIDITY**) is current asset divided by current liability; Administration Cost in % (**ADMIN**) is the percentage of total administration expenses to total asset; Growth opportunity in % (**GROWTH**) is the change of total revenue in percentage; Stock Performance(**RETURN**) in % is the change of stock price in percentage. The definition of both macroeconomic and institutional independent variables has been shown in the note of Table 7.56(1) and Table 7.57(2). The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 7.49(2): Empirical Regression Results in Total Debt in Book value: Impacts of Country and Institutional Factors:

Total Debt in BV	-1	-2	-3	-4	-5	-6
Explanatory Variables	Access	Information Asymmetry	Power of Law	Financial Distress	Business Environment	Development of Financial Sector
Institutional-specific Factors:						
Credit Rights	1.535** -0.976					
Strength of Legal Rights	-0.420** -1.043					
Investor Protection	0.012 -0.0676					
Disclosure Requirement		0.741 -0.81				
Credit Information		1.016 -1.079				
Formalism			0.415 -2.387			
Enforcing Contract			0.0734* -0.0407			
Corruption			0.0312 -0.0721			
Cost of Bankruptcy				-0.32 -0.87		
Bankruptcy time				0.57 -0.98		
Starting Business					0.00361 -0.0154	
Human Capital					0.262*** -0.0477	
FDI of GDP (%)					0.073 -0.0919	
Non-performing Loans						0.715** -1.261
Volatility of price						-0.245** -0.118
Constant	0.0739 -8.887	2.912 -6.789	-8.047 -13.22	-38.56 -26.05	-1.454 -3.487	-5.82 -11.3
Observations	2,703	2,703	2,703	2,703	2,584	2,703
Number of id	1,034	1,034	1,034	1,034	1,002	1,034
No. of Instruments	30	33	24	22	31	25
AR1	0	0	0	0.001	0	0
AR2	0.338	0.339	0.268	0.771	0.589	0.241
Sargan Test	0.457	0.59	0.843	0.401	0.569	0.317
Hansen Test	0.376	0.669	0.806	0.466	0.48	0.333

Note: The total debt in book value (%) (**TDBV**) is total debt divided by total debt and total shareholder equity in percentage of firm i in year t . The lagged debt ratio in book value (%) is total debt divided by total debt and total shareholder equity in percentage of firm i in year $t-1$. $X_{i,t}$ is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. This table reports our empirical results from the impact of institutional settings on capital structure decision in four debt estimations by applying GMM specification. The definition of both macroeconomic and institutional independent variables has been shown in the note of Table 7.56(1) and Table 7.57(2). The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. The data are drawn from the datastream and Bloomberg databases. In the GMM estimation (Arellano-Bond test), the Year dummy variables refers to if the year dummy is included in the estimate (1). AR1 and AR2 are first and second-order autocorrelation in the first-differenced residuals. Sargan-test is a test for the null of valid instruments and is asymptotically distributed as χ^2 under the null. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 7.50(1): Empirical Regression Results in Long-term Debt Ratio: Impacts of Country and Institutional Factors:

Long-term Debt Explanatory Variables	(1) Access	(2) Information Asymmetry	(3) Power of Law	(4) Financial Distress	(5) Business Environment	(6) Development of Financial Sector
Firm-specific Factors:						
Lagged LTD	0.692*** (0.100)	0.605*** (0.146)	0.679*** (0.0512)	0.682*** (0.0550)	0.605*** (0.0696)	0.610*** (0.0708)
PROF	-0.164*** (0.0399)	-0.204*** (0.0526)	-0.0758*** (0.0195)	-0.0941*** (0.0232)	-0.171*** (0.0574)	-0.126*** (0.0444)
TANG	-2.728 (2.177)	-4.503*** (1.596)	-6.237*** (1.858)	-3.762*** (0.918)	9.434 (7.626)	-3.578** (1.582)
SIZE	2.282*** (0.486)	1.862*** (0.488)	1.103*** (0.182)	1.037*** (0.225)	2.478** (1.261)	3.988*** (1.408)
ADMIN	-1.552*** (0.466)	-0.976** (0.443)	-0.706** (0.301)	-0.924*** (0.255)	-2.089*** (0.675)	-1.034*** (0.373)
LIQUIDITY	-0.357 (0.361)	-0.240 (0.356)	0.448* (0.251)	0.196 (0.208)	-0.133 (0.336)	0.388 (0.326)
TAX	-0.00322 (0.0135)	0.00465 (0.0155)	0.00604 (0.0103)	0.00786 (0.0105)	-0.00300 (0.0203)	-0.0240 (0.0177)
PAYOUT	-0.0122** (0.00602)	-0.0128** (0.00609)	-0.00786* (0.00462)	-0.00988** (0.00448)	-0.0115 (0.00812)	-0.0288** (0.0113)
MTB	0.341** (0.168)	0.295* (0.152)	-0.0537 (0.0857)	0.0980 (0.0748)	0.612*** (0.211)	0.818** (0.374)
GROWTH	0.000302 (0.00188)	0.00142 (0.00213)	-0.00276* (0.00160)	-0.00203 (0.00159)	-0.00361 (0.00292)	-0.00195 (0.00195)
RETURN	-0.000372 (0.00345)	5.07e-06 (0.00311)	0.00734* (0.00380)	0.000472 (0.00284)	0.0109* (0.00590)	-0.00961 (0.00656)
Country-specific Factors:						
Development of Stock Market	-0.0105* (0.00544)	-0.00976* (0.00505)	-0.00472 (0.00288)	4.76e-05 (0.00318)	-0.0242*** (0.00880)	-0.0153* (0.00840)
Inflation Rate	-0.151* (0.0889)	-0.201** (0.0920)	-0.0661 (0.0770)	-0.164** (0.0781)	-0.0343 (0.163)	-0.646*** (0.237)
Development of Bond Market	-0.0844** (0.0353)	-0.0845** (0.0355)	-0.0838* (0.0472)	-0.0176 (0.0124)	-0.214*** (0.0706)	-0.167** (0.0807)
GDP Growth	0.00977 (0.0732)	0.0317 (0.0763)	-0.181*** (0.0676)	-0.0746 (0.0677)	0.0436 (0.126)	0.0913 (0.110)

Note: (LTD) is long-term debt divided by total debt and total shareholder equity in percentage. The lagged debt ratio in book value (%) is long-term debt divided by total debt and total shareholder equity in percentage of firm i in year $t-1$. total short-term debt (%). $X_{i,t}$ is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (PROF) is EBIT divided by total asset; tangibility in % (TANG) is tangible asset divided by total asset; Effective Tax rate in % (TAX) is income tax expenses divided by pretax income; Dividend Payout Ratio (DIV) is dividend per share divided by earning per share; Market-to-Book (MTB) is market value per share divided by book value per share; liquidity in % (LIQUIDITY) is current asset divided by current liability; Administration Cost in % (ADMIN) is the percentage of total administration expenses to total asset; Growth opportunity in % (GROWTH) is the change of total revenue in percentage; Stock Performance(RETURN) in % is the change of stock price in percentage. This table reports our empirical results from institutional effect on capital structure decision in four debt estimations by applying GMM specification. The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. All t-values are reported in the parentheses: standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 7.51(2): Empirical Regression Results in Long-term Debt Ratio: Impacts of Country and Institutional Factors:

Long-term Debt	(1)	(2)	(3)	(4)	(5)	(6)
Explanatory Variables	Access	Information Asymmetry	Power of Law	Financial Distress	Business Environment	Development of Financial Sector
Institutional-specific Factors:						
Credit Rights	-0.151					
	-0.729					
Strength of Legal Rights	0.813					
	-0.598					
Investor Protection	-0.101**					
	-0.0401					
Disclosure Requirement		0.396**				
		-1.547				
Credit Information		0.368*				
		-0.702				
Formalism			-0.885			
			-0.813			
Enforcing Contract			-0.0262			
			-0.0139			
Corruption			-0.0475			
			-0.0364			
Cost of Bankruptcy				0.695*		
				-0.784		
Bankruptcy time				0.024		
				-0.571		
Starting Business					-0.205**	
					-0.0944	
Human Capital					-0.431	
					-0.407	
FDI of GDP (%)					-0.461	
					-0.456	
Non-performing Loans						0.904*
						-1.565
Volatility of price						-0.271**
						-0.124
Constant	3.536	-15.55**	5.659	-5.329**	33.88*	-14.99*
	-5.002	-6.234	-6.961	-2.148	-19.77	-7.959
Observations	2,703	2,703	2,703	2,703	2,584	2,703
Number of id	1,034	1,034	1,034	1,034	1,002	1,034
No. of Instruments	68	67	61	66	58	59
AR1	0.003	0.004	0	0	0	0
AR2	0.896	0.708	0.907	0.885	0.947	0.796

Note: definition of both macroeconomic and institutional independent variables has been shown in the note of Table 7.56(1) and Table 7.57(2). In the GMM estimation (Arellano-Bond test), the Year dummy variables refers to if the year dummy is included in the estimate (1), AR1 and AR2 are first and second- order autocorrelation in the first-differenced residuals. Sargan-test is a test for the null of valid instruments and is asymptotically distributed as X^2 under the null. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 7.52(1): Empirical Regression Results in Short-term Debt Ratio: Impacts of Country and Institutional Factors:

