CAPITAL STRUCTURES OF LISTED FIRMS IN ASEAN

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ABSTRACT

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The objective of this dissertation is to study the firm-, industry-, and country-level factors influencing the capital structures of the listed firms in ASEAN. The 3,750 samples are collected annually for 12 years from 2000 to 2011, resulting in 45,000 firm-year observations. The pooled ordinary least squared regression is used in the analysis for all combined three-level features. The leverage measures cover various proxies of capital structures. The evidence shows that firm size and tangibility are significantly and positively related to leverage, while profitability, growth opportunity, non-debt tax shield, liquidity, and interest rate are significantly and negatively related to leverage, consistent with theories and prior studies. However, business risk is insignificantly related to leverage. Munificence as an industry-specific factor is significantly and negatively related to market-based leverage ratios, while dynamism of an industry is significantly and negatively related to long-term debt book leverage. However, the Herfindahl-Hirschman index is significantly and negatively related to seven of eight leverage ratios, consistent with prior study. All five country-specific factors are significantly related to total debt book leverage and long-term liabilities market leverage. Only inflation rate as a country-specific attribute is significantly and positively related to all leverage ratios. Moreover, there are differences in the leverage across industries and countries. Overall, the impact of firm-specific factors on leverage ratios plays important role.

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ABBREVIATIONS AND SYMBOLS

Abbreviations	Equivalence
ASEAN5	I5 countries in the South East Asia i.e. Indonesia, Malaysia, the Philippines, Singapore and Thailand
ASEAN6	ASEAN5 plus Vietnam
LTD	Long-term debt
CE	Common Shareholder's equity
TE	Total shareholder's equity
MV	Market value or market capitalization
STD	Sort-term debt and current portion of long-term debt
TD	Total debt
TL	Total liabilities
TLTE	Total liabilities and shareholder's equity
TC	Total capital
TD_CE	Total debt % total common equity
TD_TC	Total debt % total capital
CL	Current liabilities (total)
MVTB	Market value to book value
TA	Total assets
TA_USD	Total assets in USD
LR	Leverage Ra tio
TA_lnUSD	Natural logarithm of total asset in USD
NS	Net sales or revenues
NS_USD	Net sales or revenues in USD
NS_lnUSD	Natural logarithm of net sales or revenues in USD

EBIT	Earnings before interest and taxes
INT	Interest expense of debt
PPE	Property, plant and equipment (net)
DD	Depreciation and depletion (cash flow)
DDA	Depreciation, depletion and amortization
CA	Total current assets
ROA	Return of asset
SDROA	Standard deviation of return of asset
TLCL	Total liabilities less total current liabilities
LN	Natural logarithm
LR	Leverage ratio or debt ratio
LR(LTD)B	Book value of leverage ratio in term long-term debt
LR(LTD)M	Market value of leverage ratio in term long-term debt
LR(TD)B	Book value of leverage ratio in term total debt
LR(TD)M	Market value of leverage ratio in term total debt
LR(TLCL)B	Book value of leverage ratio in term total liabilities less total current asset
LR(TLCL)M	Market value of leverage ratio in term total liabilities less total current asset
LR(TL)B	Book value of leverage ratio in term total liabilities
LR(TL)M	Market value of leverage ratio in term total liabilities
N	Number of observations
MUN	Munificence of an industry
DYN	Dynamic or dynamism of an industry

HHI	Herfindahl-Hirschman index of an industry
SMD1	Stock market development as market capitalization of listed firms (% of GDP)
SMD2	Stock market development as stocks traded, total value (% of GDP)
BANK	Bank development as domestic credit provided by banking sector (% of GDP)
GDP	GDP growth (annual %)
INF1	Inflation rate as Consumer Price
INF2	Inflation rate as GDP deflator
TAX	Total tax rate
SIZE1	Firm size as total assets
SIZE2	Firm size as net sales or revenues
PRO	Profitability
TAN	Tangibility of assets
GRO	Growth rate or growth opportunity
NDTS1	Non-debt tax shield as DD
NDTS2	Non-debt tax shield as DDA
LIQ	Liquidity
INTR	Cost of debt or interest rate
VOL	Volatility or business risk

SYMBOLS

$\overline{X}$	Mean
S.D.	Standard deviation

CHAPTER 1

INTRODUCTION

1.1 Statement and Significance of the Study

There are typical two types in which any business can raise money—debt or equity, sometimes it can be categorized as internal and external financing. The different choice of financing decision is critical issues for all firms, especially the long-term financing. The capital structure is defined as the source of firms' financing mix decisions, which leads to a firm's future investment opportunity. Generally, a firm raises funds from mixed sources i.e. debt, equity, and hybrid securities in order to generate its assets, operations, and future growth opportunity. Hence, capital structure decisions are one of the most interesting issues in corporate finance that can reflect to the maximization of the firm's value. Likewise, capital structure choices are related to the cost of capital and capital budgeting decisions. In the papers of Modigliani and Miller (1958), capital structure or the method of financing was basically shown to be irrelevant to the value of the firm under perfect market assumptions, then Modigliani and Miller (1963) argued that capital structure was relevant to firm value under taxation conditions. Subsequent researchers have relaxed assumptions such as bankruptcy costs, non-debt tax shields, agency costs, asymmetric information, and have introduced capital market frictions into the model. Seemingly, the main factors affecting capital structure decisions are related to these frictions.

Prior studies on capital structure mainly focused on the determinants of leverage at the firm level and country level across time (Booth et al., 2001; Antoniou et al., 2008; De Jong et al., 2008). However, the industry-level capital structure has hardly been mentioned in previous studies, especially in the ASEAN countries. Although the most of prior researches regarding capital structure include dummy variables representing different industries, only a few include variables that classify each industry attributes. Remmers (1974) showed that even though industry-level

variables are insignificant the U.S., the Netherlands and Norway, it is a matter for the leverage of Japan and France. Kester (1986) also found that Japanese firms in the heavy manufacturing sector have a greater book-value leverage than that of the U.S. companies. However, country-specific factors are possibly more important than industry-specific factors due to the influence of cultural difference (Sekely and Collins, 1988). The optimal capital structure mix has differed from industry to industry (Kim, 1997) and also from country to country (Wald, 1999).

Up to now, the study of industry classification affecting financial leverage has covered the data of developed countries; this paper, however, explores some of the evidence of the industry-based leverage effect in the ASEAN region. Following Kayo and Kimura (2011), the debt financing, measured by the market value leverage ratio among ASEAN countries, varies across countries. Table 1.1 shows that Singapore had the lowest leverage, followed by Malaysia, the Philippines, Thailand, and Indonesia, respectively. The range of average market leverage was 8.28% to 16.37%.

Table 1.1 Leverage Ratio (LR) by Country in ASEAN during 1997-2007

Country	Average LR (%)	S.D.	No. of Observations
Singapore	8.28	11.91	3,435
Malaysia	9.40	12.86	5,752
Philippines	11.01	12.30	3,526
Thailand	12.37	17.15	3,000
Indonesia	16.37	20.11	1,718

Source: Kayo and Kimura, 2011: 360.

According to the leverage ratio of ASEAN for the years 2000-2011 in Table 1.2, Vietnam had the lowest financial leverage, followed by Singapore, the Philippines, Malaysia, Thailand, and Indonesia, respectively. The range of the average market leverage was 12.67% to 19.33%. These studies highlight that there are different leverage ratios in at the country level, and therefore country factors and even cultural differences may have a marked influence on capital structure.

Table 1.2 Leverage Ratio (LR) by Country in ASEAN during 2000-2011

Country	Average LR (%)	S.D.	No. of Observations
Vietnam	12.67	20.69	2,758
Singapore	13.27	18.87	6,238
Philippines	13.85	22.52	2,362
Malaysia	16.05	20.48	8,717
Thailand	17.99	24.47	5,029
Indonesia	19.33	26.27	3,821

Source: Research Data

Considering the industry level, for instance, there are eight main industry sectors as per the Stock Exchange of Thailand's announcement; the debt-to-equity ratios by industry illustrated the same patterns for three years. Obviously, the ratio of Thai-listed firms in the financial sector was much higher than the other seven sectors.

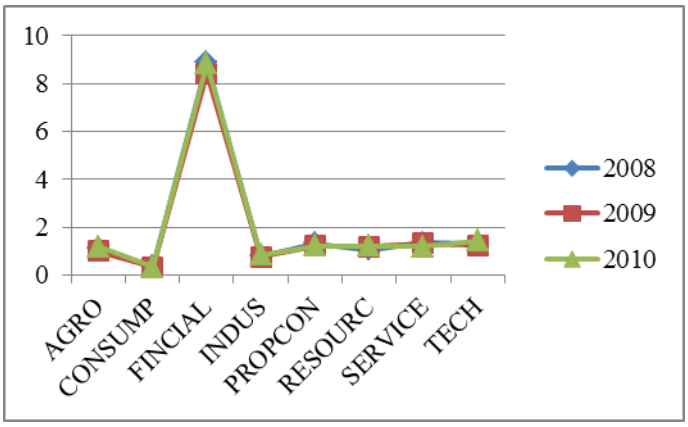

Figure 1.1 Leverage Ratio of Thai Firms by Industry

Without the financial sector, the consumption sector has the lowest debt-to-equity ratio among the seven non-financial sectors; however the property and construction sector, and the technology sector, have high debt-to-equity ratios.

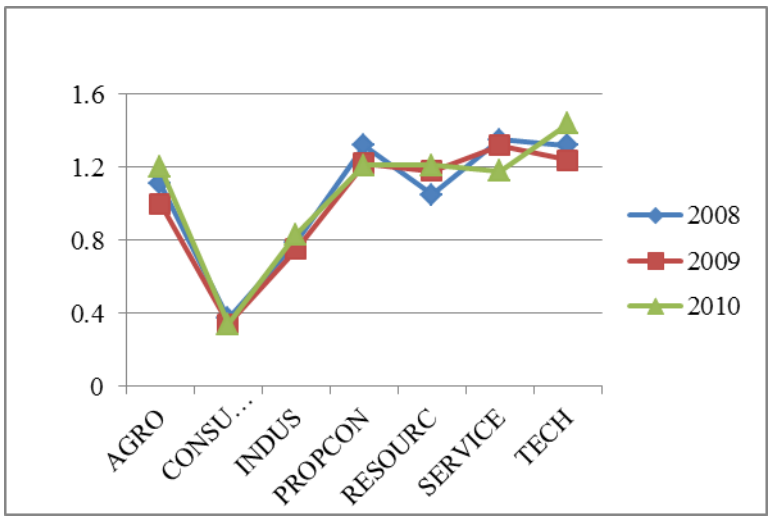

Figure 1.2 Leverage Ratio of Thai Firms by Industry without the Financial Sector

Nevertheless, the study on capital structure for the industry level in ASEAN has not been mentioned very much, so this study builds on earlier papers with the further discussion of the influences of firm-level, industry-level, and country-level determinants of capital structures in ASEAN.

