Faculty of Economics and Business

The Determinants of Capital Structure and Its Speed of Adjustment: An Optimal Capital Structure Case of ASEAN-5 Listed Companies

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THE DETERMINANTS OF CAPITAL STRUCTURE AND ITS SPEED OF ADJUSTMENT: AN OPTIMAL CAPITAL STRUCTURE CASE OF ASEAN-5 LISTED COMPANIES

Lewis Liew Teo Piaw

A thesis submitted

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Dedication

This thesis is dedicated to my father and mother for their faith, encouragement, and love, and also to my brother and sister and nephew who provided me with endless support.

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ABSTRACT

Following the outbreak of the Asian Financial Crisis 1997, the issue of overleveraged became important as several highly leveraged firms in ASEAN declared bankruptcy or were rescued by the governments while the financial institutions became preoccupied with the non-performing loans. The ASEAN countries soon realized the importance of sustaining future growth and development through resourceful financing and thereby have undergone several phases of financial reforms in the last decade to strengthen their capital market and financial market. In light of this development, it is of interest to inquire whether the reforms have successfully provided the firms with incentives and financing facilities to adopt an optimizing behavior in their financing mode.

In fact, there is only little understanding about whether ASEAN firms have learnt the pitfalls of excessive debt financing during the crisis and whether the firms have both incentive and ability to move towards their optimal capital structure in the aftermath of Asian Financial Crisis 1997. Hence, this study attempts to capture some of these unanswered questions by looking at how they have chosen and subsequently adjusted towards their optimal capital structure in the aftermath of the crisis. By applying panel data methods to a sample of firms from five ASEAN countries—Indonesia, Malaysia, Philippines, Singapore and Thailand for the period 2001-2010, a dynamic capital structure model is developed that links firm-macroeconomic-institutional characteristics. Besides, this study also considers the capital structure theories as complementary rather than mutually exclusive in formulating the optimal capital structure. The idea derives from prior findings which demonstrate that the capital structure is affected by the environment in which the firms are operating and that none of the traditional capital structure theories is conclusive but conditional upon the environment in which the firms operate.

Hence, the capital structure model developed should gain benefits from the organizational-environmental fit and also the synergy of various capital structure theories. This is crucial as a better estimation of the optimal capital structure will enhance the accuracy of the capital structure adjustment speed. Hence, this study contributes to the literature as it strives to identify what constitute organizational and environmental fit to the capital structure decision in ASEAN. The disclosure of the roles of these factors can further provide insights to the practitioners into the adaptation strategy and performance relationships. Besides, as the findings detect the adjustment behavior, it also provides reference basis for ASEAN governments to make related policy to develop and diversify the sources of funds in respective countries.

The results are conclusive in supporting the effects of country idiosyncrasies as the determinants of capital structure significantly diverge in terms of sign, magnitude of coefficient and/or significance level when firms are grouped by country. These results suggest that the institutional setting of each country does not only affect firms' capital structure but also creates the conditions to explain a differential effect of the common determinants of firms' capital structure. It is the fit between the firm's characteristics and the environmental factors that enable the firms to derive at the optimal capital structure. As different countries have their own set of institutional setting and macroeconomic environment, there is no universal set of capital structure strategy which is optimal for all firms but different strategies should be planned to fit with the environment.

The positive and statistically significant coefficient of lagged debt ratio in each country suggests that firms have a target optimal capital structure to which they partially adjust. It is to highlight that the relative smaller estimates of the speed of adjustment in these countries reveal that ASEAN firms have lower financing flexibility. This also reflects relative inefficiency of lending institutions and financial market compared to those in developed countries. As such, ASEAN firms face relatively large transaction costs when they borrow external funds, and this leads to higher agency costs between creditors and shareholders. Besides, it is also likely that after the outbreak of Asian Financial Crisis 1997, ASEAN firms have become more risk averse. When the cost of deviating from the optimal level is not large enough to motivate costly external capital market transactions, they began to favor internal financing over debt financing to safeguard them from any crisis. The findings also exhibit different rates of adjustment behavior when compared by country. Hence, it is the efforts of the countries to provide resourceful financing sources that would inculcate the motivation of the firms to adjust faster towards the optimal capital structure.