Short-term Debt Explanatory Variables	(1) Access	(2) Information Asymmetry	(3) Power of Law	(4) Financial Distress	(5) Business Environment	(6) Development of Financial Sector
Firm-specific Factors:						
Lagged STD	0.589*** (0.0690)	0.582*** (0.0731)	0.679*** (0.123)	0.753*** (0.118)	0.804*** (0.103)	0.681*** (0.124)
PROF	-0.202*** (0.0547)	-0.230*** (0.0851)	0.0774 (0.109)	-0.120* (0.0616)	-0.137** (0.0564)	-0.110** (0.0474)
TANG	0.0810 (2.787)	-2.914 (2.605)	-2.759 (7.190)	-3.027** (1.379)	3.327 (2.886)	-5.563*** (2.050)
SIZE	0.432 (0.683)	0.718 (0.693)	0.190 (0.994)	-0.450 (0.397)	0.848 (0.738)	0.0727 (0.820)
ADMIN	-0.796** (0.392)	-0.353 (0.342)	-0.591 (0.834)	-0.340 (0.286)	-0.647* (0.340)	-0.215 (0.295)
LIQUIDITY	-2.463*** (0.404)	-2.253*** (0.497)	-1.390** (0.651)	-1.836*** (0.479)	-1.514*** (0.421)	-1.853*** (0.461)
TAX	-0.0130 (0.0157)	-0.0158 (0.0171)	-0.0229 (0.0248)	0.000569 (0.0150)	-0.0152 (0.0175)	-0.00977 (0.0164)
PAYOUT	0.000380 (0.00904)	0.00586 (0.00819)	0.00854 (0.00946)	0.00846 (0.00708)	0.00963 (0.00753)	0.00861 (0.00802)
MTB	0.478** (0.227)	0.495** (0.231)	-0.483 (0.353)	0.0917 (0.125)	0.344** (0.154)	0.0635 (0.217)
GROWTH	0.00200 (0.00226)	0.000970 (0.00338)	-0.00251 (0.00337)	0.00232 (0.00223)	0.000951 (0.00256)	0.00111 (0.00225)
RETURN	-0.0139* (0.00800)	-0.00588 (0.00463)	-0.0105* (0.00612)	-0.00903* (0.00519)	-0.00801* (0.00467)	-0.0130*** (0.00462)
Country-specific Factors:						
Development of Stock Market	0.00264 (0.0115)	-0.00809 (0.0109)	0.00963 (0.00787)	-0.00155 (0.00620)	-0.0114** (0.00567)	0.00586 (0.00571)
Inflation Rate	0.0299 (0.202)	0.149 (0.178)	0.0504 (0.191)	0.148 (0.174)	0.175 (0.123)	-0.00943 (0.143)
Development of Bond Market	-0.153** (0.0680)	-0.173*** (0.0599)	-0.00496 (0.0544)	-0.0413 (0.0302)	-0.0775* (0.0454)	-0.0241 (0.0543)
GDP Growth	0.0151 (0.164)	0.0665 (0.183)	-0.0302 (0.129)	-0.00851 (0.118)	0.0312 (0.102)	-0.0921 (0.108)

Note: The **STD** is short-term debt divided by total debt and shareholder equity in percentage; total liability in market value (%) The lagged debt ratio in book value (%) is short-term debt divided by total debt and total shareholder equity in percentage of firm i in year $t-1$. $X_{i,t}$ is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (**PROF**) is EBIT divided by total asset; tangibility in % (**TANG**) is tangible asset divided by total asset; Effective Tax rate in % (**TAX**) is income tax expenses divided by pretax income; Dividend Payout Ratio (**DIV**) is dividend per share divided by earning per share; Market-to-Book (**MTB**) is market value per share divided by book value per share; liquidity in % (**LIQUIDITY**) is current asset divided by current liability; Administration Cost in % (**ADMIN**) is the percentage of total administration expenses to total asset; Growth opportunity in % (**GROWTH**) is the change of total revenue in percentage; Stock Performance(**RETURN**) in % is the change of stock price in percentage. This table reports our empirical results from institutional effect on capital structure decision in four debt estimations by applying GMM specification.

The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. The data are drawn from the datastream and Bloomberg databases. All t-values are reported in the parentheses: standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 7.53(2): Empirical Regression Results in Short-term Debt Ratio: Impacts of Country and Institutional Factors:

Short-term Debt Ratio	-1	-2	-3	-4	-5	-6
Explanatory Variables	Access	Information Asymmetry	Power of Law	Financial Distress	Business Environment	Development of Financial Sector
Institutional-specific Factors:						
Credit Rights	-0.89*					
	-0.554					
Strength of Legal Rights	1.067**					
	-1.548					
Investor Protection	-0.0932					
	-0.0697					
Disclosure Requirement		-0.157				
		-0.555				
Credit Information		0.626**				
		-0.232				
Formalism			0.25			
			-0.312			
Enforcing Contract			-0.141			
			-0.0691			
Corruption			0.209			
			-0.389			
Cost of Bankruptcy				0.661		
				-1.524		
Bankruptcy time				-1.336		
				-1.461		
Starting Business					-0.0850***	
					-0.0317	
Human Capital					-0.231	
					-0.157	
FDI of GDP (%)					-0.264	
					-0.28	
Non-performing Loans						0.577
						-1.091
Volatility of price						0.0323
						-0.0721
Constant	26.76*	-11.76	-30.09	10.53*	19.42***	0.0476
	-13.78	-11.66	-35.58	-6.105	-6.542	-5.928
Observations	2,703	2,703	2,703	2,703	2,584	2,703
Number of id	1,034	1,034	1,034	1,034	1,002	1,034
No. of Instruments	59	58	56	57	70	59
AR1	0	0	0	0	0	0
AR2	0.833	0.19	0.39	0.305	0.291	0.272
Sargan Test	0.022	0.009	0.683	0.652	0.199	0.002
Hansen Test	0.766	0.49	0.68	0.417	0.202	0.438

Note: The GMM estimation is robust to serial correlation and heteroskedasticity problems. **STD** is short-term debt divided by total debt and shareholder equity in percentage; total liability in market value (%) The lagged debt ratio in book value (%) is short-term debt divided by total debt and total shareholder equity in percentage of firm i in year $t-1$. $X_{i,t}$ is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The definition of both macroeconomic and institutional independent variables has been shown in the note of Table 7.56(1) and Table 7.57(2). The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. In the GMM estimation (Arellano-Bond test), the Year dummy variables refers to if the year dummy is included in the estimate (1), AR1 and AR2 are first and second-order autocorrelation in the first-differenced residuals. Sargan and Hansen tests are tests for the null of valid instruments and is asymptotically distributed as χ^2 under the null. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 7.54(1): Empirical Regression Results in Total Debt in Market Value: Impacts of Country and Institutional Factors:

Total Debt in Market Value Explanatory Variables	(1) Access	(2) Information Asymmetry	(3) Power of Law	(4) Financial Distress	(5) Business Environment	(6) Development of Financial Sector
Firm-specific Factors:						
Lagged TDMV	0.813*** (0.0553)	0.843*** (0.0563)	0.676*** (0.179)	0.773*** (0.0817)	0.651*** (0.112)	0.848*** (0.0620)
PROF	-0.0739 (0.0898)	-0.176* (0.0930)	-1.022*** (0.372)	-0.205** (0.101)	-0.303** (0.146)	-0.0489 (0.0789)
TANG	0.998 (6.472)	1.460 (2.508)	13.15 (19.76)	-1.886 (2.121)	26.93* (14.79)	-4.514* (2.329)
SIZE	1.971 (1.263)	1.063 (1.078)	-1.860 (3.348)	3.082** (1.248)	8.824** (4.408)	3.281*** (1.140)
ADMIN	-0.798 (0.756)	-0.807* (0.471)	-2.985 (2.999)	-0.558 (0.424)	-2.701** (1.222)	-0.00192 (0.395)
LIQUIDITY	-1.953*** (0.555)	-2.091*** (0.530)	-6.306*** (1.516)	-2.408*** (0.707)	-3.186*** (1.212)	-1.251** (0.508)
TAX	-0.00446 (0.0239)	0.00887 (0.0205)	0.0242 (0.0461)	-0.0205 (0.0221)	-0.0774 (0.0685)	-0.0202 (0.0211)
PAYOUT	-0.0146 (0.0138)	-0.00166 (0.00899)	0.00219 (0.0218)	-0.0106 (0.0131)	-0.00475 (0.0184)	-0.0176* (0.0105)
MTB	-0.560** (0.233)	-0.582 (0.438)	0.772 (0.815)	-0.418 (0.291)	0.301 (0.726)	1.851 (1.232)
GROWTH	0.00107 (0.00430)	0.00155 (0.00387)	0.0185** (0.00718)	0.00638* (0.00360)	-0.00889 (0.00909)	0.00282 (0.00355)
RETURN	-0.113*** (0.0182)	-0.0962*** (0.00833)	-0.0997*** (0.0193)	-0.104*** (0.0110)	-0.0942*** (0.0204)	-0.155*** (0.0230)
Country-specific Factors:						
Development of Stock Market	0.0366 (0.0265)	0.0137 (0.0174)	0.00412 (0.0203)	-0.0186 (0.0136)	0.0184 (0.0195)	0.0112 (0.0183)
Inflation Rate	0.703* (0.418)	0.744*** (0.224)	1.991** (0.868)	-0.0168 (0.467)	0.757 (0.734)	0.322 (0.275)
Development of Bond Market	-0.142 (0.183)	-0.210 (0.181)	-0.0950 (0.141)	-0.0222 (0.0498)	-0.565*** (0.202)	-0.194** (0.0866)
GDP Growth	-0.771* (0.401)	-0.899*** (0.329)	-1.099** (0.500)	-0.466 (0.319)	-1.006** (0.435)	-0.554** (0.273)

Note: This table reports our empirical results from institutional effect on capital structure decision in total debt ratio in market value by applying GMM specification. The **TDMV** is total debt divided by total debt and market capitalization in percentage. The lagged debt ratio in book value (%) is total debt divided by total debt and total shareholder equity in percentage of firm i in year $t-1$. $X_{i,t}$ is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The ten Independent Variables are defined as follows: Profitability in % (**PROF**) is EBIT divided by total asset; tangibility in % (**TANG**) is tangible asset divided by total asset; Effective Tax rate in % (**TAX**) is income tax expenses divided by pretax income; Dividend Payout Ratio (**DIV**) is dividend per share divided by earning per share; Market-to-Book (**MTB**) is market value per share divided by book value per share; liquidity in % (**LIQUIDITY**) is current asset divided by current liability; Administration Cost in % (**ADMIN**) is the percentage of total administration expenses to total asset; Growth opportunity in % (**GROWTH**) is the change of total revenue in percentage; Stock Performance (**RETURN**) in % is the change of stock price in percentage. The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. All t-values are reported in the parentheses: standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 7.55(2): Empirical Regression Results in Total Debt in Market Value: Impacts of Country and Institutional Factors:

Total Debt in Market Value	(1)	(2)	(3)	(4)	(5)	(6)
Explanatory Variables	Access	Information Asymmetry	Power of Law	Financial Distress	Business Environment	Development of Financial Sector
Institutional-specific Factors:						
Credit Rights	-0.475*					
	0.76					
Strength of Legal Rights	0.646					
	-0.361					
Investor Protection	-0.0394					
	-0.0811					
Disclosure Requirement		-0.351				
		-0.574				
Credit Information		0.964				
		-0.976				
Formalism			-0.277			
			-0.511			
Enforcing Contract			0.618**			
			-0.283			
Corruption			0.664			
			-1.074			
Cost of Bankruptcy				-0.795		
				-0.96		
Bankruptcy time				0.072		
				-0.661		
Starting Business					-0.453**	
					-0.211	
Human Capital					-1.528**	
					-0.749	
FDI of GDP (%)					-2.793**	
					-1.418	
Non-performing Loans						1.084**
						-1.552
Volatility of price						-0.067
						-0.115
Constant	31.28*	9.909	-1.173	-3.85	101.7**	-14.16
	-18.42	-22.01	-87.3	-12.86	-42.03	-9.715
Observations	1,496	1,496	1,496	1,496	1,422	1,422
Number of id	634	634	634	634	610	610
No. of Instruments	26	25	39	37	32	36
AR1	0	0	0	0	0	0
AR2	0.173	0.25	0.306	0.238	0.575	0.489
Sargan Test	0.345	0.333	0.519	0.344	0.535	0.467
Hansen Test	0.522	0.377	0.368	0.214	0.553	0.291

Note: This table reports our empirical results from institutional effect on capital structure decision in four debt estimations by applying GMM specification. The **TDMV** is total debt divided by total debt and market capitalization in percentage. The lagged debt ratio in book value (%) is total debt divided by total debt and total shareholder equity in percentage of firm i in year $t-1$. $X_{i,t}$ is a vector of the firm-specific variables. The term v_i captures the effects of time-invariant unobservable firm-specific factors. The term ε_{it} represents the time-varying residuals. The subscripts i and t denote firm and time period respectively. The Sample consists of all listed non-financial firms in China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand markets on their stock exchange markets over the period of 2006 to 2011. The Year dummy variables refers to if the year dummy is included in the estimate (1), AR1 and AR2 are first and second- order autocorrelation in the first-differenced residuals. Sargan and Hansen tests are test for the null of valid instruments and are asymptotically distributed as χ^2 under the null. Also, all t-values are reported in the parentheses: standard errors in parentheses: *** p<0.01, ** p<0.05, * p<0.1.

Table 7.56(1): The Definition and Source of Country- and Institutional-specific Factors in this Thesis:

Variables	Description	Source
Country-Specific Factors:		
GDP Growth %	GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products.	Worldbank Database
Inflation	Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals	Worldbank Database
Lending Rate	Lending interest rate is the rate charged by banks on loans to prime customers.	Worldbank Database
Development of Stock Market	Market capitalization (also known as market value) is the share price times the number of shares outstanding. The variable is defined as the percentage of market capitalization to GDP growth. The Listed domestic companies are the domestically incorporated companies listed on the country's stock exchanges at the end of the year. Listed companies do not include investment companies, mutual funds, or other collective investment vehicles.	Worldbank Database
Development of Bond Market	This indicator shows the size of bond obligations as a percentage of nominal GDP. The percentage of total amount of local currency bond market to GDP growth. Sub-ratios are computed for bonds issued by government, financial institutions, and corporates. Government bonds include obligations of the central government, local governments, the central bank, and state-owned entities. Corporates comprise both public and private companies including international organizations. Financial institutions comprise both private and public sector banks and other financial institutions.	Asianbond
Institutional-specific Factors:		
1) Ease of Access		
Creditor Rights	Creditor rights aggregate score	Djankov <i>et al.</i> 2007
Strength of Legal Right	The degree to which collateral and bankruptcy laws protect the rights of borrowers and lenders and thus facilitate lending. The index ranges from 0 to 10, with higher scores indicating that these laws are better designed to expand access to credit	Worldbank Database
Investor Protection	The strength of minority shareholder protections against directors' misuse of corporate assets for personal gain. The indicators distinguish 3 dimensions of investor protections: transparency of related-party transactions (extent of disclosure index), liability for self-dealing (extent of director liability index) and shareholders' ability to sue officers and directors for misconduct (ease of shareholder suits index) The data come from a questionnaire administered to corporate and securities lawyers and are based on securities regulations, company laws, civil procedure codes and court rules of evidence. The ranking on the strength of investor protection index is the simple average of the percentile rankings on its component indicators.	Worldbank Survey
2) Asymmetric Information		
Disclosure Requirement	This variable takes a value of 1 if the law or regulations of the country require MPs (members of the lower house of parliament or congress) to provide either financial and/or business interests disclosures. The variable takes a value of zero otherwise.	Worldbank Database
Credit Information	Credit depth of information index measures rules affecting the scope, accessibility, and quality of credit information available through public or private credit registries. The index ranges from 0 to 6, with higher values indicating the availability of more credit information, from either a public registry or a private bureau, to facilitate lending decisions.	Worldbank Database
Private credit bureau coverage	Private credit bureau coverage reports the number of individuals or firms listed by a private credit bureau with current information on repayment history, unpaid debts, or credit outstanding. The	Worldbank Database

number is expressed as a percentage of the adult population.

Table 7.57(2): The Definition and Source of Country- and Institutional-specific Factors in this Thesis:

Variables	Description	Source
Institutional-specific Factors:		
3) Power of Law		
Formalism	a measure of how heavily the law regulates the procedure.	Djankov <i>et al.</i> 2003
Enforcing Contract	The efficiency of the judicial system in resolving a commercial dispute. The data are built by following the step-by-step evolution of a commercial sale dispute before local courts. The data are collected through study of the codes of civil procedure and other court regulations as well as questionnaires completed by local litigation lawyers and by judges. The ranking on the ease of enforcing contracts is the simple average of the percentile rankings on its component indicators.	Worldbank Survey
Corruption	The Corruption Perceptions Index measures the abuse of power, secret dealings and bribery continue to ravage societies around the world. The Index scores on a scale from 0 (highly corrupt) to 100 (very clean).	(Transparency international the global coalition against corruption). http://www.transparency.org/cpi2013/results
4) Financial Distress Cost		
Bankruptcy cost	The estimated cost of the insolvency proceeding for Mirage, reported as a percentage of the value of the insolvency estate, borne by all parties. Costs include court/bankruptcy authority costs, attorney fees, bankruptcy administrator fees, accountant fees, notification and publication fees, assessor or inspector fees, asset storage and preservation costs, auctioneer fees, government levies and other associated insolvency costs.	Djankov, Hart, Mcleish, and Shleifer (2008)
Time to deal with bankruptcy	The estimated duration, in years, of the time to resolve the insolvency case of Mirage under the factual and procedural assumptions provided. Time measures the duration from the moment of Mirage's default to the point at which the fate of Mirage is determined: i.e., when Mirage is either sold as a going concern, sold piecemeal, or successfully reorganized.	Djankov, Hart, Mcleish, and Shleifer (2008)
5) Business Environment		
Starting a Business	The number of procedures, time and cost for a small and medium-size limited liability company to start up and formally operate. To make the data comparable across 189 economies, Doing Business uses a standardized business that is 100% domestically owned, has start-up capital equivalent to 10 times income per capita, engages in general industrial or commercial activities and employs between 10 and 50 people within the first month of operations.	Worldbank Survey
Human Capital (Enrollment in Tertiary)	Gross enrolment ratio. Tertiary (ISCED 5 and 6). Total is the total enrollment in tertiary education (ISCED 5 and 6), regardless of age, expressed as a percentage of the total population of the five-year age group following on from secondary school leaving.	Worldbank Database
FDI % of GDP	Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP. Private financial flows - equity and debt - account for the bulk of development finance. Equity flows comprise foreign direct investment (FDI) and portfolio equity. Debt flows are financing raised through bond issuance, bank lending, and supplier credits.	Worldbank Database
6) Financial Sector		
Non-performing loans % gross loans	Bank nonperforming loans to total gross loans are the value of nonperforming loans divided by the total value of the loan portfolio (including nonperforming loans before the deduction of specific loan-loss provisions). The loan amount recorded as nonperforming should be the gross value of the loan as recorded on the balance sheet, not just the amount that is overdue.	Worldbank Database
Stability of Stock Price	Volatility of stock price index is the 360-day standard deviation of the return on the national stock market index.	(Bloomberg)

Chapter 8: Conclusion:

The lack of comparative studies on firm's financing decisions and the dynamic economic and financial environment of the Asian countries are the pressing drivers which motivated this thesis. These drivers make it worthwhile to investigate the effect of a broad set of firm-, industry- and country-level institutional factors on a firm's financing decision in Asia. The thesis concentrates on six Asian countries: China, Hong Kong, Indonesia, Malaysia, Singapore and Thailand. This thesis aimed to investigate determinants of firm's capital structure decision from both micro- and macro-level perspectives in six Asian markets. It provides new evidence from a group of emerging market economies that experienced significant growth and development of their capital market level as well as their overall economy. The thesis provides three empirical chapters discussing important issues on the determinants of capital structure in Asia. The aim of the first empirical study was to investigate the impact of firm-specific factors on the capital structure decision using dynamic models. The second empirical study aimed to provide evidence on the role of the industry effect in terms of growth and maturity on the capital structure decision. The third study provides empirical evidence on the effect of macroeconomic and institutional factors on the firms' capital structure. These studies individually and collectively fill a gap in the literature in terms of studies on emerging markets. They provide new evidence on the effect of industry and institutional factors that has not previously been investigated in the literature.

The dynamic nature of the capital structure decision, as evident from the recent literature, underlines the importance of using econometric methods that account for such dynamics. This thesis utilises the Generalised Method of Moments (GMM) developed by Arellano and Bond (1991) that is widely used in the literature for estimating the dynamic capital structure models.