1.2 Research Question

How do firm-, industry- and country-level factors matter in ASEAN's capital structures?

1.3 Objective of the Study

The paper compares and makes an effort to understand the capital structures alternatives made by the ASEAN countries; namely, Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam. Specifically, the goals for the paper are to evaluate the relative importance of the level of firm, industry and country on firm leverage and to scrutinize the influence of the characteristics of firm, industry and country on firm leverage.

1.4 Expected Benefits of the Study

As few papers analyze the influence of industry-level factors in explaining the firm's financial leverage as compared to papers focusing on firm and country factors, this paper provides a deeper investigation of industry influence on a firm's capital structure in ASEAN data. Moreover, the leverage measures as proxies of capital structures are measured in various definitions for both book and market value.

1.5 Organization of the Study

The study proceeds as follows. Chapter 1 introduces the significance of the study, and the research question and objectives. Chapter 2 summaries the relevant theories and literature. Chapter 3 describes data, and the methodology of the study and hypotheses. Chapter 4 presents the statistical data and empirical results. Chapter 5 concludes the paper.

CHAPTER 2

LITERATURE REVIEW

2.1 Theoretical Review

A brief review of the capital structure theories that explain a firm's behavior in choosing its capital structure includes the trade-off theory, the pecking order theory, and the market timing theory, as follows:

2.1.1 Trade-Off Theory (TOT)

Kraus and Litzenberger (1973) proposed the static trade-off theory according to which firms balance the benefits and costs from their financing choices. Firms favor debt financing over equity issuing because of gains from the debt tax shield. There are also bankruptcy costs, the costs of financial distress for debt financing. The more debt that is employed, the greater is the financial distress; the higher debt ratio, the higher will be the probability of bankruptcy.

Another type of cost that can be weighed against the debt tax benefit is the agency cost. Jensen and Meckling (1976) pointed out that the managers of levered firms tend to transfer risk if the firms have a free cash flow. Particularly, they favor risky projects that benefit shareholders in the case of success, but create losses for bondholders in the case of failure. This means that managers try to transfer the firm's wealth from bondholders to shareholders by borrowing more debt and investing in riskier projects. Thus, rational bond investors prevent this overinvestment problem by demanding a risk premium and a higher interest payment as compensation for this behavior. This type of agency cost reduces the attractiveness for firms to issue debt. This is the risk-transferring hypothesis.

Myer (1977) proposed that managers of debt-financed firms have an incentive to skip the positive net present value or good projects if only bondholders receive the gains from these projects. This is the underinvestment hypothesis.

Jensen (1986) explained that leverage creates a disciplining effect. Specifically, managers are forced to generate enough cash flow to meet debt repayments, resulting in the decreased ability to invest in overinvested projects. Meanwhile, dividend payment, share repurchases, and interest payment represent a good signal to the market. This is the free cash flow hypothesis.

Although debt can lead to overinvestment and underinvestment problems and have an impact on agency conflicts, managers should consider both the agency costs of debt against the agency costs of equity.

2.1.2 Pecking Order Theory (POT)

This theory was first presented by Myers and Majluf (1984) and Myers (1984). It is based on asymmetric information between managers and outside investors, leading to adverse selection so that managers will issue new equity when the firm is overvalued only. Pecking order theory has no predictions about an optimal leverage ratio, but the firm's capital choice is the result of the firm's financing needs over time while minimizing the cost of adverse selection. Equity financing has the highest cost of adverse selection, followed by debt financing, and internal financing or retain earnings, respectively. Therefore a firm first employs internal funds to avoid asymmetric information and adverse selection problems; next a firm will use issuance of debt because of a fixed claim of debt; then issuance of hybrid securities are the way of financing, and issuance of equity is the last financing choice.

2.1.3 Market Timing Theory (MTT)

Baker and Wurgler (2002) proposed that firms issue equity when the stock market is perceived to be more favorable and market-to-book ratios are relative high. This is the so-called market timing effort. However, this theory has a constant impact on capital structures. They argue that neither the trade-off theory nor the pecking-order theory is consistent with the persistent negative effect of past market-to-book ratios on leverage.

2.2 Empirical Review

Harris and Raviv (1991) documented the determinants of capital structure decisions. Particularly, the relations between firm size, tangible assets, non-debt tax shields, investment opportunity, and leverage of a firm are positive. However, the relations between business risk or volatility, advertising expense, probability of bankruptcy, the uniqueness of the product, and leverage ratio are negative.

Generally, the studied factors as determinants should be related to capital structure theories, so they are assumed to proxy for the features that drive these theories. However, they are mostly firm-level factors only. The variables that are mostly used in the empirical capital structure literature according to two main capital structure theories are: trade-off and pecking order. Table 2.1 summarizes the relations between the selected capital structure factors and the leverage ratio in accordance with the theories. For the trade-off theory, the relations between firm size, profitability, tangibility, and leverage ratio are generally positive, whereas the relations between firm growth, business risk or volatility, and leverage are normally negative. In line with the pecking order theory, it generally predicts inverse relations between size, profitability, tangibility, volatility, and leverage ratio; but the prediction between growth opportunity and the leverage ratio is still unclear.

Table 2.1 Prediction of Capital Structure Theories

Variable	Trade-off theory (TOT)	Pecking order theory (POT)
Size	+	-
Profitability	+	-
Tangibility	+	-
Growth opportunity	-	+/-
Volatility	-	-

Source: Baker and Martin, 2011: 23.

Frank and Goyal (2009) discussed six main determinants of firm capital structure decisions. Specifically, the level of leverage increases with asset tangibility, firm size, inflation, and type of industry. In contrast, the level of leverage decreases with growth opportunity and profitability.

Table 2.2 exhibits a summary of the results of some selected prior research on each firm-specific variable of predicted signs as follows:

Table 2.2 Results of Predicted Signs from Selected Empirical Papers

Variable	+	-	+/-
Size	Sbeiti (2010), Frank and Goyal (2009), Kayhan and Timan (2007), Antoniou et al. (2005), Fan et al. (2003), Goyal et al. (2002), Rajan and Zingles (1995), Harris and Raviv (1991)	Titman and Wessel (1998)	
Profitability	Jensen et al. (1992)	Dincergok and Yalciner (2011), Sbeiti (2010), Frank and Goyal (2009), Kayhan and Timan (2007), Antoniou et al. (2005), Fan et al. (2003), Goyal et al. (2002),	

Table 2.2 (Continued)

Variable	+	-	+/-
		Shyam-Sunder and Myers (1999), Rajan and Zingles (1995), Kim and Sorensen (1986), Titman and Wessel (1998)	
Tangibility	Dincergok and Yalciner (2011), Frank and Goyal (2009), Kayhan and Timan (2007), Fan et al. (2003), Shyam-Sunder and Myers (1999), Rajan and Zingles (1995), Jensen et al. (1992), Harris and Raviv (1991), Jensen and Meckling (1976)	Sbeiti (2010), Goyal et al. (2002), Grossman and Hart (1982)	
Growth opportunity		Frank and Goyal (2009), Kayhan and Timan (2007), Fan et al. (2003), Goyal et al. (2002), Rajan and Zingles (1995), Kim and Sorensen	Sbeiti (2010),

Table 2.2 (Continued)

Variable	+	-	+/-
		(1986)	
Volatility	Kim and Sorensen (1986)	Shyam-Sunder and Myers (1999), Jensen et al. (1992), Harris and Raviv (1991)	
Taxes		Fan et al. (2003), Kim and Sorensen (1986)	

Literature reviews about intra-, and inter-industry capital structure are summarized as follows.

Filbeck et al. (1996) examined the intra-industry capital structure decisions and found week support for the hypothesis that firms make financial decisions based on following industry leaders. Additionally, Kim (2009) showed there are statistically significant industry-level differences in the leverage ratios for both book-value and market value measurements in the United States and Korea. On the other hand, there is little significant country-level difference in the construction and chemical industries in the market value leverage ratios.

Tse and Rodgers (2010) proposed that the firm in the manufacturing industry which has potential borrowing capacity should have a higher leverage ratio than firms in other industries because firms with greater borrowing capacity should borrow more to get the benefits from tax shields and lower costs of debt. However, the results showed no evidence from Chinese firms to support this hypothesis.

Kayo and Kimura (2011) investigated the multi-level of influence on firm leverage, or time, firm, industry, and country level. Like prior studies, firm size, tangibility, growth opportunity, profitability, and bankruptcy were indicated as firm-level variables. Additionally, three industry variables of capital structure determinants were munificence, dynamism, and the Herfindahl-Hirschman index (HH index). The

results indicated that the level of firm and time were the most important in explaining the variances of leverage; however, the interactions of the firm, industry, and country determinants of leverage showed the significant roles of all those factors.

Empirical literatures that study in Indonesia, Malaysia, the Philippines, Singapore, Thailand, Vietnam, other ASEAN countries, developing countries and developed countries are as follows.

Indonesia:

Harris et al. (1994) examined the effect of financial liberalization on the capital structure and investment decisions of Indonesian establishments by using panel data. The study tested whether financial reforms have had an impact on investment and on the allocation of credit for different types of firms. The findings showed that shifting from administrative toward market-based allocation of credit resulted in increased borrowing costs, mainly for smaller firms, but benefited firms by giving them broadened access to finance.

Malaysia:

Suhaila and Wan Mahmood (2008) investigated capital structure determinants for listed Malaysian firms by using pooled OLS regressions. The results showed that firm size, liquidity, and the interest coverage ratio had a significant negative impact on leverage, while growth had an insignificant negative impact on leverage choices.

Ali Ahmed and Hisham (2009) tested pecking order and static trade-off theories using Malaysian-listed firms. For the pecking order test, the internal fund deficiency was the most important factor that explained the issue of new debt with lower predicting power. For the static trade-off test, it was not fit to explain new debt issuance. Firms are not interested in tax-shield gains resulting from both debt and non-debt tax-shield. Moreover, firm size seemed to have an impact on capital structure choices, while asset structure and growth opportunity did not provide an explanation for capital structure decisions.