Faktor-faktor Penentu Struktur Modal dan Kelajuan Pelarasan Terhadap Struktur Modal Optimum: Satu Kes Di Kalangan Syarikat Awam Di ASEAN-5

ABSTRAK

Ekoran Krisis Kewangan Asia 1997, isu keberhutangan yang berlebihan di kalangan syarikat-syarikat tersenarai di ASEAN telah menarik tumpuan di mana sebilangan syarikat yang berleveraj tinggi telah diisytiharkan bankrup ataupun terpaksa diselamatkan oleh kerajaan masing-masing. Pada masa yang sama, institusi-institusi kewangan dilaporkan kemelut dengan tanggungan hutang lapuk yang tinggi. Maka, negara-negara ASEAN menyedari peri pentingnya mewujudkan sumber-sumber pembiayaan yang dapat menjaminkan pertumbuhan dan pembangunan masa depan. Justeru, pelbagai reformasi kewangan telah dilaksanakan sejak dekad yang lepas untuk memperkasakan pasaran modal dan pasaran kewangan. Dengan ini, adalah penting untuk menilai samada reformasi tersebut telah berjaya mewujudkan insentif dan kemudahan pembiayaan kepada syarikat-syarikat tersenarai agar mengamalkan gelagat yang menuju ke arah tahap struktur modal yang optimum.

Hakikatnya, pengetahuan adalah amat kurang tentang samada syarikat-syarikat tersenarai di ASEAN telah mempelajari dan memahami risiko pembiayaan hutang secara berlebihan dan samada syarikat-syarikat tersenarai di ASEAN mempunyai insentif dan keupayaan untuk melaraskan struktur modal ke tahap yang optimum selepas Krisis Kewangan Asia 1997. Maka, kajian ini bertujuan untuk menjawab soalan-soalan tersebut dengan mengkaji bagaimana syarikat-syarikat tersenarai di ASEAN menentukan struktur modal dan sejauh mana syarikat-syarikat tersebut mampu membuat pelarasan ke arah tahap struktur modal yang optimum. Dengan menggunakan sampel syarikat-syarikat tersenarai di ASEAN-5 - Indonesia,

Malaysia, Philippines, Singapura dan Thailand, data panel telah dibina dari tahun 2001-2010 dan satu model struktur modal dinamik yang menjalinkan interaksi firma-makroekonomi-institusi telah dibangunkan. Kajian ini mengambilkira teori-teori struktur modal sebagai pelengkap dan bukan saling bersandaran dalam formulasi struktur modal optimum. Idea ini tercetus dari hasil kajian lepas yang menunjukkan bahawa struktur modal syarikat dipengaruhi oleh persekitaran di mana syarikat tersebut beroperasi dan tiada satu teori struktur modal yang mampu memberikan penjelasan secara menyeluruh di mana teori-teori tersebut hanya dapat diapplikasikan dalam keadaan tertentu.

Oleh yang demikian, model struktur modal yang dibangunkan seharusnya dapat memanfaatkan "fit" di antara firma dan persekitaran serta memperolehi sinergi daripada teori-teori struktur modal. Ini adalah penting kerana pengukuran struktur modal optimum yang lebih tepat akan dapat menentukan kelajuan pelarasan ke arah struktur modal optimum dengan lebih tepat. Maka, kajian ini memberi sumbangan dari segi pengenalpastian "fit" di antara firma dan persekitaran dalam membuat keputusan struktur modal. Penemuan faktor-faktor ini mendedahkan hubungan faktor-faktor tersebut dengan pencapaian syarikat dan seterusnya membolehkan para pengurus kewangan mengatur strategi adaptasi untuk mencapai prestasi yang lebih cemerlang. Di samping itu, hasil kajian ini turut mengukur kelajuan pelarasan ke arah tahap struktur modal optimum bagi syarikat-syarikat tersenarai di ASEAN-5. Perbandingan kelajuan pelarasan di antara negara-negara ASEAN membolehkan kerajaan masing-masing membuat referens dan dijadikan sebagai asas dalam merangka polisi kerajaan untuk membangunkan dan mempelbagaikan sumber pembiayaan pada masa akan datang.