The result of the investigation into firm-specific effects identifies that short-term debts are overemployed, whereas the long-term debt still mainly serves for those large firms in Asia. Our findings also identified the existence of a dynamic model of firm's capital structure decisions in Asia across the four debt measures used. This implies that the Asian firms follow the trade-off theory concept in capital structure decision. In other words, the speed of adjustment is a trade-off between the cost of adjustment and cost of being off target. In general the adjustment of long-term debt is slower than the short-term debt ratios. However, during the financial crisis period, the effect of target capital structure turns out to be insignificant. In terms of the effects of firm-specific factors, our findings show that a firm's capital structure decision is associated with profitability, firm size, firm liquidity, market-to-book ratio and administration expenses. Firms with more retained earnings tend to avoid external financing and instead use internal sources to finance their investment projects, which is in line with pecking order theory. Large firms tend to obtain more debts compared to small- and medium-size firms in Asia. Firms with better performance tend to easily raise debt finance from the credit market. The factors of firm tangibility, growth opportunities and effective tax rate did not show a significant correlation in the selected Asian markets.

In terms of industry effects on the capital structure decision, our results show that the degree of using external finance varies significantly across industries in Asia and that this is more evident in long-term debt compared to short-term debt. The traditional mature industries with heavy equipment tend to easily access external funding, whereas growing (knowledge-based) industries with higher R&D expenditure, higher uncertainty, and a lack of collateral find it hard to borrow from formal financing channels. The financial systems in Asia remain structurally unbalanced with high concentrations of lending conducted via the banking

system. This in turn constrains the availability of alternative sources, especially for some certain sectors (i.e. technology and services-based industries) that have less collateral and higher risk. Overall, our findings suggest that the effects of firm-specific factors are more significant in explaining a firm's capital structure decision in the mature industries than in the growing industries in Asia.

With respect to the institutional and macroeconomic effects on the capital structure, our results suggests that these factors help to improve the understanding of firm's capital structure decision in Asia. Hence the result reflect that the international differences in both the economic development and institutional setting will influence the costs and benefits of external finance. Our findings show that there is no significant difference in the degree of overall indebtedness between strong and weak institutional environments. The main differences appear in long-term debt, and the gap is quite large between strong and weak institutional environments. Moreover, there is large gap between the long- and short-term debt ratios in the weak institutional environment. Regardless of the state of the institutional environment firms still make excessive use of short-term debts. In terms of macroeconomic conditions, GDP growth and stock market development show significant correlations to debt ratio, which suggests that they both play an important role in firm's demand for and access to external capital. The institutional factors, namely information asymmetry, legal system, business environment and the development of the financial system, do matter to firm's capital structure decisions in Asia. In particular, the collateral effect in term of creditor right, disclosure requirement and credit information is significant among these Asian firms, which implies that creditors are reluctant to lend if they are not legally well-protected. A new finding from this thesis has shown that firms from a more friendly business environment tend

to take advantage of equity issuance rather than debt finance. In addition, the firms from a less developed and inefficient banking sector tend to rely excessively on short-term debt. Interestingly, the cost of financial distress shows a positive association to the long-term debt ratio, which contradicts trade-off theory. This result indicates that these Asian countries may need to further enforce bankruptcy laws. Hence the current laws must allow distressed firms to survive to some degree with support from the local government or officials.

There is a threefold contribution to the literature in this thesis. First, it provides new evidence on the dynamic nature of firm's capital structure decision and its speed of adjustment in four debt ratios in Asia in recent years. Second, it extends existing literature on Asian firm's financing decision to investigate the role of industry nature on firm's capital structure decision and compares their differences between traditional mature industries (steady growth) and emerging knowledge-based industries (fast growth). Third, going beyond this, since financing cost will vary according to changes in the external economic environment and institutional framework, these factors will further influence a firm's capital structure decision. The six selected Asian countries enjoyed a rapid economic expansion during the past two decades, which has created booming capital markets and attracted massive foreign capital inflows. The high speed of growth observed in the Asian financial sectors played an important role in stimulating the miraculous growth that these countries enjoyed in the last two decades. Hence, this thesis is also the first that attempts to focus on the relevance of country-level factors on financing pattern, by considering macroeconomic development and institutional settings, to expand upon the scant studies on corporate financing decision in Asian markets. Ours is the also first study to apply some variables of institutional features to investigating the issue of capital structure decision.

8.3: Policy Implications:

The scarcity of financing sources and the difficulty of financing growing sectors (i.e. the healthcare and technology sectors) are especially significant in Asia. Their business characteristics (i.e. high bankruptcy and innovative risks, long cycles, higher R&D cost and high degree of uncertainties) made them difficult to finance from banks, stock markets and other traditional financing channels. Moreover, these formal financial channels have mainly served those “safe” sectors with lower risk, stable returns, higher entry barriers, less competition and government-domination. Correspondingly, the availability and allocation of capital in the financial sector in these Asian markets does not support the development of the emerging services or knowledge-based sectors. The development of the financial sector lags behind the progress of the real sector economy (especially emerging, fast growing knowledge-based sectors). Much worse, based on the study of Wilson (2011), the major financing source among small firms in the early development stage in China is still family and friends and these remains very local. Even in Singapore and Hong Kong, as relatively developed financial markets in the Asian region, the development of angel investments are still new, starting from late 1990 (Wong, 2011). The financing activities and capital distribution in financial systems to these newly and fast-growing knowledge-based firms are still scarce, arduous and inefficient. In a consequence, the importance of private capital is increasing during the economic expansion period in Asia. The formalization of the private capital market, promotion of angel investment, standardization of private capital operations, and the related law and rules are becoming critical with regard to the reform and development of the economy in order to improve the efficiency of capital allocation. More importantly, the

central issue is how to take private capital out from “grey areas” to better diversify existing financing products and sources. This is one of the most crucial problems in the evolution of the financial market in Asia. In addition, in order to facilitate the development of private capital, the government should also further liberalize and allow private venture capital into state-owned and monopolized industries (i.e. the utility and telecommunications sectors), since a large amount of private capital is limited in certain areas and this could lead to over-competition and to the shrinkage their development potential.

In Asia, firms tend to take advantage of short-term debts to meet usage of long-term finance, especially in countries with weak institutional environments. this provides a warning that the lagged development of bond markets (in particular, the corporate bond market) limits firms’ financing potential. Moreover, since the banking sector plays such a dominant role in the financial system in the Asian environment (especially in China and Indonesia), the role of the bond market in the financial system is neglected. In order to improve market discipline, the balance of a sound bond market and healthy banking sector is becoming crucial. As Eichengreen (2004) has suggested, the issue of the underdeveloped bond market has been a concern since the Asian crisis of 1997. A heavy dependence on banks can result in both political and economic connections in the allocation of financial resources. As a consequence, the Asian countries in this study need a more diversified financial system in order to enhance the efficiency of capital allocation. Another concern which policy makers need to address is due to culture and society structure in Asia, because SOEs could benefit significantly from the support received from government officials. This would result in mitigating the effect of financial distress cost at country level and thus reduce its explanatory power on firms’ capital structure decisions. Hence, the effectiveness and efficiency of bankruptcy law in Asia still

needs to further improve, it is especially worth considering how to develop a bankruptcy law that could work in an environment that is crowded by a state-owned or family-owned firms.

8.3: Limitations of thesis:

This thesis has shown that the legal environment and the development of the financial sector have a significant effect on a firm's capital structure decision in Asia. More importantly, the state-owned enterprises with unique corporate governance are given more attention in terms of the scale and scope of developments in the economy. Hence, how ownership of firms affects capital structure decision could be taken into account in future studies. It is especially worth comparing whether a firm's capital structure decision varies significantly between state-owned firms and private firms in the Asian environment. In addition, it is also possible that firms with more efficient governance structures (the ownership differences between firms) can have higher profitability despite the institutional environment in which they operate, and thereby lower leverage. In other words, profitability and governance structures can be correlated, which can be uncovered by adding an interaction term.

In this thesis, our results also show that the effects of corruption and formalization are not significantly associated with a firm's capital structure in Asia. However, this result might change in private firms or firms with a different size, since it is possible that the degree of corruption and the power of law only work well for those non-government-connected firms in the private sector in Asia. Similarly, the effect of formalization on firm's financing pattern also could turn out to be significant in various firm sizes. Basically, larger firms are more likely to prefer formality, whereas micro and smaller firms might rather stay informal since they would not like to bear the higher costs of formalization. Hence, how corruption and

power of law influence a firm's financing decision could also be re-conducted in future research by classifying various types of firms by ownership and firm sizes. In addition, due to the unavailability of data, all firms in our sample chosen are the listed companies in stock exchanges in Asia, but it is possible that the financing pattern of listed companies might be significantly different from those unlisted firms. In particular, there are many small-to-medium-sized family firms in Asia for which ownership and management information are unavailable from existing databases. Consequently, future studies could pay more attention to unlisted firms' financing choices when data becomes available, which might provide even more insights into a firm's capital structure decision in the Asian context.

Bibliography:

Agarwal, P and M. O'Hara (2006). Information Risk and Capital Structure. SSRN working Paper NO.939663.

Aghion, P; Klemm, A; Bond, S and Marinescu, I (2004). Technology and Financial Structure: are innovative firms different? *Journal of the European Economic Association* 2(2-3), 277-288.

Agarwal, Y (2013). Capital Structure Decisions: Evaluating Risk and Uncertainty. John Wiley & Sons Singapore Pte Ltd, Singapore.

Alti, A (2006). How persistent is the impact of Market Timing on Capital Structure. *The Journal of Finance* 61(4), 1681-1709.

Al-Najjar, B (2011). The inter-relationship between capital structure and dividend policy: empirical evidence from Jordanian data. *International Review of Applied Economics* 25(2), 209-224.

Al-Sakran, S.A (2001). Leverage determinants in the absence of corporate tax system: The case of non-financial publicly traded corporations in Saudi Arabia. *Managerial Finance*, 27(10/11): 58–86.

Altman, E.I (1984). A further empirical investigation of the bankruptcy costs questions. *The Journal of Finance* 39(4), pp1067-89.

Akhtar, S (2005). The determinants of capital structure for Australian multinational and domestic corporations. *Australian Journal of Management* 30(2), 321-341.

Ameer, R (2013). Financial liberalization and firms' capital structure adjustments evidence from Southeast Asia and South America. *Journal of Economics and Finance* 37, 1-32.

Anderson, R.W (2002). Capital structure, firm liquidity and growth. NBB working paper, no.27.

Anderson, T.W and C. Hsiao (1981). Estimation of Dynamic Models with Error Components. *Journal of the American Statistical Association* 76, 598–606.

Ang, J S and Jung, M (1993). Alternate test of Myers' pecking order theory of capital structure: the case of South Korean firms. *Pacific-Basin Finance Journal*, 31-46.