Ong and The (2011) inspected the relationship of capital structure and firm performance before and during the 2007 crisis for listed construction firms in Malaysia. The firms were divided into big, medium, and small sizes based on the

paid-up capital. The findings showed that there was a relationship between capital structure and firm performance, but no relationship between the studied variables was observed.

The Philippines:

Yu and Aquino (2009) examined capital structure theories, the trade-off model and the pecking order model, on Philippine-listed firms in order to explain financing behavior by applying panel data estimates. The findings showed better support for the pecking order model. Profitability was negatively related to leverage, while financing deficit mostly explained the annual change in total liabilities.

Singapore:

Deesomsak et al. **(**2004: 387-405) investigated the capital structure determinants of firms in the Asia Pacific region—Thailand, Malaysia, Singapore, and Australia—with different legal, financial, and institutional environments. The authors suggested that the capital structure decision of firms was influenced by the environment where they operate, and firm-specific factors—firm size, non-debt tax shield, liquidity, and share price performance—had a statistically significant effect on leverage ratios.

Thailand:

Yupana Wiwattanakantang (1999: 400) studied the capital structure determinants of non-financial Thai firms. The results showed that the tax effect, the signaling effect, and the agency costs played a role in financing choices. Ownership structure also affected financial policy. Single-family owned firms had significantly higher leverage, and large shareholders were negatively related to the debt level.

Namthip Hongpan (2000: 74) studied the determinants of the capital structure for non-financial companies listed on the Thai stock exchange. The results showed that agency cost played a more important role than tax benefits, indicating that non-debt tax shields do not affect the capital structure, while ownership structure and ownership concentration do. The higher level of ownership concentration, the lower will be the debt financing.

Bussarin Buranasakda (2002: 23) tested the pecking order theory using two-step methods for listed Thai data. The study showed that firms prefer debt to equity usage as external financing.

Rosjarek Kalpagonchai (2002: 56) studied the macroeconomic conditions and firm specific variables affecting the target capital structure of listed Thai firms using the two-stage, cross-sectional method. The results showed that the macroeconomic variables considerably affected the firm's capital structure.

Angkhana Thuwajaroenpanich (2002: 41) used Baker and Wurgler's (2002) model for explaining the relation between equity market timing and the changes in capital structure for listed Thai firms. The results showed that firms do not use equity market timing for external financing and that there was no relation between equity market timing and the changes in capital structure.

Krisadee Piyawattananon (2003: 48) studied the determinants of capital structure and the determinants of the speed of adjustment, focusing on only small- and medium-sized (SMEs) Thai manufacturers. Tangibility of assets, growth options, and firm size positively affected the firms' capital structure, while income variability and profitability were negatively related to capital structure. No optimal capital structure was found for SMEs; however, firms with growth prospects and that were of a large size showed a positive speed of adjustment.

Dhanawat Siriwantanakul (2003: 69) tested various capital structure theories—tax theory, bankruptcy cost theory, agency theory, and pecking order theory—between listed and non-listed matched firms. The results showed that there were different determinants of capital structure between them. The theories could not entirely explain higher leverage using of non-listed, matched firms relative to listed ones.

Varakorn Yingyoskumjoinchai (2003: 52) studied the determinants of Thai firms' capital structure using the fixed effect model. The factors positively affecting the firms' leverage ratios were default risk and firm size, while return on assets, return on equity, and growth opportunity were negatively relate to leverage ratio.

Rungsimun Ariyamongkol (2004: 28) studied the relation between stock market return to capital structure, adjustment toward target capital structure, and the longevity of readjustment toward the target capital structure using Thai-listed firm data. The results showed that firms cannot readjust their capital structure toward their

target in response to changes in the firms' market value. Furthermore, asset return was positively related to the tendency of rebounding toward target capital structure, while firm size was negatively related to the tendency of rebounding toward target capital structure.

Chalit Suknimitcharoen (2005: 35) studied the firm characteristics determining the target capital structure of the listed companies in three countries, Hong Kong, Japan, and Thailand. The results revealed that debt level and capital requirement affected the speed and change of the firm's capital structure.

Panniwat Neanchaleay (2006: 39) studied the determinants of the Thai firms' capital structure. It was found that the tax, investment inefficiency, firm size, and profitability did not determine capital structure, while the financial distress variable did.

Suchat Thirasisombat (2006: 45) studied the relation between capital structure and accruals. The results showed that capital structure was significantly and positively related to accruals and that the higher is debt financing, the higher the accruals will be. Moreover, the greater is the current ratio, market value, book-value to market value ratio, net income, and previous accruals, the better earning management is.

Somnuk Aujirapongpan et al. (2009: 835-837) studied the factors determining capital structure, which included short-term liabilities, long-term liabilities, and book-value of equities, of listed firms in Thailand by using multiple regression models. The time of the study was before and after the 1997 financial crisis. In terms of the impact on the long-term debt ratios, business growth had a positive relationship; profitability had a negative relationship in the periods before and after the crisis; the size of the firm had a positive relationship during the pre-crisis period; and the non-debt tax shield had a negative relationship during the post-crisis period. Regarding the impact on the short-term debt ratios, business growth had a positive relationship, while profitability and firm size had a negative relationship during both the pre- and post-crisis periods; and the non-debt tax shield had a positive relationship during the pre-crisis period.

Vietnam:

Nguyen and Ramachandran (2006) tested the determinants influencing the capital structure of small- and medium-sized enterprises (SMEs) in Vietnam. The empirical results showed that short-term debts were mostly employed. Firm ownership affected the manner of financing. Growth, business risk, firm size, networking, and bank relationship were positively related to capital structure decisions, while tangibility had a negative relation with them. Profitability seemed to have no significant impact on capital structure choices.

Biger et al. (2007) examined financing choices in Vietnamese enterprises. It mentioned only the firm-level data affecting to leverage. The firm size, managerial ownership, and growth opportunities had positive and significant relations with financial leverage ratios. On the other hands, profitability, non-debt tax shield, and tangibility of assets had negative and significant relations with financial leverage decisions. However, the corporate tax had a negative and weak significant relationship to leverage. Overall, the results are in consistent to the findings in other countries.

ASEAN:

Aggarwal (1990) reported the results of an empirical study on the capital structures of large Asian firms. Variations with regard to the country, industry, and size of the firm were tested for the first time for a large sample firms. The results indicated that firm size did not seem to be a significant influence, while both country and industry factors significantly influenced capital structure decisions.

Singh (2010) investigated the capital structure of main-listed firms from four selected ASEAN stock exchange index-links components. The study found that profitability and growth opportunities for all of the selected ASEAN countries were statistically significant and had an inverse relationship with leverage, while the non-debt tax shield had a significant negative impact on leverage mainly for Malaysia. Firm size showed a positive significant relationship for Indonesia and the Philippines. In the analysis of the country-effect factors, stock market capitalization and GDP growth rate showed a significant relationship with leverage, while bank size and inflation had insignificant impacts on leverage.

Developing Countries:

Sbeiti (2010) scrutinized the capital structure determinants of firms in three Gulf Corporation Council (GCC) countries and the impact of their stock market development on the financing decisions of firms operating in these markets. This study used the method of combining the dynamism of capital structure and the impact of stock market development on firms' financing choices. The results disclosed that their leverage ratio was below that found in developed countries. Particularly, the size of a firm was positively and significantly related to leverage ratios, while asset tangibility, liquidity, and profitability were negatively and significantly related to leverage ratios. Growth opportunity was positively related to book leverage, but negatively related to market leverage. However, tax considerations were less-important factors since the firms in the GCC countries are non-tax paying entities.

Dincergok and Yalciner (2011) studied the effect of both firm-related factors and macroeconomic variables on the capital structure decisions of manufacturing firms in four developing countries: Turkey, Brazil, Argentina, and Indonesia. For the panel data of the firm-specific analysis obtained country-by-country, profitability had a negative impact on leverage, while tangibility had a positive impact on long-term debt ratios. As to the results of pooled regression, interest rates and real GDP growth affected the total debt ratio negatively, while stock market development and public sector debt affected it positively.

Developed Countries:

Kjellman and Hansen (1995) tested listed firms in Finland and the results indicated that the existence of asymmetric information and corporate control provoked managers to follow a pecking order hierarchy in raising new funds. In addition, firm-specific variables were more important determinants of the firms' capital structure than tax motives and other macroeconomic factors of the country.

Bancel and Mittoo (2004) surveyed managers in European countries regarding capital structure determinants. The managers were concerned about financial flexibility, and earnings per share dilution from issuing debt and common stock. The country's legal environment was more important influence on debt financing than on common stock financing. The firms' financing policies were determined by both their

institutional environment and their international operations. Moreover, firms decide their optimal capital structures by trading-off costs and benefits of financing.

Antoniou et al. (2008) investigated both firms operating in the U.K. and in the U.S. as capital market-oriented economies, and firms operating in France, Germany, and Japan as bank-oriented economies regarding the influence of their capital structure choices. The paper used panel data and two-step, system-GMM techniques. Tangibility and firm size were positively related to leverage ratio, while an increase in firm profitability, growth opportunities, and share price performance in both economies were negatively related to leverage. Additionally, market conditions affected debt ratio. According to those authors, economic factors and institutions, corporate governance, taxation, borrower-lender relationship, exposure to capital markets, and level of investor protection have influences on capital structure decisions.

De Jong et al. (2008) examined the importance of firm-specific and country-specific factors in the leverage decisions of firms in various countries. The results showed that firm-specific determinants of leverage differed across countries, while previous studies implicitly assumed an equal impact of these determinants. Moreover, country-specific factors indirectly affected the capital structure of firms because country-specific factors already exert an influence on the roles of the firm-specific determinants of leverage.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Data

The samples in this dissertation are firms listed on the stock exchanges of the ASEAN: Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam.

Table 3.1 shows the names of the stock markets and the number of firms in each country. There is a main stock market in Indonesia, Malaysia, the Philippines, Singapore, Thailand, but not Vietnam. There are two main security exchanges in Vietnam, which are located in Hanoi and Ho Chi Min City. The total number of listed firms for Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam is 437, 941, 236, 740, 567 and 829 firms, respectively. It total, there are 3,750 listed firms in ASEAN.