Keputusan kajian ini menyokong faktor negara sebagai penentu struktur modal di mana faktor-faktor penentu struktur modal yang dilaporkan di setiap negara adalah berlainan dari *segi tanda, nilai beta dan/atau tahap signifikan. Ini menunjukkan bahawa latar belakang institusi bukan sekadar mempengaruhi struktur modal syarikat tetapi mewujudkan situasi yang berlainan untuk menjelaskan mengapa faktor-faktor penentu struktur modal boleh mendatangkan kesan yang berlainan di bawah situasi yang berlainan. Hakikatnya, untuk mencapai struktur modal optimum, syarikat perlu mengecapi "fit" di antara ciri-cirinya dengan persekitaran di mana ia beroperasi. Ini menunjukkan kepentingan peranan yang dimainkan oleh faktor-faktor tersebut. Memandangkan setiap negara mempunyai latarbelakang institusi dan persekitaran makroekonomi yang tersendiri, maka tidak wujud satu strategi struktur modal universal yang optimum untuk semua syarikat. Sebaliknya, strategi yang berlainan seharusnya dirangka untuk mencapai "fit" dengan persekitaran.*

Nilai positif yang signifikan bagi "lagged" nisbah hutang di setiap negara menunjukkan bahawa syarikat-syarikat di ASEAN mempunyai sasaran tahap struktur modal yang optimum dan menunjukkan gelagat pelarasan ke arah mencapai tahap tersebut. Secara amnya, kelajuan pelarasan di ASEAN-5 adalah perlahan secara relatifnya berbanding dengan negara-negara maju. Ini menunjukkan bahawa syarikat-syarikat di ASEAN mempunyai sumber pembiayaan yang kurang fleksibel. Ia juga menandakan ketidakcekapan institusi kewangan dan pasaran kewangan berbanding dengan negara-negara maju. Dengan ini, syarikat-syarikat di ASEAN menghadapi kos transaksi yang lebih tinggi apabila memperolehi pembiayaan luaran dan ini turut meningkatkan kos agensi di antara kreditor dan pemegang saham. Di samping itu, syarikat-syarikat di ASEAN didapati lebih prihatin terhadap risiko selepas Krisis Kewangan Asia 1997. Apabila kos tersisih dari tahap struktur modal optimum adalah tidak cukup besar untuk memotivasikan pengurus kewangan memperolehi sumber pembiayaan luaran yang berkos tinggi, mereka cenderung menggunakan sumber pembiayaan dalaman untuk melindungi syarikat *daripada sebarang krisis. Hasil kajian turut menunjukkan kadar pelarasan yang berlainan di kalangan ASEAN-5. Maka, usaha kerajaan dalam mewujudkan pelbagai sumber pembiayaan memainkan peranan penting dalam memotivasikan dan membolehkan syarikat untuk membuat pelarasan yang lebih pantas ke arah tahap struktur modal optimum.*

Table of contents

List of tables

CHAPTER 1 INTRODUCTION

1.1 BACKGROUND OF STUDY

Capital structure refers to the way a firm finances its assets through some combination of equity and debt. It has become one of the most important strategic financial decisions as the value of a firm depends upon its capital structure for the following reasons. First, it affects the taxes imposed on the firm as interest payments are tax deductible. Second, it affects information costs, including the cost arising from financial distress or bankruptcy. And third, it influences management's operating and investment decisions. Hence, the configuration of financing mix may exert different impacts on firms as it results in different cost of funds and financial risk. Furthermore, the combination of different sources of funds may also lead to different degree of informational asymmetries and conflicts between manager and share holder or debt holder.

Although there are costs and benefits of employing debt financing, it is no doubt that debt financing has played both hero and villain in ASEAN-5 over the past centuries. As the hero, debt financing has ultimately contributed to the growth of the firms as it enabled the firms to implement expansionary and investment activities that otherwise might not be able to finance. On the other hand, debt financing has been reported to be one of the major factors for causing the Asian Financial Crisis 1997 or at least accelerating the deterioration as firms showed high degree of dependence on debt financing (Suto, 2003).

Following the outbreak of the Asian Financial Crisis 1997, several literature have highlighted the issues of excessive leverage or the Asian High Debt Model that caused the ASEAN firms for being vulnerable to the economic turmoil (Wade and Veneroso, 1998; Claessens, Djankov and Xu, 2000; Driffield and Pal, 2001, 2010). Prior to the Asian Financial

Crisis 1997, the macroeconomic fundamentals in ASEAN countries were fine. They had low inflation, budget surpluses and only small deficits while the foreign exchange reserves were stable or rising. Indeed, they were growing fast. Nevertheless, the governments undertook financial deregulation that removed or loosened the controls on companies' borrowings but at the same time failed to strengthen the banks' supervision. This had led to the Asian High Debt Model that became one of the major causes of the Asian Financial Crisis 1997 (Wade and Veneroso, 1998).