Antoniou, A., Guney, Y and Paudyal, K (2002). Determinants of corporate capital structure: Evidence from European countries. University of Durham, working paper.

Antoniou, A; Guney Y and Paudyal K (2006). The determinants of debt maturity structure: evidence from France, Germany and the UK. *European Financial Management* 12, 161-194.

Antonious. A; Guney. Y; Paudyal. K (2008). The Determinants of Capital Structure: Capital Market-Oriented Versus Bank-Oriented Institutions. *Journal of Financial and Quantitative analysis* 43(1), 59-92.

Arellano, M and S. Bond. (1991). Some tests of specification for panel data: Monte Carlo evidence and an application to employment equations. *The Review of Economic Studies*, 58, 277 – 297.

Arellano, M and O. Bover (1995), Another Look at the Instrumental Variable Estimation of Error-Components Models. *Journal of Econometrics* 68, 29-51.

Ayyagari. M and Maksimovic V (2013). Formal versus Informal Finance: Evidence from China. *The Society for Finance Studies* 26(6). Available at: <http://ssrn.com/abstract=2484228>.

Autore,D and Kovacs.T (2009). Equity Issues and Temporal Variation in information asymmetry. *Journal of Banking and Finance* 34, 12-23.

Baker. M and Wurgler, J (2002). The equity share in new issues and aggregate stock return. *Journal of Finance* 55, 2219-2257.

Baltagi. B.H (2001). *Econometric Analysis of Panel Data*, 2nd Edition. Chichester.

Barnea, A, Haugen, R. A and Senbet, L. M (1980). A Rationale for Debt Maturity Structure and Call Provisions in the Agency Theoretic Framework. *Journal of Finance* 35(5):1223–34.

Barton, S.L., Ned C.H. and Sundaram S (1989). An empirical test of stakeholder theory predictions of capital. *Financial Management*, 18(1): 36–44.

Barclay, Michael J. and Clifford W. Smith, Jr (1996). On financial architecture: Leverage, maturity and priority. *Journal of Applied Corporate Finance*, 8: 4–17.

Barry, C, Mann, S, Mihov, V, & Rodríguez, M (2008). Corporate debt issuance and the historical level of interest rates. *Financial Management* , 37, 413-430.

Barclay. M and Smith. C (1995). The maturity structure of corporate debt, *Journal of Finance* 40, 609-631.

Beattie, V, Goodacre, A, and Thomson, S.J (2006). Corporate Finance Decisions: UK survey Evidence. *Journal of Business Finance and Accounting* 33(9-10), 1402-1434.

Bessler, W., Drobetz, W., Grüninger, M.C. (2011). Information asymmetry and financing decisions. *International Review of Finance* 11, 123–154.

Bhagat. S; Bolton. B and Subramanian A (2011). Manager characteristics and capital structure: Theory and Evidence. *Journal of Financial and quantitative analysis* 46(6),1581-1627

- Bolton. P; Chen. H and Wang. N (2013). Market Timing, investment, and risk management. *Journal of Financial Economics* 109(1), 40-62.
- Bradley, M, Jarrell. Gregg A and Kim Han E (1984). On the Existence of an Optimal capital Structure: Theory and Evidence. *Journal of Finance* 39, 857-878.
- Brander, J.A and Lewis, T.R (1986). Oligopoly and financial structure: The limited liability effect. *American Economic Review* 76, 956-70.
- Broner. F A; Lorenzoni. G and Schmukler. S L (2003). Why do emerging economies borrow short-term. *Journal of the European Economic Association* 11(S1), 67-100.
- Byoun, S (2008). How and When Do Firms Adjust Their Capital Structures toward Targets? *The Journal of Finance* 63, 3069- 3096.
- Baker, M, and Wurgler. J (2002). Market timing and capital structure. *Journal of Finance* 57, 1-32.
- Bancel.F and Mittoo, U.R (2004). Cross-country determinants of capital structure choice: a survey of European firms. *Financial Management* 33, 103-132.
- Bauer.P (2004). Determinants of capital structure: empirical evidence from the Czech Republic. *Czech Journal of Economics and Finance* 54, 2-21.
- Baharuddin N S; Khamis.Z; Mahmood W M W and Dollah. H (2011). Determinants of capital structure for listed construction companies in Malaysia. *Journal of Applied Finance & Banking* 1(2), 115-132.
- Bevan, A. A and Danbolt, J (2000). Capital structure and its determinants in the United Kingdom: a decompositional analysis, Working Paper, Dept. of Accounting and Finance, University of Glasgow.
- Beck, T, Demirguc-Kunt A and Maksimovic V (2002). Financing Patterns around the World: The Role of Institutions. World Bank Policy Research Working Paper 2905.
- Bessler.W; Drobetz.W and Gruninger. M C (2011). Information Asymmetry and Financing Decisions. *International Review of Finance* 11(1), 123-154.
- Bevan, A.A and Danbolt, J (2002). Capital structure and its determinants in the UK-A decompositional analysis. *Applied Financial Economy* 12, 159-170.
- Bhaduri. S N (2002). Determinants of capital structure choice: a study of the Indian corporate sector. *Applied Financial Economics* 12, 655-665.
- Bharat. S.P.Pasquariello and Wu. G (2008). Does asymmetric information Drive capital structure Decisions? *Review of Financial studies* 22, 3211-43.

- Blundell, R.W. and S.R. Bond (1998), Initial Conditions and Moment Restrictions in Dynamic Panel Data Models. *Journal of Econometrics* 87, 115-143.
- Brounen, D., A.; De Jong and Koredijk. K (2006). Capital Structure Policies in Europe: Survey Evidence. *Journal of Banking and Finance* 30(5), 1409-1442.
- Bond, S. (2002). Dynamic panel data models: a guide to micro data methods and practice, *Portuguese Economic Journal* 1, 141-162.
- Brennan, M and Kraus, A (1987). Efficient financing under asymmetric information. *Journal of Finance* 42, 1225-1243.
- Booth, L, Aivazian, V., Demirguc-Kunt, A. & Maksimovic, V (2001). Capital structures in developing countries. *The Journal of Finance* 56, 87-130.
- Bougatef. K and Chichti.J (2010). Equity Market Timing and Capital Structure: Evidence from Tunisia and France. *International Journal of Business and Management* 5(10), 167-77.
- Cassar, G and Holmes, S (2003). Capital Structure and Financing of SMEs: Australian Evidence. *Accounting and Finance* 43, 123-147.
- Campello, M, Giambona, E (2013). Real Assets and Capital Structure. *Journal of Financial and Quantitative Analysis, Forthcoming* .
- Chang, X.S, Dasgupta and Hilary.G (2006). Analysts Coverage and Financing Decisions. *Journal of Finance* 61, 309-348.
- Chang, R. P and Rhee, S. G (1990). The impact of personal taxes on corporate dividend policy and capital structure decisions. *Financial Management* 19(2), 21-31.
- Chaessens. S; Djankov. S and Klapper.L (1999). Resolution of Corporate Distress in East Asia. World Bank Policy Research Working Paper.
- Chakraborty. I (2010). Capital structure in an emerging stock market: the case of India. *Research in International Business and Finance* 24, 295-314.
- Chen, L, and Zhao X. S (2004). Profitability Means Reversion of Leverage Ratios and Capital Structure Choice. Working Paper Series, Michigan State University, East Lansing, MI.
- Chittenden, F; Hall, G and Hutchinson, P (1996). Small Firm Growth, Access To Capital Markets And Financial Structure: Review Of Issues And An Empirical Investigation. *Small Business Economics* 8, 59-67.
- Chen, J (2004). Determinants of capital structure of Chinese-listed companies. *Journal of Business Research* 57, 1341-1351.

Chen, L and Zhao X. S (2004). Profitability Means Reversion of Leverage Ratios and Capital Structure Choice. Working Paper Series, Michigan State University, East Lansing, MI.

Chen, J, & Strange, R (2005). The Determinants of Capital Structure: Evidence from Chinese Listed Companies. *Economic Change and Restructuring*, 38(1), 11-35.

Chen, L and Zhao. X (2005). Profitability, mean reversion of leverage structure choices, *Working paper*, Michigan State University.

Chen.D (2009). Legal Development in China's Securities Market during Three Decades of Reform and Opening-up. Asian Law Institution Working Paper.

Chung, Kee H (1993). Asset Characteristics and Corporate Debt Policy: An Empirical Test. *Journal of Business Finance and Accounting* 20: 83-98.

Clark, Brian, Bill Francis and Hasan Iftekhhar (2009). Do firms adjust towards target capital structure? Some International Evidence. *Working Paper of Technology of Rensselaer Polytechnik Institute in Troy Amerika, Lally School of Management*.

Coffee, J (1999). The future as history: The prospects for global convergence in corporate governance and its implications. *Northwestern University Law Review* (93), 641–708.

Colombo, M.G and Grilli, L (2005a). What makes a 'gazelle' in high-tech sectors? A study on founders' human capital and access to external financing. Paper presented at the 32nd *Conference of the European Association for Research in Industrial Economics*, Porto, Portugal.

Corsetti, G and P. Pesenti and N. Roubini (1998). What Caused the Asian Currency and Financial Crisis? Working paper. New York University.

Corcoran, P (1977). Inflation, taxes and corporate investment incentives. *Federal Reserve Bank of New York quarterly Review* 2, 1-9.

Črnigoj, M and Mramor, D (2009). Determinants of Capital Structure in Emerging European Economies: Evidence from Slovenian Firms. *Emerging Markets Finance & Trade* 45 (1), 72–89.

Culp C. L and Forrester, J. P (2009). Structured Financing Techniques in Oil & Gas Project Finance: Future Flow Securitizations, Prepaids, Volumetric Production Payments, and Project Finance Collateralized Debt Obligations. Oxford University Press, Forthcoming. Available at SSRN: <http://ssrn.com/abstract=1429501>

Daskalakis.N and Psillaki (2008). Are the Determinants of Capital Structure Country or Firm Specific? Evidence from SMEs. *Small Business Economics* 33(3), 319-333.

Daskalakis, N & Psillaki, M (2008). Do country or firm factors explain capital structure? Evidence from SMEs in France and Greece. *Applied financial economics* 18(1), 87-97. <http://dx.doi.org/10.1080/09603100601018864>.