Table 3.1 Number of Listed Firms by Country

Country [Code]	Stock Markets	No. of Listed Firms
Indonesia [101]	IDX: Indonesia Stock Exchange	437
Malaysia [102]	BM: Bursa Malaysia Berhad	941
Philippines [103]	PSE: Philippine Stock Exchange	236
Singapore [104]	SGX: Singapore Exchange Limited	740
Thailand [105]	SET: Stock Exchange of Thailand	567
Vietnam [106]	HNX: Hanoi Stock Exchange HOSE: Ho Chi Min Stock Exchange	829
	Total ASEAN	3,750

Note: Country Code Shown in Square Brackets

The samples were collected annually for 12 years from the year 2000 to 2011 resulting in 45,000 firm-year observations in the paper. The samples were obtained from Datastream. Table 3.2 reveals the total number of firm-year observations by country and industry. There were eleven categories of industry: Oil & Gas, Basic Materials, Industrials, Consumer Goods, Health Care, Consumer Services, Telecommunications, Utilities, Financials, Technology, and Unclassified.

Table 3.2 Number of Firm-year Observations by Industry and Country

Industry	**Country**						**Total**
[Code]	**Indonesia**	**Malaysia**	**Philippines**	**Singapore**	**Thailand**	**Vietnam**	
Oil & Gas	84	300	120	408	144	180	1,236
[10001]	(7)	(25)	(10)	(34)	(12)	(15)	(103)
Basic Materials	876	1,008	288	588	852	876	4,488
[10000]	(73)	(84)	(14)	(49)	(71)	(73)	(374)
Industrials	756	3,612	372	3,216	1,392	4,716	14,064
[20000]	(63)	(301)	(31)	(268)	(116)	(393)	(1,172)
Consumer Goods	984	2,316	300	1,368	1,260	1,320	7,548
[30000]	(82)	(193)	(25)	(114)	(105)	(11)	(629)
Health Care	144	276	24	252	228	252	1,176
[40000]	(12)	(23)	(2)	(21)	(19)	(21)	(98)
Consumer Services	708	816	312	888	792	540	4,056
[50000]	(59)	(68)	(26)	(74)	(66)	(45)	(338)
Telecommunications	96	144	48	60	72	36	456
[60000]	(8)	(12)	(4)	(5)	(6)	(3)	(38)
Utilities	24	156	156	96	84	408	924
[70000]	(2)	(13)	(13)	(8)	(7)	(34)	(77)
Financials	1,404	1,560	1,080	1,224	1,668	1,392	8,328
[80000]	(117)	(130)	(90)	(102)	(139)	(116)	(694)
Technology	168	1032	132	780	288	228	2,628
[90000]	(14)	(86)	(11)	(65)	(24)	(19)	(219)
Unclassified	-	72	-	-	24	-	96
[99999])	(0)	(6)	(0)	(0)	(24)	(0)	(8)
Total	5,244	11,292	2,832	8,880	6,804	9,948	45,000
	(437)	(941)	(236)	(740)	(567)	(829)	(3,750)

Note: Industry Code Shown in Square Brackets and Number of Firms Shown in Parentheses

For ASEAN, the number of firms was 1,172 for Industrials, 694 for Financials, 629 for Consumer Goods, 374 for Basic Materials, 338 for Consumer Services, 219 for Technology, 103 for Oil & Gas, 98 for Health Care, 77 for Utilities, 38 for Telecommunication, and 8 for Unclassified.

In this dissertation, the macroeconomic data were collected from the World Bank Data and KPMG International, Corporate and Indirect Tax Survey 2012 covering the years 2000 through 2011. A few firms provided uncompleted data. Nevertheless, firms in all industries were investigated to obtain descriptive statistics. For testing the effects with related models, firms with negative total equities and those in Utilities, Financials and Unclassified industries were not computed.

To detect possible outliers, the data for the numeric variables were converted to their standard score equivalents. Outliers are those cases associated with standard Z-score values. The plus/minus 3.29 Z-score was used to detect the outliers for each variable and then they were removed before putting them into the model.

According to Kayo and Kimura (2011), the dependent variable is the leverage that is a ratio of long-term debt to total firm value, where total firm value is measured in both book and market values. According to De Jong et al. (2008), the dependent variable is the leverage which is calculated by debt divided by the sum of debt and firm equity value.

The leverage is a proxy of capital structure, which is measured in four aspects: the long-term debt, total debt, long-term liabilities (total liabilities less total current liabilities), and total liabilities. In other words, leverage ratio is computed using many definitions, from narrow to boarder meanings. The firm equity value was measured in both book and market values. Entirely, there were eight definitions of leverage ratios in the study.

Table 3.3 shows the data of all related financial statement items obtained from Datastream databases.

Table 3.3 Data from Datastream Database

Data	Description	Datastream Code
LTD	Long-term debt	WC03251
CE	Common Shareholder's equity	WC03501
TE	Total shareholder's equity	WC03995
MV	Market value or market capitalization	WC08001
STD	Sort-term debt and current portion of long-term debt	WC03051
TD	Total debt	WC03255
TL	Total liabilities	WC03351
TLTE	Total liabilities and shareholder's equity	WC03999
TC	Total capital	WC03998
TD_CE	Total debt % total common equity	WC08231
TD_TC	Total debt % total capital	WC08221
CL	Current liabilities (total)	WC03101
MVTB	Market value to book value	MVTB
TA	Total assets	WC02999
NS	Net sales or revenues	WC01001
EBIT	Earnings before interest and taxes	WC18191
INT	Interest expense of debt	WC10251
PPE	Property, plant and equipment (net)	WC02501
DD	Depreciation and depletion (cash flow)	WC04049
DDA	Depreciation, depletion and amortization	WC01151
CA	Total current assets	WC02201

Table 3.4 demonstrates that the data of all related macroeconomic variables for each country were mostly obtained from the World Bank database. However, few data collected from the KPMG International, Corporate and Indirect Tax Survey 2012.

Table 3.4 Data from the World Bank Database

Data	World Bank Code	Name	Definition
SMD1	CM.MKT.LCAP.GD.ZS	Market capitalization of listed companies (% of GDP)	The share price times the number of shares outstanding as percentage of GDP. Domestic firms are listed on the country's stock exchanges at the end of the year. The investment companies, mutual funds, or other collective investment vehicles are excluded.
SMD2	CM.MKT.TRAD.GD.ZS	Stocks traded, total value (% of GDP)	The total value of shares traded during the period as percentage of GDP.
BANK	FS.AST.DOMS.GD.ZS	Domestic credit provided by banking sector (% of GDP)	All domestic credit to various sectors (on a gross basis) and credit to the central government (on a net basis) as percentage of GDP. The banking sector includes monetary authorities, deposit money banks, as well as other banking institutions e.g. savings and mortgage loan institutions, and building and loan associations.
GDP	NY.GDP.MKTP.KD.ZG	GDP growth (annual %)	Annual percentage growth rate of GDP at market prices based on local currency. GDP is the sum of total value of all goods and services produced by residents in the country's economy plus product taxes and minus subsidies not included in the products' value.
INF1	FP.CPI.TOTL.ZG	Inflation, consumer prices (annual %)	The consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services.
INF2	NY.GDP.DEFL.KD.ZG	Inflation, GDP deflator (annual %)	The annual growth rate of the GDP implicit deflator shows the rate of price change in the whole country's economy. The GDP implicit deflator is defined as the current GDP scaled by constant one in local currency.

Table 3.4 (Continued)

Data	World Bank Code	Name	Definition
TAX1	IC.TAX.TOTL.CP.ZS	Total tax rate (% of commercial profits)	The amount of taxes and mandatory contributions payable by businesses after accounting for allowable deductions and exemptions as a share of commercial profits. Taxes withheld e.g. personal income tax; or taxes collected and remitted to tax authorities e.g. value added taxes, sales taxes or goods and service taxes are not included.
TAX2[1]		Corporate income tax by country	Annual percentage corporate income tax of commercial profits.

3.2 Methodology

The paper applies the multiple regression analysis to investigate the relationships between leverage and overall predictors as typically used by most previous studies. However, the data structure in the paper is related to nested or hierarchical data.

According to the data feature, the leverage for each firm was collected twelve times and represented time-level data. Each firm was specified by a particular firm characteristic; this is called firm-level data. Similar firms are usually nested into a certain industry whose characteristic is identified as industry-level data. In addition, there was a variety of industries in one country so that industries under the same country were surely affected by a particular country's characteristic. This is called country-level data. Thus, these longitudinal data are suitable for multilevel or hierarchical or nested analysis as follows:

[1]KPMG International, Corporate and Indirect Tax Survey 2012

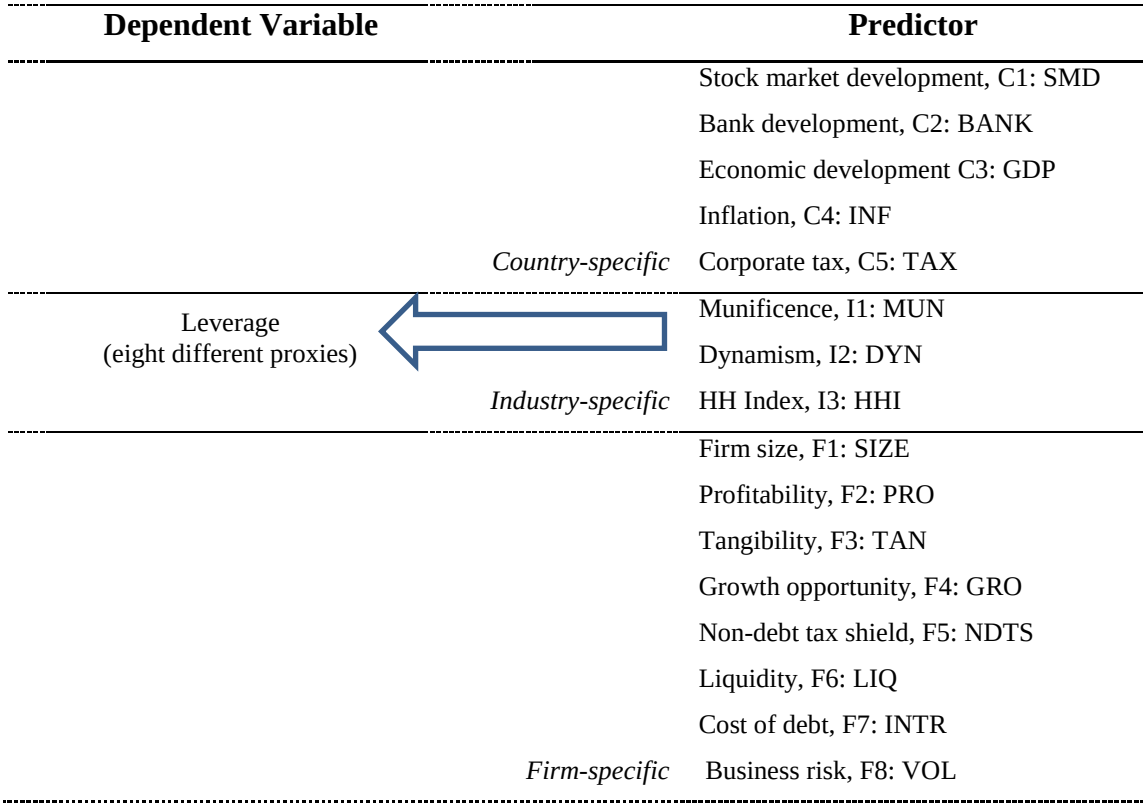

Figure 3.1 Framework of the Study

The hierarchical linear model (HLM) is a statistical technique of parameters that vary in more than one level because the predictors at each level are entered in order and then increments in the explained variance are estimated, while the ordinary least-squares regression model requires a certain set of predictors in a certain order or all of the predictors are pulled in the analysis.