In the high-debt economies, firms had to use more of their gross profits to fulfill the obligation on interest charges. When there was a significant rise in interest rate, the firms were unable to meet the obligation by using the profits earned. As a result, it was recapitalized into debt. The situation worsened as the high real interest rate policy also depressed the aggregate demand. As a result, the cash inflows were further reduced and the indebtedness of the corporate sector accelerated (Wade and Veneroso, 1998). The issue of overleveraged became crucial as the higher the debt ratio in corporate sector, the higher the possibility that any depressive shock will cause illiquidity, default and bankruptcy. Following the Asian Financial Crisis 1997, not only the distressed firms were adversely affected but the financial institutions were preoccupied with non-performing loans (NPL) (Ariff et al., 2008). Millions of people were at risk of losing jobs and felt robbed of their lifetime savings and security. The situation was worsened as a substantial share of the debts were foreign debt and as the currencies depreciated, the fixed interest payments on the foreign debt rose in domestic currencies.

As firms that are being overleveraged would impair their value, it is vital for firms to determine the optimal capital structure, a combination of equity and debt that will maximize the value of the firm. Basically, the tax benefits of debt and control of free cash flow problem are argued to push firms to use more debt financing while bankruptcy costs and other agency problems cause firms with incentives to use less. However, how to determine the optimal capital structure have been a focal point and a topic of rigorous debate for a number of decades. Although classical capital structure theories (Trade-off Theory and Pecking Order Theory) do not unanimously agree on the existence of the optimal capital structure, there are evidences in support of whether a firm adjusts its capital structure round an optimal level. A survey made by Graham and Harvey (2001) shows that firm managers act in ways that are consistent with the Trade-off Theory where about 80% of the investigated firms claimed having a target range or a strict target level for their capital structure. In conjunction, Fama and French (2002) demonstrate the property of mean reversion of corporate capital structure. This is further supported by empirical findings that exhibit the behavior of firms in adjusting their capital structure towards a target level (De Miguel and Pindado, 2001; Banerjee, Heshmati and Wihlborg, 2004; Leary and Roberts, 2005; Nivorozhkin, 2005; De Haas and Peeters, 2006; Drobetz and Wanzenried, 2006; Flannery and Rangan, 2006; Kim, Heshmati and Aoun, 2006; Drobetz, Pensa and Wanzenried, 2007; Kayhan and Titman, 2007; Ariff, Taufiq and Shamsher, 2008; Huang and Ritter, 2009; Qian, Tian and Wirjanto, 2009; Mukherjee and Mahakud, 2010).

However, while the general consensus of the literature is that companies tend to have optimal capital structure, there is no consensus on the determinants of the capital structure. Although numerous firm characteristics have been proposed by the traditional capital structure theories as determinants of capital structure, the issue on which factors are reliably important is still unanswered. Indeed, only few of them present consistent results when the study is carried out across the countries. It is to note that the capital structure studies in the early age focused on firm characteristics in a single country when investigating the determinants of capital structure. One of the reasons is the incompleteness of international databases. Most international databases do not contain enough cross-sectional or time-series data of firms in the world, especially data from the developing countries. Consequently, the lack of complete data has long been a serious obstacle to progress in international comparison of capital structure. This has prevented earlier studies from answering the effects of country idiosyncrasies on firm's capital structure and thereby has prevented earlier related studies from establishing more comprehensive conclusion and answering puzzles raised in capital structure across the countries.

Hence, a major drawback of the traditional capital structure theories relates to the extent that firms' financing decisions are driven by their own characteristics instead of the institutional and environmental factors. In addition, the theories are developed to explain the capital structure decision in western developed economies which may not necessarily portable to emerging economies. In view of this, cross countries comparisons are essential not only for the understanding of the difference in capital structure across the countries, but to advocate for the development of new approaches to unveil the actual factors affecting the capital structure.

In accordance with the advancement and availability of international database since the 90's, empirical studies have started to develop cross countries capital structure comparison in order to provide a more comprehensive insight into the financing decision. It is crucial to note that different countries have different institutional settings in terms of legal codes and enforcement, the corporate governance measures and the infrastructure of the financial and capital market. There are also variations in the level of economic development. This has added to the complexity of the financing decision as empirical findings show that the determinants of capital structure of firms vary across the countries (Rajan and Zingales, 1995; Wald, 1999; Fan,