Daouk Hazem; Charles, M.C. Lee, and David Ng, 2006. Capital market governance: how do security laws affect market performance? *Journal of Corporate Finance* 12, 560-593.

Demirgüç-Kunt, Asli and Vojislav Maksimovic (1999). Institutions, financial markets and firm debt maturity. *Journal of Financial Economics* 54, 295-336

DeAngelo, H and Masulis, R.W (1980). On the existence of an optimal capital structure: theory and evidence. *The Journal of Finance* 39(3), 857-78.

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

De Jong, A; Kabir, R and Nguyen, T.T; (2008). Capital structure around the world: the roles of firm-and country-specific determinants. *Journal of Banking and Finance* 32, 1995-1969.

De Soto, H (1992). Marktwirtschaft von unten. Die unsichtbare Revolution in Entwicklungsländern, Zürich, Köln: Orell Füssli.

Demirguc-Kunt, A and Maksimovic, V (1999). Institutions, financial markets, and firm debt maturity. *Journal of Financial Economics* 54, 295-336.

Diamond, D.W (1991). Debt Maturity Structure and Liquidity Risk. *Quarterly Journal of Economics* 33, 341-368.

Diamond, D.W (1993). Seniority and Maturity of Debt Contracts. *Journal of Financial Economics* 33, 341-368.

Dinc, I.S (2005). Politicians and Banks: Political Influences on Government-owned Banks in Emerging Markets. *Journal of Financial Economics* 77, 453-479.

Dittmar.A and Thakor.A (2007). Why do firms issue equity? *Journal of Finance* 72, 1-53.

Djankov, Simeon; Edward Glaeser; Rafael La Porta; Florencio Lopez-de-Silanes and Andrei Shleifer (2003b). The new comparative economics. *Journal of Comparative Economics* 31(1), 595-619.

Djankov, S., McLiesh C and Shleifer. A (2007). Private credit in 129 countries. *Journal of Financial Economics* 84, 299-329.

Djankov, Simeon, Oliver D. Hart; Caralee McLiesh and Andrei Shleifer (2008a). Debt enforcement around the world. *Journal of Political Economy* 116, 1105-1149.

Djankov, S; R. La Porta; Lopez-de-Silanes. F and Shleifer. A (2008). Courts. *Quarterly Journal of Economics* 118, 453–517.

Driffield. N; Mahambare.V and Pal. S (2007) How does ownership structure affected capital structure and firm value. *Economics of Transition* 15(3), 535-573.

Domowitz, I, Glen, J and Madhavan, A (2000). International evidence on aggregate corporate financing decisions. Working Paper, Pennsylvania State University.

Eichengreen. B (2004). Why Doesn't Asia Have Bigger Bond Markets? NBER Working Paper Series. Available at <http://www.nber.org/papers/w10576>.

Elliott. William B; Warr Richard S, Koëter-Kant Johanna, and Oztekin Ozde (2012). Equity mispricing and leverage adjustment costs. *Journal of Financial and Quantitative Analysis* 47, 589-616.

Fabbri (2001).The Legal Enforcement of Credit Contracts and the Level of Investment. CSEF Working Paper No. 57.

Fairchild. R (2010). Dividend policy, signalling and free cash flow: an integrated approach. *Managerial Finance* 36(5), 394-413.

Fan, J.P.H; Titman, S and Twite, G (2012). An international comparison of capital structure and debt maturity choices. *Journal of Financial and Quantitative Analysis* 47, 23–56.

Fan Joseph P.H; Titman. S and Twite. G (2012). An international Comparison of capital structure and debt maturity choices. *Journal of Financial and Quantitative Analysis* 47(1), 23-56.

Ferri, M.G and W.H. Jones (1979). Determinants of Financial Structure: A New Methodological Approach. *Journal of Finance* 34, 631-644.

Filbeck, G and Gorman. R (1999). The Relationship Between Productivity and Leverage. *Managerial and Decision Economics* 18, 731-745.

Flannery, M (1986). Asymmetric Information and Risky Debt Maturity Choice, *Journal of Finance* 41, 19-37.

Flannery M J and Oztekin. O (2009). Institutional determinants of capital structure adjustment speeds. *Journal of Financial Economics* 103, 88-112.

Flannery, M J and Rangan K P (2006). Partial Adjustment towards Target Capital Structure. *Journal of Financial Economics* 79, 469-506.

Fenn, G.; Liang. N and Prowse. S (1997). The Private Equity Market: An Overview. *Financial Markets Institutions, and Instruments* 6, 1–106.

Frank.M.Z and Goyal, V.K (2009). Capital structure decisions: which factors are reliably important? *Financial Management* 38, 1-37.

Friend I and Lang L.H.P (1988). An empirical Test of Impact of Managerial Self-interest on Corporate Capital Structure. *Journal of Finance* 43, 271-281.

Flannery, K. J and Rangan, K.P (2006). Partial Adjustment Towards Target Capital Structures. *Journal of Financial Economics* 79, 469-506.

Fock. S T and Wong. A C (2001). Post-East Asian Financial Crisis: Challenges and Opportunities for the Banking and Financial Services Sector in Singapore. *Review of Pacific Basin Financial Markets and Policies* 4(4), 495-521.

Fuest. C; Huber.B and Nielsen. S (2003). Why is the corporate tax rate lower than the personal tax rate?: The role of new firms. *Journal of Public Economics* 87(1), 157-174.

Gabriele. A (2004). Policy Alternatives in Reforming Power Utilities in Developing countries: A critical Survey. United Nations Conference on Trade and Development Discussion Paper.

Garcia-Herrero. A; Gavila. S and Santabarbara. D (2006) China's banking reform: An assessment of its Evolution and Possible Impact. *Economic Studies* 52(2), 304-363.

Gajurel, D.P (2005). Determinants of Capital Structure in Nepalese Enterprises. *Published Masters Degree Thesis*, Kathmandu: Tribhuvan University, Nepal.

Getzmann, A, Lang, S and Spremann, K (2010). Determinants of the target capital structure and adjustment speed – evidence from Asian, European and U.S.-capital markets. Working Paper, University of St. Gallen, Swiss Institute of Banking and Finance.

Getzmann, A, Lang, S, & Spremann, K (2010). Determinants of the target capital structure and adjustment speed – evidence from Asian capital markets. In European Financial Management Symposium. Beijing.

Giudici, G and Paleari, S (2000). The provision of finance to innovation: a survey conducted among Italian technology based firms. *Small Business Economics* 14(1), pp.37–53.

Glen J and Pinto B (1995). Capital markets and developing country firms. *Finance and Development* 32 (1), 40-43.

Gordon, Roger H and A. Lans Bovenberg (1996), “Why is Capital So Immobile Internationally? Possible Explanations and Implications for Capital Income Taxation,” *American Economic Review* 86, December, 1057-75.

Gomes, A and Philips. G (2007). Why do public firms issue private securities. NBER Working Paper No. 11294.

Graham, John R, and Campbell R Harvey (2001). The theory and practice of corporate finance: Evidence from the field. *Journal of Financial Economics* 60, 187–243.

Greene, W (2008). *Econometric Analysis*, 6th ed. Prentice-Hall, Upper Saddle River, NJ.

Grossman, S.J and Hart.O (1982). Corporate financial structure and managerial incentives, in McCall, J. (ed), *the Economics of Information and Uncertainty*, University of Chicago press, Chicago, IL.

Gryglewicz.S (2011). A theory of corporate financial decision with liquidity and solvency concerns. *Journal of Financial Economics* 99, 365-384.

Guney Y, Antoniou A, Paudyal K (2008). Determinants of capital structure: Capital market oriented versus bank oriented institutions. *Journal of Financial and Quantitative Analysis* 43, 59-92.

Guney, Y; Li, L and Fairchild, R (2011). The relationship between product market competition and capital structure in Chinese listed firms. *International Review of Financial Analysis* 20, 41-51.

Gungoraydinoglu.A and Oztekin.O (2011). Firm- and country-lever determinants of corporate leverage: Some new international evidence. *Journal of Corporate Finance* 17, 1457-1474.

Hall, G; Hutchinson, P and Michaelas, N (2000). Industry effects on the determinants of unquoted SMEs' capital structure, *The International Journal of the Economics of Business*, 7(3), pp. 297–312.

Harijono, H (2005). *Capital Structure Decisions of Australian Family Controlled Firms*. Monash University

Harris, M and Raviv. A (1991). The theory of Capital Structure. *Journal of Finance* 46, 297-355.

Harijono, Ariff. M and Tanewski.G (2004). The Impact of Family Control of Firms on Leverage: Australian Evidence (January 15, 2004). EFMA 2004 Basel Meetings Paper. Available at SSRN: <http://ssrn.com/abstract=487706>.

Hatzinikolaou, D, Katsimbris, G. M, & Noulas, A. G (2002). Inflation uncertainty and capital structure - Evidence from a pooled sample of the Dow-Jones industrial firms. *International Review of Economics & Finance* 11, 45-56.

Hasnan S (2000). Indonesia- corporate governance and finance in East Asia. Chapter I, II. Asian Development Bank, Manila.

Haugen, Robert A, & Baker, Nardin L (1996). Commonality in the determinants of expected stock returns. *Journal of Financial Economics* 41, 401–439.