The dependent variables or leverage ratios (LR) are measured by eight debt ratios definitions with regard to the narrow and wide meanings of leverage, for both book-value and market-value terms.

Y1 or LR(LTD)B is the book value of the leverage ratio in terms of long-term debt. It is defined as a ratio of long-term debt to total firm book value, where the total firm book value is the sum of long-term debt and firm equity book value. The formula is:

$$\text{Y1} = \text{LR(LTD)B} = \frac{\text{LTD}}{\text{LTD} + \text{net worth}} (\%)$$

Y2 or LR(LTD)M is market value of leverage ratio in terms of long-term debt. It is defined as a ratio of long-term debt to total firm market value, where the total firm market value is the sum of long-term debt and firm equity market value. The formula is:

$$Y2 = \text{LR(LTD)M} = \frac{\text{LTD}}{\text{LTD} + \text{equity market value}} (\%)$$

Y3 or LR(TD)B is the book value of the leverage ratio in terms of total debt. It is defined as the ratio of total debt to total firm book value, where the total firm book value is the sum of the total debt and firm equity book value. The formula is:

$$Y3 = \text{LR(TD)B} = \frac{\text{TD}}{\text{TD} + \text{net worth}} (\%)$$

Y4 or LR(TD)M is the market value of the leverage ratio in terms of total debt. It defined as the ratio of total debt to total firm market value, where the total firm market value is the sum of the total debt and firm equity market value. The formula is:

$$Y4 = \text{LR(TD)M} = \frac{\text{TD}}{\text{TD} + \text{equity market value}} (\%)$$

Y5 or LR(TLCL)B is the book value of the leverage ratio in terms of total liabilities less current liabilities. It is defined as the ratio of total liabilities less current liabilities to total firm book value, where the total firm book value is the sum of total liabilities less current liabilities and firm equity book value. The formula is:

$$Y5 = \text{LR(TLCL)B} = \frac{\text{TL} - \text{CL}}{\text{TL} - \text{CL} + \text{net worth}} (\%)$$

Y6 or LR(TLCL)M is the market value of the leverage ratio in terms of total liabilities less current liabilities. It is defined as the ratio of total liabilities less current liabilities to the total firm market value, where the total firm market value is the sum of total liabilities less current liabilities and firm equity market value. The formula is:

$$Y6 = LR(TLCL)M = \frac{TL - CL}{TL - CL + \text{equity market value}} (\%)$$

Y7 or LR(TL)B is the book value of the leverage ratio in terms of total liabilities. It is defined as the ratio of total liabilities to total firm book value, where the total firm book value is the sum of total liabilities and firm equity book value. The formula is:

$$Y7 = LR(TL)B = \frac{TL}{TL + \text{net worth}} (\%)$$

Y8 or LR(TL)M is the market value of the leverage ratio in terms of total liabilities. It is defined as the ratio of total liabilities to the total firm market value, where the total firm market value is the sum of total liabilities and firm equity market value. The formula is:

$$Y8 = LR(TL)M = \frac{TL}{TL + \text{equity market value}} (\%)$$

The predictors or explanatory variables are the determinants of financial choices considering firm-, industry-, and country-specific factors.

The firm-specific factors were adopted from previous research and included the following: firm size, business risk or volatility, profitability, tangibility, growth opportunity, non-debt tax shield, liquidity, and cost of debt.

F1 or SIZE is the firm size obtained by taking the natural logarithm of total assets in USD. The formula is:

$$F1 = SIZE = LN(TA\_USD)$$

F2 or PRO is profitability or return on assets (ROA). It is calculated by net income divided by total assets, where the net income is earnings before interest and tax (EBIT) deducting the interest expense of debt. The formula is:

$$F2 = PRO = \frac{EBIT - INT}{TA}$$

F3 or TAN is the tangibility of assets, which is defined as the net property, plant, and equipment scaled by total assets. The formula is:

$$F3 = TAN = \frac{PPE}{TA}$$

F4 or GRO is the growth rate or growth opportunity. It is measured by market value to book value. The formula is:

$$F4 = GRO = MVTB$$

F5 or NDTS is a non-debt tax shield. It is the non-debt tax shield (DD) divided by total assets (TA). The formula is:

$$F5 = NDTS = \frac{DD}{TA}$$

F6 or LIQ is liquidity which is defined as the ratio of current assets to current liabilities. The formula is:

$$F6 = LIQ = \frac{CA}{CL}$$

F7 or INTR is the cost of debt or interest rate. It is obtained by taking the interest expense of debt (INT) divided by the sum of short-term and long-term debt. The formula is:

$$F7 = INTR = \frac{INTR}{STD + LTD}$$

F8 or VOL is volatility or business risk, which is defined as standard deviation of its profitability (PRO) or return on assets (ROA) over the previous five years.

The industry-level factors were replicated from Kayo and Kimura (2011), who studied the multilevel determinant of capital structure in over 40 countries from the years 1997 to 2007. The variables explaining industry characteristics were munificence (I1: MUN), dynamism (I2: DYN) and the Herfindahl-Hirschman index (I3: HHI).

I1 or MUN is the munificence of an industry which is calculated by regressing time against the sales of an industry over a past given period (i.e. previous 5 years), then taking the ratio of the regression slope coefficient to its average sales.

I2 or DYN is the dynamic or dynamism of an industry, which is defined as the standard error of the munificence regression slope coefficient divided by its average sales.

I3 or HHI is the Herfindahl-Hirschman index calculated by the sum of the squares of markets shares of firms within an industry.

The country-level factors are stock market development, bank development, country growth or economic development, inflation, and corporate tax.

C1 or SMD is stock market development, which is defined as the ratio of market capitalization of listed firms to the gross domestic product (GDP). The formula is:

$$C1 = SMD = \frac{MktCap}{GDP}(\%)$$

C2 or BANK is bank development, which is defined as the ratio of domestic credit provided by the banking sector to GDP. The formula is:

$$C2 = BANK = \frac{BankCredit}{GDP}(\%)$$

C3 or GDP is country growth or economic development, which is obtained by the annual gross domestic product (GDP) growth rate. The formula is:

$$C3 = GDP\,growth\,(\%)$$

C4 or INF is inflation rate, which is measured using the consumer price index (CPI). The formula is:

$$C4 = CPI\ (\%)$$

C5 or TAX is corporate tax rate, which is measured by the ratio of total tax rate to commercial profit. The formula is:

$$C5 = TAX = \frac{total\,taxes}{commercial\ profits}(\%)$$

Table 3.5 Details of All Relevant Variables

Variable	Proxy/Operationalization	Symbol	Expected sign
Dependent variables:		LR	
Leverage ratios (book and market value)	$Y1 = LR(LTD)B = \frac{LTD}{LTD + CE}$ $Y2 = LR(LTD)M = \frac{LTD}{TLD + (MVTB * CE)}$ $Y3 = LR(TD)B = \frac{TD}{TD + CE}$ $Y4 = LR(TD)M = \frac{TD}{TD + (MVTB * CE)}$ $Y5 = LR(TLCL)B = \frac{(TL - CL)}{(TL - CL) + CE}$ $Y6 = LR(TLCL)M = \frac{(TL - CL)}{(TL - CL) + (MVTB * CE)}$ $Y7 = LR(TL)B = \frac{TL}{TL + TE}$ $Y8 = LR(TL)M = \frac{TL}{TL + (MVTB * TE)}$		
Independent variables:			
Firm-level factors:			
Firm size (F1)	Natural logarithm of total assets in USD currency = ln(total assets)	SIZE	+ (TOT) - (POT)
Profitability (F2)	Return on assets (ROA) = $\frac{EBT}{TA}$, where EBT= earnings before tax	PRO or ROA	+ (TOT) - (POT)
Tangibility (F3)	Tangible(fixed) assets-to-total assets ratio = $\frac{\text{tangible assets}}{\text{total assets}}$	TAN	+ (TOT), Jensen and Meckling (1976) - (POT) (Grossman and Hart 1982)
Growth opportunity (F4)	Market-to-book ratio or MVTB	GRO	- (TOT) +/- (POT)
Non-debt tax shield (F5)	Non-debt tax shield= $\frac{\text{depreciation}}{\text{total assets}}$	NDTS	-

Table 3.5 (Continued)

Variable	Proxy/Operationalization	Symbol	Expected sign
Liquidity (F6)	Current assets-to-current liabilities ratio	LIQ	-
Cost of debt (F7)	borrowing interest rate	INTR	-
Volatility or business risk (F8)	Standard deviation of its return on assets	VOL	- (TOT, POT)
Industry-level factors:			
Munificence (I1)	Regressing time against sales of an industry over a past given period, then taking a ratio of the regression slope coefficient to its average sales.	MUN	- (Kayo and Kimura 2011) for emerging country.
Dynamism(I2)	Standard error of the munificence regression slope coefficient divided by its average sales.	DYN	- (Kayo and Kimura 2011) for emerging country, but insignificant
Herfindahl-Hirschman index (HHI) (I3)	Herfindalhl-Hirschman index is calculated by the sum of the squares of markets shares of firms within a given industry.	HHI	- (Kayo and Kimura 2011) for emerging country.
Country-level factors:			
Stock market development (C1)	- Market capitalization ratio = $\frac{\text{mkt cap}}{\text{GDP}}$ - value traded ratio = $\frac{\text{value traded}}{\text{GDP}}$ - turnover ratio = $\frac{\text{value of total shares traded}}{\text{value of shares listed}}$	SMD	- (Giannetti 2003), + for developed capital market.