- Hovakimian, A, Opler, T and Titman, S (2001). The debt-equity choice. *Journal of Financial and Quantitative Analysis* 36, 1–24.
- Hovakimian, A., G. Hovakimian and H. Tehranian (2004). Determinants of target capital structure: The case of dual debt and equity issues”. *Journal of Financial Economics*, 71: 517–40.
- Huang, S.G.H and F.M. Song (2002). The determinants of capital structure: Evidence from China, Working Paper, The University of Hong Kong.
- Hogan, T and Hutson, E (2005) ‘Capital structure in new technology-based firms: evidence from the Irish software sector’. *Global Finance Journal* 15(3), 369–387.
- Hogan. T and Hutson. E (2004). Capital Structure in new technology-based firms: evidence from the Irish software sector. University College Dublin. Centre for Financial markets working paper series.
- Hoshi, T, Kashyap, A, Scharfstein, D. (1990). The role of banks in reducing the costs of financial distress in Japan. *Journal of Financial Economy* 27(1), 67-88.
- Hovakimian, A; Kayhan, S and Titman (2012). Are corporate default probabilities consistent with the static tradeoff theory?" *Review of Financial Studies* 25(2), 315-340.
- Huang, R and Ritter. J R (2009). Testing theories of capital structure and estimating the speed of adjustment. *Journal of Financial and Quantitative Analysis* 44, 237–271.
- Huang, S.G.H and F.M. Song (2002). The determinants of capital structure: Evidence from China, Working Paper, The University of Hong Kong.
- Huang, Samuel G.H and Frank M. Song (2006). The Determinants of Capital Structure: Evidence from China. *China Economic Review* 17, 14-35.
- Hsiao, C (1986). Analysis of panel data (Cambridge University Press, Cambridge).
- Karadeniz, E; Kandir, S.Y and Balcilar, M and Onal, Y.B (2009). Determinants of capital structure evidence from Turkish Lodging companies. *International Journal of Contemporary Hospitality Management* 21(5), 594-609.
- Kayhan A and Titman S (2007). Firms’ Histories and Their Capital Structure. *Journal of Financial Economics* 83:1–32.
- Kjellman.A and Hansen.S (1995). Determinants of Capital structure: theory VS Practice. *Journal of Management* 11(2), 91-102.
- Kuo. H and Wang.L (2005). The Effect of the Degree of Internationalization of Capital Structure for Listed Multinational corporation in Taiwan during the Asian Financial Crisis. *Review of Pacific Basin Financial Markets and Policies* 8(3), 447-466.

- Korajczyk, R.A and A. Levy (2003), "Capital structure choice: Macroeconomic conditions and financial constraints", *Journal of Financial Economics* 68, 75-109.
- Jegadeesh, Narasimhan (2000). Long-term performance of seasoned equity offerings: Benchmark errors and biases in expectations. *Financial Management* 29, 5–30.
- Jensen, M (1986). Agency cost of free cash flow, corporate finance and takeovers. *American Economic Review Papers and Proceedings* 76, 323-329.
- Jensen. M (1989). Eclipse of the public Corporation. *Harvard Business Review* 67(5), 61-74.
- Jensen, M. C and W. H. Meckling (1976), Theory of the firm: managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3, 305-60.
- Jegadeesh N (2000) Long-term performance of seasoned equity offerings: Benchmark errors and biases in expectations, *Journal of Financial Management* 9, 5-30.
- Joeveer. K (2012). Firm, country and macroeconomic determinants of capital structure: Evidence from transition economies. *Journal of Comparative Economics*. Available at <http://dx.doi.org/10.1016/j.jce.2012.05.001>.
- Jong. A D; Kabir. R and Nguyen. T T (2008). Capital structure around the world: the roles of firm- and country-specific determinants. *Journal of Banking and Finance* 32, 1954-1969.
- Jung, K.Kim, Y and Stulz.R (1996). Timing, investment opportunities, managerial discretion, and the security issue decision. *Journal of Financial Economics* 42, 159-195.
- Karadeniz, E; Kandir S.Y; Balcilar M; Onal Y.B (2009). Determinants of capital structure: evidence from Turkish lodging companies. *International Journal of Contemporary Hospitality Management* 21(5), 594-609.
- Kjellman.A and Hansen. S (1995). Determinants of capital structure: Theory VS Practice. *Journal of management* 11(2), 91-102.
- Korajczyk, R.A; Lucas, D.J and McDonald, R.L (1991). The effect of information releases on the price and timing of equity issues. *Review of Financial Studies* 4, 685–708.
- Koch P and Shenoy C (1999). The Information Content of Dividend and Capital Structure Policies. *Finance Management* 28(4): 16-35.
- Kuo, H.C and Wang, L.H (2005).The effect of the Degree of Internationalization on Capital Structure for listed multinational corporations in Taiwan during the Asian financial Crisis. *Review of Pacific Basin Financial Markets and Policies* 8(3), 447-466.
- La Porta, R; Lopez-de-Silanes. F; Shleifer, A and Vishny, R (1998). Law and finance. *Journal of Political Economy* 106, 1113-1155.

La Porta R, Shleifer L S and Vishny R.W (2000). Investor protection and Corporate Governance. *Journal of Financial Economics* 58, 3-27.

Lambert. R.A and Levy, A (2003). Capital Structure choice: Macroeconomic conditions and financial constraints. *Journal of Financial Economics* 68, 75-109.

Lambert, R.A, Leuz, C and Verrecchia, R.E (2007). Accounting information, disclosure, and the cost of capital. *Journal of Account Research* 45, 385-332.

Lend, H.E and Pyle D.H (1977). Information Asymmetries, Financial Structure, and Financial Intermediation. *Journal of Finance* 32, 371-387.

Levine, R (1999). Law, finance, and economic growth? *Journal of Financial Intermediation* 8, 8–35.

Levine, R (2005). Finance and Growth: Theory and Evidence. *Handbook of Economic Growth*. The Netherlands: Elsevier.

Loayza, N.V (1997). The Economics of the Informal Sector: A Simple Model and Some Empirical Evidence from Latin America, Washington, D.C.: The World Bank, 20433.

Lombardo, D (2000). Is there a cost to poor institutions? Job Market Paper, October, Stanford University.

Lombardo. D and Pagano. M (2002). Law and Equity Markets: A Simple Model. Corporate Governance Regimes: Convergence and Diversity. Oxford University Press, Oxford, England.

Loughran, M and Ritter, J (1995). The new issue puzzle. *Journal of Finance* 50, 23-51.

Lucas, A; Dijk, R; Kloek,T (1997). Outlier robust GMM estimation of leverage determinants in linear dynamic panel data model. Working Paper, Tinbergen Institute, Erasmus University Rotterdam (pp. 1–49).

Mac Kay. P and Gordon M Phillips (2005). How Does Industry Affect Firm Financial Structure? *The Review of Financial Studies* 18, 1433-1466.

Mao C. X (2003). Interaction of debt agency problems and optimal capital structure: Theory and Evidence. *Journal of Financial and Quantitative Analysis* 38, 399-423.

MakY.T and Li.Y (2001). Determinants of corporate ownership and board structure: evidence from Singapore. *Journal of Corporate Finance* 7, 235-256.

Maksimovic, V; Stomper A and Zechner J (1999). Capital Structure, Information Acquisition and Investment Decisions in an Industry Framework. *European Finance Review* 2, 251-275.

Mallick, S. and Yang Y. (2011). Sources of financing, Profitability and Productivities: First Evidence from Matched firms. *Financial Markets, Institutions, & Instruments* 20, 221-252.

Mahajan, A and Tartaroglu.S (2008). Market to book ratio, equity market timing and capital structure: international evidence. *Journal of Banking and Finance* 32, 754-766.

Marsh, P (1982). The choice between equity and debt: An empirical study. *Journal of Finance* 32, 121-144.

Mazur, K (2007). The determinants of capital structure choice: Evidence from Polish companies. *International Advances in Economic Research* 13, 495-514.

Miao J (2005). Optimal Capital Structure and Industry Dynamics. *Journal of Finance American Finance Association* 60(6), 2621-2659.

Miglo, A (2010). Capital structure theory: where do we stand after crisis? University of Bridgeport working paper.

Minola. T and Cassia. L (2013). Financing Patterns in New Technology-based firms: an extension of the Pecking Order Theory. *International Journal of Entrepreneurship and Small Business* 19(2), 212-233.

Mishra. C S (2011). Determinants of capital structure- A study of manufacturing sector PSUs in India. *International Conference of Financial Management and Economics IPEDR*, vol 11.

Miao, J (2005). Optimal Capital Structure and Industry Dynamics. *Journal of Finance* 60, 2621-2659.

Michaelas, N; Chittenden, F and Poutziouris, P (1999). Financial Policy and Capital Structure Choice in UK SMEs: Empirical Evidence from Company Panel Data. *Small Business Economics* 12, 113-130.

Miller,M. H (1977). Debt and Taxes. *The Journal of Finance* 32(2), 495-514.

Miller, M. H (1988). The Modigliani-Miller Propositions after Thirty Years. *Journal of Economic Perspectives* 2, 99-120.

Miller, M.H and Rock, K (1985). Dividend policy under asymmetric information. *Journal of Finance* 1031-1051.

Mishra. C S (2011). Determinants of Capital structure – A Study of Manufacturing Sector PSUs in India. 2011 International Conference on Financial Management and Economics IPEDR 11. IACSIT Press Singapore.

Miglo, A (2010). The Pecking Order, Trade-Off, Signalling, and Market-Timing Theories of Capital Structure: a Review. *Social Science Research Network Working Paper Series*, 1-26.

Moe. E (2012). Structural Change, Vested Interests, and Scandinavian Energy Policy-Making: Why Wind Power Struggles in Norway and not in Denmark. *The Open Renewable Energy Journal* (5), 19-31.

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

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

Mooij. R A (2011). Tax Biases to Debt Finance: Assessing the Problem, findings solutions. International Monetary Fund Discussion Paper.

Mramor, D and Crnigoj, M (2009). Determinants of Capital Structure in Emerging European Economies: Evidence from Slovenian Firms. *Emerging Markets Finance and Trade*, 47(1), 72-89. <http://dx.doi.org/10.2753/REE1540-496X450105>.

Myers, S.C (1984). The capital structure puzzle. *Journal of Finance* 39, 575–592.

Myers, S.C and Majluf, N.S (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics* 13, 187–224.

Myers, S (1977). Determinants of Corporate Borrowing. *Journal of Financial Economics* 5, 147-175.

Myer, S.C (1984). The capital structure puzzle. *The Journal of Finance* 39 (3), 575-592.

Myer, S.C (2001). Capital structure. *Journal of Economic Perspectives* 15(2), 81-102.

Myers S.C and Majluf N (1984). Corporate Financing and Investment Decisions when Firms have information that investors do not have. *Journal of Financial Economics* 13, 187-221.

Myers, S. C and R. G. Rajan (1998). The Paradox of Liquidity. *Quarterly Journal of Economics* 113, 733–71.

Narayanan, M. P (1988). Debt versus equity under asymmetric information. *Journal of Financial and Quantitative Analysis* 23, 39-51.

Nadeem. A S and Zongjun Wang (2011). Determinants of capital structure: An empirical study of firms in manufacturing industry of Pakistan. *Managerial Finance* 37(2), 117-133.