Table 3.5 (Continued)

Variable	Proxy/Operationalization	Symbol	Expected sign
Bank development (C2)	Bank claims on private sector/GDP	BANK	+ (Demirguc-Kunt and Makimovic 1999)
Country growth or economic development (C3)	Real GDP growth rate	GDP	+ (Booth et al. 2001, Fan et al. 2003)
Inflation (C4)	Inflation rate by consumer price index	INF	+/-, - (Homaifar et al. 1994)
Corporate tax (C5)	Tax rate	TAX	+

The study begins to investigate the all combined attributes affecting the leverage ratios with the multiple regression analysis. The equation of multiple linear regressions for firm-, industry- and country-level factors is:

$$LR_{i,t} = \alpha + \beta_1(F1)_{i,t} + \beta_2(F2)_{i,t} + \beta_3(F3)_{i,t} + \beta_4(F4)_{i,t} + \beta_5(F5)_{i,t} + \beta_6(F6)_{i,t} + \beta_7(F7)_{i,t} + \beta_8(F8)_{i,t} + \beta_9(I1)_{i,t} + \beta_{10}(I2)_{i,t} + \beta_{11}(I3)_{i,t} + \beta_{12}(C1)_{i,t} + \beta_{13}(C2)_{i,t} + \beta_{14}(C3)_{i,t} + \beta_{15}(C4)_{i,t} + \beta_{16}(C5)_{i,t} + \varepsilon_{i,t}$$

where $LR_{i,t}$ is leverage ratio of firm i year t.

$\beta_1 \dots \beta_8$ are regression coefficients for firm-specific variables.

$\beta_9 \dots \beta_{11}$ are regression coefficients for industry-specific variables.

$\beta_{12} \dots \beta_{16}$ are regression coefficients for country-specific variables.

$F_1 \dots F_8$ are the firm-specific variables (SIZE, PRO, TAN, GRO, NDTS, LIQ, INTR, VOL).

$I_1 \dots I_3$ are the industry-specific variables (MUN, DYN, HHI).

$C_1 \dots C_5$ are the country-specific variables (SMD, BANK, GDP, INF, TAX).

$\varepsilon_{i,t}$ is error term of firm i year t.

In order to test how those determinants of leverage ratios affected each different industry and country, relevant dummy variables were computed into the regression model.

$$\begin{aligned} LR_{i,t} = \alpha \quad & + \beta_1(F1)_{i,t} + \beta_2(F2)_{i,t} + \beta_3(F3)_{i,t} + \beta_4(F4)_{i,t} + \beta_5(F5)_{i,t} + \beta_6(F6)_{i,t} \\ & + \beta_7(F7)_{i,t} + \beta_8(F8)_{i,t} + \beta_9(I1)_{i,t} + \beta_{10}(I2)_{i,t} + \beta_{11}(I3)_{i,t} \\ & + \beta_{12}(C1)_{i,t} + \beta_{13}(C2)_{i,t} + \beta_{14}(C3)_{i,t} + \beta_{15}(C4)_{i,t} + \beta_{16}(C5)_{i,t} \\ & + \sum_{j=1}^{k-1} \beta_j(d\_ind_j) + \sum_{m=1}^{n-1} \beta_m(d\_ctry_m) + \varepsilon_{i,t} \end{aligned}$$

where; $LR_{i,t}$ is leverage ratio of firm i year t.

$\beta_1 \dots \beta_8$ are regression coefficients for firm-specific variables.

$\beta_9 \dots \beta_{11}$ are regression coefficients for industry-specific variables.

$\beta_{12} \dots \beta_{16}$ are regression coefficients for country-specific variables.

$\beta_j \dots \beta_{k-1}$ are regression coefficients for industry dummies.

$\beta_m \dots \beta_{n-1}$ are regression coefficients for country dummies.

$F_1 \dots F_8$ are the firm-specific variables (SIZE, PRO, TAN, GRO, NDTS, LIQ, INTR, VOL).

$I_1 \dots I_3$ are the industry-specific variables (MUN, DYN, HHI).

$C_1 \dots C_5$ are the country-specific variables (SMD, BANK, GDP, INF, TAX).

d_ind_j are dummy variables of industry j to k.

d_ctry_m are dummy variables of country m to n.

$\varepsilon_{i,t}$ is error term of firm i year t.

In the other hands, the data in the study can be considered as the hierarchical or nested data; therefore the multilevel determinants of capital structures are concerned. The appropriate dataset for the hierarchical linear model (HLM) are:

Level 1: Time-level data

IDCTRY	is the country code
IDCTRYIDIND	is the industry code
IDCTRY_IND_FIRM	is the firm code
LR	is the leverage ratio
TIME	is the number of collecting data

Level 2: Firm-level data

IDCTRY	is the country code
IDCTRYIDIND	is the industry code
IDCTRY_IND_FIRM	is the firm code
$F_1...F_8$	are the firm-specific variables (SIZE, PRO, TAN, GRO, NDTS, LIQ, INTR, VOL)

Level 3: Industry-level data

IDCTRY	is the country code
IDCTRYIDIND	is the industry code
$I_1...I_3$	are the industry-specific variables (MUN, DYN, HHI)

Level 4: Country-level data

IDCTRY	is the country code
$C_1...C_5$	are the country-specific variables (SMD, BANK, GDP, INF, TAX)

Nevertheless, there is inadequate or limited data of sample size in industry-level data of ASEAN context, only the full unconditional model and the simple model of HLM are computed so as to show the source of variance for this nested data.

3.3 Hypothesis

The hypotheses for individual factor of various levels affecting to leverage ratio are as follows:

H 1: Firm size (F1: SIZE)) has a positive relation to leverage ratio.

As firm size increases, it is easy for a larger firm to access debt financing, resulting in a higher leverage.

H 2: Profitability (F2: PRO) has a negative relation to leverage ratio.

If a firm can generate more profitability, the chance of bankruptcy decreases, and then a firm can increase its leverage in order to gain a tax benefit.

H 3: Tangibility (F3: TAN) has a positive relation to leverage ratio.

As tangible assets can be used as collateral, the more tangible assets a firm has, the higher the level of financing a firm acquires.

H 4: Growth rate (F4: GRO) has a negative relation to leverage ratio.

Firms with more growth opportunities have less leverage according to the trade-off theory.

H 5: Non-debt tax shield (F5: NDTS) has a negative relation to leverage ratio.

Firms with a larger amount of non-debt tax shield tend to use less leverage due to the tax benefit from their debt financing.

H 6: Liquidity (F6: LIQ) has a negative relation to leverage ratio.

Increase of firms' liquidity indicates higher ability to debt service; firms therefore tend to use fewer levels of debt.

H 7: Cost of debt (F7: INTR) has a negative relation to leverage ratio.

Certainly, firms with a high interest rate tend to use less debt according to the trade-off theory.

H 8: Business risk or volatility (F8: VOL) has a negative relation to leverage ratio.

Firms with higher volatility have a higher probability of bankruptcy, resulting in the use of less leverage.

H 9: Munificence (I1: MUN) has a negative relation to leverage ratio.

Munificence is the industry environment's capacity to support sustained growth. Hence, firms working in environments with high munificence or plentiful resources tend to have lower levels of debt, resulting from high profits generated.

H 10: Dynamism (I2: DYN) has a negative relation to leverage ratio.

As suggested in Kayo and Kimura (2011), firms working in more dynamic environments (industry dynamism) have smaller levels of debt.

H 11: The HH index (I3: HHI) has a negative relation to leverage ratio.

As a small index indicates a competitive industry, the lower the index is, those firms within the industry use more debt financing for business competition.

H 12: Stock market development (C1: SMD) has a negative relation to leverage ratio.

As stock markets are more developed and increase their efficiency, firms can easily access equity financing instead of debt financing, reflecting lower leverage of firms.

H 13: Banking development (C2: BANK) has a positive relation to leverage ratio.

As the banking sector provides more loans for domestic firms, the leverage of those firms increases.

H 14: Country growth rate (C3: GDP) has a positive relation to leverage ratio.

If the economic growth of a country increases, firms certainly will increase their levels of debt financing so as to expand their business opportunity.

H 15: Inflation rate (C4: INF) has a negative relation to leverage ratio.

As inflation rate increases, the debt financing of firms decreases due to the higher price of goods and services.

H 16: Corporate tax rate (C5: TAX) has a positive relation to leverage ratio.

If the corporate tax rate increases, a firm will borrow more in order to take advantage of tax benefits.

Table 3.6 Expected Sign of Relationship between Explanatory Variables and Leverage Ratio

Variable\Sign	**+**	**-**
Firm-level	Firm size, Tangibility**.**	Profitability, Growth rate, NTSD, Liquidity, Cost of debt, Business risk**.**
Industry-level		Munificence, Dynamism, HHI.
Country-level	Banking development, GDP growth rate, Corporate tax rate.	Stock market development**,** Inflation rate.

In addition, the interpretation of the group of country that provides similar specific feature, e.g. stock market development, domestic banking credit, may be required to further understand its capital structure in the ASEAN context.

CHAPTER 4

RESEARCH RESULTS

4.1 Descriptive Statistics

The paper measures the leverage ratios for long-term debt, total debt, total liabilities less current liabilities, and total liabilities. Moreover, the choice of using both book and market value is crucial; thus the measure of leverage based on equity market value was used rather than the book value of firm equity (Singh, 2010). Rajan and Zingales (1995: 1421-1460) specified that total debt can overstate the level of leverage since total debt includes account payables that may be used for transaction purposes rather than for financing. The descriptive statistics for each definition of leverage ratios for ASEAN are sample means, standard deviations, and observations.

Table 4.1 shows that the average leverage ratios in terms of long-term debt for ASEAN are 14.70% for the book value (Y1: LR(LTD)B) and 14.20% for the market value (Y2: LR(LTD)M) with a standard deviation of 21.35 and 20.27 respectively. For the book value, Singapore has the lowest leverage ratio with 12.61%, followed by Malaysia (12.96%), the Philippines (13.93%), Vietnam (15.39%), Thailand (15.83%), and Indonesia (21.60%), with a standard deviation in the range from 16.80 to 25.61. For market value, Singapore has the lowest leverage ratio at 11.61%, followed by Vietnam (13.07%), the Philippines (14.37%), Malaysia (14.52%), Thailand (14.75%), and Indonesia (18.70%), with a standard deviation in the range from 17.12 to 24.77. The country ranking of leverage ratio was consistent with the findings of Kayo and Kimura (2011), but inconsistent with those of Singh (2011). Moreover, the country ranking of each leverage definition was not different for either book or market value.

Table 4.1 Summary of Leverage (LTD) by ASEAN and Country (Y1, Y2)

Country	Y1: LR(LTD)B			Y2: LR(LTD)M		
	$\bar{X}$(%)	S.D.	N	$\bar{X}$(%)	S.D.	N
ASEAN	14.70	21.35	24218	14.20	20.27	22165
Indonesia	21.60	25.61	2781	18.70	24.77	2551
Malaysia	12.96	21.50	7436	14.52	19.11	7162
Philippines	13.93	20.70	1278	14.37	22.54	1206
Singapore	12.61	16.80	5671	11.61	17.12	5210
Thailand	15.83	23.16	4045	14.75	21.28	3756
Vietnam	15.39	20.57	3007	13.07	20.90	2280

Table 4.2 shows that the average leverage ratios in terms of total debt for ASEAN are 29.04% for Y3: LR(TD)B and 28.98% for Y4: LR(TD)M. For the book value, the Philippines has the lowest leverage ratio with 23.64%, followed by Malaysia (25.88%), Singapore (26.48%), Thailand (30.79%), Vietnam (35.19%), and Indonesia (35.99%), with a standard deviation in the range of 22.00 to 27.36. For market value of total debt, the Philippines has the lowest leverage ratio at 24.93%, followed by Singapore (25.89%), Malaysia (29.23%), Thailand (29.66%), Vietnam (32.25%), and Indonesia (32.78%), with a standard deviation in the range of 25.00 to 29.56.

Table 4.2 Summary of Leverage (TD) by ASEAN and Country (Y3, Y4)

Country	Y3: LR(TD)B			Y4: LR(TD)M		
	$\bar{X}$(%)	S.D.	N	$\bar{X}$(%)	S.D.	N
ASEAN	29.04	24.96	24221	28.98	27.07	21912
Indonesia	35.99	27.36	2781	32.78	29.56	2561
Malaysia	25.88	23.61	7436	29.23	26.27	7159
Philippines	23.64	25.43	1278	24.93	28.34	1210
Singapore	26.48	22.00	5671	25.89	25.00	5149
Thailand	30.79	26.22	4045	29.66	27.45	3750
Vietnam	35.19	26.46	3010	32.25	28.84	2083

Table 4.3 shows that the average leverage ratios in terms of total liabilities deducting current liabilities for ASEAN are 17.31% for Y5: LR(TLCL)B and 17.86% for Y6: LR(TLCL)M. Based on the book value, Singapore has the lowest leverage ratio with 14.87%, followed by Malaysia (15.71%), Vietnam (17.87%), Thailand (17.43%), the Philippines (18.28%), and Indonesia (25.32%), with a standard deviation in the range of 21.57 to 32.56. According to market value, Singapore has the lowest leverage ratio at 14.61%, followed by Thailand (17.37%), Vietnam (17.78%), Malaysia (18.02%), the Philippines (20.92%), and Indonesia (23.49%), with a standard deviation in the range of 20.08 to 27.89.

Table 4.3 Summary of Leverage (TLCL) by ASEAN and Country (Y5, Y6)

Country	**Y5: LR(TLCL)B**			**Y6: LR(TLCL)M**		
	$\bar{X}$**(%)**	**S.D.**	**N**	$\bar{X}$**(%)**	**S.D.**	**N**
ASEAN	17.31	24.19	24030	17.86	22.66	21676
Indonesia	25.32	32.56	2751	23.49	27.89	2490
Malaysia	15.71	21.81	7360	18.02	20.44	7062
Philippines	18.28	26.06	1249	20.92	26.89	1178
Singapore	14.87	22.94	5644	14.61	20.08	5156
Thailand	17.43	23.40	4015	17.37	23.36	3759
Vietnam	17.87	21.57	3011	17.78	23.47	2031

Table 4.4 shows that the average leverage ratios in terms of total liabilities for ASEAN are 44.55% for Y7: LR(TL)B and 43.33% for Y8: LR(TL)M. Based on the book value, the Philippines has the lowest leverage ratio at 38.47%, followed by Malaysia (39.49%), Thailand (44.37%), Singapore (44.73%), Indonesia (50.85%), and Vietnam (53.69%), with a standard deviation in the range of 21.10 to 27.20. According to the market value, the Philippines has the lowest leverage ratio at 37.66%, followed by Thailand (42.23%), Singapore (42.41%), Malaysia (42.47%), Indonesia (45.66%), and Vietnam (51.61%), with a standard deviation in the range of 24.48 to 30.47.

Table 4.4 Summary of Leverage (TL) by ASEAN and Country (Y7, Y8)

Country	Y7: LR(TL)B			Y8: LR(TL)M		
	$\bar{X}$(%)	S.D.	N	$\bar{X}$(%)	S.D.	N
ASEAN	44.55	23.30	24234	43.33	26.01	21625
Indonesia	50.85	27.20	2783	45.66	28.32	2529
Malaysia	39.49	21.10	7444	42.47	25.08	7119
Philippines	38.47	25.04	1278	37.66	30.47	1208
Singapore	44.73	21.64	5672	42.41	24.48	5112
Thailand	44.37	22.91	4046	42.23	25.52	3744
Vietnam	53.69	23.11	3011	51.61	26.12	1913

Table 4.5 provides the summary statistics for the predictor variables for all six countries in ASEAN. The average firm size in terms of natural logarithm total assets (F1: SIZE) of a firm is 11.0047. The average profitability (F2: PRO) of a firm is 0.0593. The average asset tangibility (F3: TAN) of a firm is 0.3483. The average growth opportunity (F4: GRO) of a firm is 3.5169. The average non-debt tax shield (F5: NDTS) of a firm is 0.0367. The average liquidity (F6: LIQ) of a firm is 2.9931. The average cost of debt (F7: INTR) of a firm is 0.1303. The average business risk or volatility (F8: VOL) of a firm is 0.0924.

For industry level, the average munificence of an industry (I1: MUN) in ASEAN is 0.1700. The average dynamism of an industry (I2: DYN) in ASEAN is 0.0317. The average Herfindahl-Hirschman index of an industry (I3: HHI) in ASEAN is 0.1149.

For country-level, the average stock market development (C1: SMD) of a country in ASEAN is 103.11%. The average bank development (C2: BANK) of a country in ASEAN is 100.54%. The average economic growth (C3: GDP) of a country in ASEAN is 5.30%. The average inflation rate (C4: INF) of a country in ASEAN is 3.98%. The average corporate tax rate (C5: TAX) of a country in ASEAN is 34.59%.

Table 4.5 Descriptive Statistics for the Independent Variables for ASEAN

Explanatory Variable	$\bar{X}$	S.D.	N	Minimum	Maximum
F1: SIZE	11.0047	1.6379	24190	5.1354	17.3306
F2: PRO	0.0593	0.2244	23906	-4.7145	20.2038
F3: TAN	0.3483	0.2247	24178	0.0000	0.9916
F4: GRO	3.5169	70.9152	21641	-184.0700	6421.6500
F5: NDTS	0.0367	0.0756	24063	-0.0179	10.5051
F6: LIQ	2.9931	9.1505	24012	0.0000	279.2458
F7: INTR	0.1303	0.8403	21036	-0.0584	38.0785
F8: VOL	0.0924	0.5865	19906	0.0000	43.3969
I1: MUN	0.17	0.1271	23581	-0.3644	0.7373
I2: DYN	0.0317	0.0233	23403	0.0029	0.1656
I3: HHI	0.1149	0.1108	24036	0.0000	0.6800
C1: SMD (%)	103.106	67.3668	24245	0.5459	256.3888
C2: BANK (%)	100.5417	33.7523	24245	36.5118	159.2113
C3: GDP (%)	5.3029	3.1306	24245	-2.3298	14.7632
C4: INF (%)	3.9775	3.6468	23738	-0.8539	18.6775
C5: TAX (%)	34.5854	5.485	17379	23.2000	49.1000

Table 4.6 provides the summary statistics for the predictor variables for Indonesia. The average firm size in terms of natural logarithm total assets (F1: SIZE) of a firm is 11.3103. The average profitability (F2: PRO) of a firm is 0.0590. The average asset tangibility (F3: TAN) of a firm is 0.3957. The average growth opportunity (F4: GRO) of a firm is 10.8428. The average non-debt tax shield (F5: NDTS) of a firm is 0.0434. The average liquidity (F6: LIQ) of a firm is 2.6709. The average cost of debt (F7: INTR) of a firm is 0.1960. The average business risk or volatility (F8: VOL) of a firm is 0.0895.

For the industry level of Indonesia, the average munificence of an industry (I1: MUN) is 0.1536. The average dynamism of an industry (I2: DYN) is 0.0292. The average Herfindahl-Hirschman index of an industry (I3: HHI) is 0.0828.

For Indonesia, the stock market development (C1: SMD) is 32.23%. The bank development (C2: BANK) is 43.67%.The economic growth (C3: GDP) is 5.44%. The inflation rate (C4: INF) is 7.74%. The corporate tax rate (C5: TAX) is 35.89%.

Table 4.6 Descriptive Statistics for the Independent Variables for Indonesia

Explanatory Variable	$\bar{X}$	S.D.	N	Minimum	Maximum
F1: SIZE	11.3103	1.7551	2781	5.1354	16.6352
F2: PRO	0.0590	0.2485	2724	-2.9491	9.2232
F3: TAN	0.3957	0.2406	2779	0.0000	0.9852
F4: GRO	10.8428	133.7803	2531	-51.1500	4044.4300
F5: NDTS	0.0434	0.0507	2757	0.0000	1.6136
F6: LIQ	2.6709	7.6448	2752	0.0245	247.3610
F7: INTR	0.1960	1.2894	2388	0.0000	31.4444
F8: VOL	0.0895	0.1266	2425	0.0003	1.5442
I1: MUN	0.1536	0.0997	2784	-0.3273	0.4648
I2: DYN	0.0292	0.0322	2775	0.0029	0.1607
I3: HHI	0.0828	0.1067	2779	0.0000	0.6427
C1: SMD (%)	32.2315	12.7415	2784	14.3385	50.9003
C2: BANK (%)	43.6689	7.2221	2784	36.5118	60.6768
C3: GDP (%)	5.4360	0.8125	2784	3.6435	6.4570
C4: INF (%)	7.7407	2.9887	2784	3.7200	13.1094
C5: TAX (%)	35.8891	2.4916	1880	32.2000	37.8000

Table 4.7 provides the summary statistics for the predictor variables of Malaysia. The average firm size in terms of natural logarithm total assets (F1: SIZE) of a firm is 11.1185. The average profitability (F2: PRO) of a firm is 0.0466. The average asset tangibility (F3: TAN) of a firm is 0.3670. The average growth opportunity (F4: GRO) of a firm is 1.2619. The average non-debt tax shield (F5: NDTS) of a firm is 0.0332. The average liquidity (F6: LIQ) of a firm is 3.3414. The average cost of debt (F7: INTR) of a firm is 0.1121. The average business risk or volatility (F8: VOL) of a firm is 0.0976.