Noam. E M (2006). Fundamental instability: Why telecom is becoming a cyclical and oligopolistic industry. *Information Economics and Policy* 18, 272-284.

Noulas A and Genimakis G (2011). The determinants of capital structure: Evidence from Greek listed companies. *Applied Financial economics* 21(6), 379-387.

- Nickell, S (1981). Biases in Dynamic Models with Fixed Effects. *Econometrics* (49), 1417-1426.
- Nivorozhkin, E (2002). Capital structures in emerging stock market: The case of Hungary. *The Developing Economies* 40 (2), 166-187.
- Noguera, J (2001). Inflation and Capital structure. *Journal of Finance* 50. Available at <https://iweb.cerge-ei.cz/pdf/wp/Wp180.pdf>.
- Patel S A and Sarkar. A (1998). Crises in developed and emerging stock markets. *Financial Analysts Journal* 54(6), 50-61.
- Pinkowitz. L; Stulz. R and Williamson. R (2006). Does the contribution of Corporate Cash Holding and Dividends to Firm Value Depend on Governance? A Cross-Country Analysis. *Journal of Finance* 61, 2725-51.
- Qiu, M and La, B (2010). Firm characteristics as determinants of capital structures in Australia. *International Journal of the Economics of Business* 17(3), 277-287.
- Rajan. R.G and Zingales. L (1998). Financial Dependence and Growth. *American Economic Review* 88, 559-586.
- Raghavan. M (2008). The impact of Asian Financial Crisis and the spillover effect on three Pacific-Basin Stock Markets---Malaysia, Singapore and Hong Kong. *Journal of Applied Finance* 14(5), 5-16.
- Razavi. H (1996). Financing Oil and Gas Projects in Developing Countries. *Finance & Development* June.
- Reimoo. Z (2008). Determinants of capital structure: Evidence from UK Panel Data. Master dissertation. University of Nottingham
- Reynolds, T and Flores, A (1989). *Foreign law: Current sources of codes and basic legislation in jurisdictions of the world* (1st ed). Littleton, CO: F.B. Rothman.
- Reynolds, T and Flores, A (2003). *Foreign law: Current sources of codes and basic legislation in jurisdictions of the world* (2nd ed). Littleton, CO: F.B. Rothman.
- Reynolds, T and Flores, A (1989). *Foreign law: Current sources of codes and basic legislation in jurisdictions of the world*. F.B. Rothman: Littleton, CO.
- Ribstein, L (2005). Cross-listing and regulatory competition. *Review of Law and Economics* 1: 1-50.
- Roberts, Michael R (2002). The Dynamics of Capital Structure: An empirical Analysis of a partially Observable System. Working Paper, Duke University, United States.

- Roodman, D (2009). A note on the Theme of Too Many Instruments. *Oxford Bulletin of Economics and Statistics* 71, 135-158.
- Roodman . D (2009). How to do etabond2: An introduction to difference and system GMM in Stata. *Stata Journal* 9(1), 86-136.
- Saeed. A (2007). The determinants of Capital Structure in Energy Sector. Blekinge Institute of Technology. School of Management.
- Scott J (1977). Bankruptcy, Secured Debt, and Optimal Capital Structure. *Journal of Finance* 32, 1-19.
- Serrasqueiro, Z., & Nunes, P. N. (2010). Determinants of capital structure: Comparison of empirical evidence from the use of different estimators. *International Journal of Applied Economics* 5(1), 14-29.
- Siegel, J (2005). Contingent Political Capital and International Alliances: Evidence from South Korea. Working Paper, Harvard Business School.
- Shirai, S (2001). Searching for new regulatory frameworks for the intermediate financial market structure in post-crisis Asia. *Asian Development Bank Institute working paper* 24, September.
- Shim. L (2014). Development of Asia-Pacific Corporate Bond and Securitisation Markets. Available at <http://www.bis.org/publ/bppdf/bispap63c.pdf>.
- Sharpe, S.A (1991). Credit Rationing, Concessionary lending and Debt Maturity. *Journal of Banking and Finance* 15, 581-604.
- Sheikh. N A and Wang (2011). Determinants of capital structure: An empirical study of firms in manufacturing industry of Pakistan. *Managerial Finance* 37(2), 117-133.
- Shyam-Sunder. L and Myers. S.C (1999). Testing static tradeoff against pecking order models of capital structure. *Journal of Financial Economics* 51, 219–244.
- Song Han-Suck (2005). Capital Structure Determinants: An Empirical Study of Swedish Companies. Working Paper (25), the Royal Institute of technology.
- Stulz, R.M; Jung, K and Kim.Y.C (1996). Timing investment opportunities, managerial discretion, and the security issue decision. *Journal of Financial Economics* 42, 159-189.
- Stulz R (1990). Managerial discretion and optimal financing policies. *Journal of Financial Economics* 26, 3-27.
- Suto, M (2003). Capital Structure and Investment Behaviour of Malaysian Firms in the 1990s: A Study of Corporate Governance Before the Crisis. *Corporate*

Governance 11, 25 – 39.

Rajan, Raghuram G and Luigi Zingales (1995). What Do We Know about Capital Structure? Some Evidence from International Data. *Journal of Finance* 50, 1421-1460.

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

Rozeff. M (1982). Growth, Beta and Agency Costs as Determinants of Dividend Payout Ratios. *Journal of Financial Research* 5, 249-259.

Ryen G.T; Vasconcellos G.M and Kish R.J (1997) Capital structure decisions: what have we learned? *Business Horizon* 40(5), 41-50.

Talberg. M; Winge, C; Frydenberg. S and Westgaard.S (2008). Capital Structure Across Industries. *International Journal of the Economics of Business* 15(2), 181-20.

Tanaka M (2005) Bank loans versus bond finance: implications for sovereign debtors. Working Paper of Bank of England.

Tarzijan, J (2007). Capital Structure and Entry Deterrence with Multiple Incumbents. *Journals of Economic Analysis & Policy: Topics in Economic Analysis & Policy* 7(1), 1-16.

Timan, S and Wessels, R (1988). The determinants of capital structure choice. *The Journal of Finance* 43(1), 1-19.

Torres-Reyna.O (2010). Panel Data Analysis fixed and random effects. University of Princeton

Ullah. F; North. D and Baldock. R (2011). The Impact of the Financial Crisis on the Financing and Growth of Technology-Based Small Firms in the United Kingdom. Working paper. The Robert Gordon University and Middlesex University.

Voularis. F; Asteriou. D and Agiomirgianakis. G (2010). Capital Structure, Asset Utilization, Profitability and Growth in the Greek Manufacturing sector. *Applied Economics* 34(11), 1379-1388.

Vaaler. P M; James. B E and Aguilera R V (2008). Risk and Capital structure in Asian Project Finance. *Asia Pacific Journal of Manage* 25, 25-80.

Verrecchia R.E (2001). Essays of Disclosure. *Journal of Account and Economics* 32, 97-180.

Viviani, J (2008). Capital structure determinants: an empirical study of French companies in the wine industry. *International Journal of Wine business Research* 20(2), 171-94.

- Vichitsarawong.T; Eng.L L and Meek.G K (2000) The impact of the Asian financial crisis on conservatism and timeliness of Earnings: Evidence from Hong Kong, Malaysia. *Singapore and Thailand Journal of International Financial Management and Accounting* 21(1), 32-61.
- Wald, J.K (1999). How firm characteristics affect capital structure: an international comparison. *The Journal of Finance Research* 22(2), 161-87.
- Walsh EJ and Ryan J (1997). Agency and tax explanations of security issuance decisions. *Journal of Business Finance Account* 24(7), 941 –59.
- Warner, J.B (1977). Bankruptcy costs: some evidence. *The Journal of Finance* 32(2), 337-47.
- Wheeler J R.C; Smith. D G.; Rivenson. H L and Reiter. K L (2000). Capital Structure Strategy in Health Care System. *Journal of Health Care* 26(4), 42-52.
- Wilson. K (2011). Financing high-growth firms: the role of angel investors. Organisation for Economic Co-operation and Development Paris.
- Williamson, O (1988). Corporate finance and corporate governance. *Journal of Finance* 43: 567–591.
- Wiwattanakantang, Yupana (1999). An empirical study on the determinants of the capital structure of Thai firms. *Pacific-Basin Finance Journal, Elsevier* 7(3-4), 371-403.
- Wong. P. K (2011). Angel investing in Singapore. NUS Business School.
- Wooldridge, J. M (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge,MA: MIT Press.
- Wu. L and Yue. H (2009). Corporate tax, capital structure, and the accessibility of bank loans: Evidence from China. *Journal of Banking and Finance* 33, 30-38.
- Xu. J (2012). Profitability and capital structure: Evidence from import penetration. *Journal of Financial Economics* 106, 427-446.
- Chau. Y; Cheng. C; Gu. Y and Lee.W (2009). Co-determination of capitalstructure and stock return-ALISREL approach an empirical test of Taiwan stock markets. *The Quarterly Review of Economics and finance* 50, 222–233.
- Yang. C., Lee.C.; Gu.Y.; Lee.Y (2010). Co-determination of capital structures and stock returns- A LISREL approach: An empirical test of Taiwan stock market. *The Quarterly Review of Economics and Finance* 50, 222-233.
- Yeh, C.C and Chi C.F (2009). The Co-Movement and Long-Run Relationship between Inflation and Stock Returns: Evidence from 12 OECD Countries. *Journal of Economics and Management* 5(2), 167-186.

Yeh. C (2011). An Empirical Study of the Relationship Between Technological Innovation, Product Mix and Operating Performance: The Case Study of WINTEK Corporation. MA, Taiwan: Graduate Institute of Management, Ching Yun University.

Yosha. O (1995). Information Disclosure costs and the choice of financing source. *Journal of Financial Intermediation* 4, 3-20.

Yoshitomi M and Shirai S (2001). Designing a financial market structure in post-crisis Asia : how to develop corporate bond markets”, *Asian Development Bank Institute working paper* 15, March.

Zwick, B (1977). The Market for Corporate Bonds. *Federal Reserve Bank of New York Quarterly Review* 2, 27-36.

Zhu . Y (2012). Determinants of long-term issuing decisions: An alternative approach.