For the industry level of Malaysia, the average munificence of an industry (I1: MUN) is 0.1334. The average dynamism of an industry (I2: DYN) is 0.0290. The average Herfindahl-Hirschman index of an industry (I3: HHI) is 0.0734.

For Malaysia, the stock market development (C1: SMD) is 136.74%. The bank development (C2: BANK) is 126.10%. The economic growth (C3: GDP) is 4.92%. The inflation rate (C4: INF) is 2.34%. The corporate tax rate (C5: TAX) is 34.87%.

Table 4.7 Descriptive Statistics for the Independent Variables for Malaysia

Explanatory Variable	$\bar{X}$	S.D.	N	Minimum	Maximum
F1: SIZE	11.1185	1.4562	7443	5.5342	17.1892
F2: PRO	0.0466	0.1454	7399	-3.8110	4.2501
F3: TAN	0.3670	0.2079	7436	0.0000	0.9670
F4: GRO	1.2619	1.9567	7121	-39.1600	59.1800
F5: NDTS	0.0332	0.1240	7425	0.0000	10.5051
F6: LIQ	3.3414	8.1803	7360	0.0133	252.7381
F7: INTR	0.1121	0.7034	6554	-0.0584	25.0000
F8: VOL	0.0976	0.9368	6313	0.0001	43.3969
I1: MUN	0.1334	0.0742	7445	-0.0925	0.3821
I2: DYN	0.0290	0.0218	7445	0.0033	0.1308
I3: HHI	0.0734	0.0456	7429	0.0283	0.5545
C1: SMD (%)	136.7446	23.9395	7445	80.9852	168.2566
C2: BANK (%)	126.1020	11.6171	7445	109.4287	146.5313
C3: GDP (%)	4.9164	2.6721	7445	-1.5134	8.8589
C4: INF (%)	2.3377	1.3558	7445	0.5833	5.4408
C5: TAX (%)	34.8662	0.9621	5051	33.7000	36.0000

Table 4.8 provides the summary statistics for the predictor variables of the Philippines. The average firm size in terms of natural logarithm total assets (F1: SIZE) of a firm is 11.0177. The average profitability (F2: PRO) of a firm is -0.0333. The average asset tangibility (F3: TAN) of a firm is 0.3865. The average growth opportunity (F4: GRO) of a firm is 17.9952. The average non-debt tax shield (F5: NDTS) of a firm is 0.0383. The average liquidity (F6: LIQ) of a firm is 7.7900. The average cost of debt (F7: INTR) of a firm is 0.1518. The average business risk or volatility (F8: VOL) of a firm is 0.1118.

For the industry level of the Philippines, the average munificence of an industry (I1: MUN) is 0.1240. The average dynamism of an industry (I2: DYN) is 0.0366. The average Herfindahl-Hirschman index of an industry (I3: HHI) is 0.2378.

For the Philippines, the stock market development (C1: SMD) is 50.46%. The bank development (C2: BANK) of is 51.23%.The economic growth (C3: GDP) is 4.68%. The inflation rate (C4: INF) is 4.62%. The corporate tax rate (C5: TAX) is 46.54%.

Table 4.8 Descriptive Statistics for the Independent Variables for the Philippines

Explanatory Variable	$\bar{X}$	S.D.	N	Minimum	Maximum
F1: SIZE	11.0177	1.9890	1269	5.1734	16.8177
F2: PRO	0.0333	0.1697	1210	-1.7279	0.8278
F3: TAN	0.3865	0.2617	1249	0.0000	0.9916
F4: GRO	17.9952	228.0894	1208	-25.3600	6421.6500
F5: NDTS	0.0383	0.0387	1259	0.0000	0.6054
F6: LIQ	7.7900	30.0858	1232	0.0000	279.2458
F7: INTR	0.1518	0.6665	924	0.0000	13.5676
F8: VOL	0.1118	0.4755	1104	0.0000	9.4315
I1: MUN	0.1240	0.1313	1278	-0.3644	0.4087
I2: DYN	0.0366	0.0233	1278	0.0029	0.1455
I3: HHI	0.2378	0.1136	1137	0.1186	0.6304
C1: SMD (%)	50.4646	17.4844	1278	28.0843	78.8221
C2: BANK (%)	51.2265	3.5598	1278	47.2467	58.3352
C3: GDP (%)	4.6822	1.7660	1278	1.1483	7.6323
C4: INF (%)	4.6222	1.6327	1278	2.2892	8.2604
C5: TAX (%)	46.5360	1.7418	819	43.8000	49.1000

Table 4.9 provides the summary statistics for the predictor variables of Singapore. The average firm size in terms of natural logarithm total assets (F1: SIZE) of a firm is 11.3641. The average profitability (F2: PRO) of a firm is 0.0540. The average asset tangibility (F3: TAN) of a firm is 0.2960. The average growth opportunity (F4: GRO) of a firm is 1.7774. The average non-debt tax shield (F5: NDTS) of a firm is 0.0343. The average liquidity (F6: LIQ) of a firm is 2.4940. The average cost of debt (F7: INTR) of a firm is 0.1091. The average business risk or volatility (F8: VOL) of a firm is 0.1111.

For the industry level of Singapore, the average munificence of an industry (I1: MUN) is 0.1815. The average dynamism of an industry (I2: DYN) is 0.0319. The average Herfindahl-Hirschman index of an industry (I3: HHI) is 0.1765.

For Singapore, the stock market development (C1: SMD) is 179.78%. The bank development (C2: BANK) is 79.42%.The economic growth (C3: GDP) is 6.08%. The inflation rate (C4: INF) is 2.18%. The corporate tax rate (C5: TAX) is 26.15%.

Table 4.9 Descriptive Statistics for the Independent Variables for Singapore

Explanatory Variable	$\bar{X}$	S.D.	N	Minimum	Maximum
F1: SIZE	11.3641	1.5638	5643	6.0228	17.3306
F2: PRO	0.0540	0.2445	5631	-4.7145	9.1970
F3: TAN	0.2960	0.2185	5657	0.0000	0.9803
F4: GRO	1.7774	5.1684	5115	-37.0900	221.1200
F5: NDTS	0.0343	0.0335	5669	-0.0179	0.7149
F6: LIQ	2.4940	3.5763	5645	0.0137	105.6296
F7: INTR	0.1091	0.7160	5083	0.0000	25.3333
F8: VOL	0.1111	0.3400	4682	0.0000	7.8052
I1: MUN	0.1815	0.1307	5462	-0.0917	0.6748
I2: DYN	0.0319	0.0202	5354	0.0029	0.1237
I3: HHI	0.1765	0.1534	5644	0.0490	0.6800
C1: SMD (%)	179.9825	50.9486	5672	107.9316	256.3888
C2: BANK (%)	79.4162	11.4733	5672	62.1309	97.1552
C3: GDP (%)	6.0826	4.6040	5672	-1.1544	14.7632
C4: INF (%)	2.1755	2.0842	5672	-0.3917	6.5186
C5: TAX (%)	26.1482	1.8273	3923	23.2000	27.9000

Table 4.10 provides the summary statistics for the predictor variables of Thailand. The average firm size in terms of natural logarithm total assets (F1: SIZE) of a firm is 11.1043. The average profitability (F2: PRO) of a firm is 0.0770. The average asset tangibility (F3: TAN) of a firm is 0.3940. The average growth opportunity (F4: GRO) of a firm is 1.6256. The average non-debt tax shield (F5: NDTS) of a firm is 0.0451. The average liquidity (F6: LIQ) of a firm is 2.4567. The average cost of debt (F7: INTR) of a firm is 0.1403. The average business risk or volatility (F8: VOL) of a firm is 0.0817.

For industry level of Thailand, the average munificence of an industry (I1: MUN) is 0.1324. The average dynamism of an industry (I2: DYN) is 0.0320. The average Herfindahl-Hirschman index of an industry (I3: HHI) is 0.1363.

For Thailand, the stock market development (C1: SMD) is 63.33%. The bank development (C2: BANK) is 131.93%.The economic growth (C3: GDP) is 3.96%. The inflation rate (C4: INF) is 2.78%. The corporate tax rate (C5: TAX) is 37.21%.

Table 4.10 Descriptive Statistics for the Independent Variables for Thailand

Explanatory Variable	$\bar{X}$	S.D.	N	Minimum	Maximum
F1: SIZE	11.1043	1.5332	4044	6.4928	17.3056
F2: PRO	0.0770	0.3455	3997	-2.3178	20.2038
F3: TAN	0.3940	0.2265	4046	0.0001	0.9822
F4: GRO	1.6256	5.7228	3745	-184.0700	204.7700
F5: NDTS	0.0451	0.0320	4023	0.0004	0.5168
F6: LIQ	2.4567	5.0906	4014	0.0124	175.4316
F7: INTR	0.1403	1.0711	3540	0.0000	38.0785
F8: VOL	0.0817	0.3622	3564	0.0001	9.2223
I1: MUN	0.1324	0.0861	4046	-0.2467	0.5608
I2: DYN	0.0320	0.0143	4038	0.0067	0.0988
I3: HHI	0.1363	0.0674	4038	0.0694	0.5049
C1: SMD (%)	63.3256	20.1172	4046	24.0283	87.0884
C2: BANK (%)	131.9327	12.7117	4046	108.9571	159.2113
C3: GDP (%)	3.9575	2.9769	4046	-2.3298	7.8105
C4: INF (%)	2.7813	1.7787	4046	-0.8539	5.4000
C5: TAX (%)	37.2057	0.2757	2688	36.9000	37.5000

Table 4.11 provides the summary statistics for the predictor variables of Vietnam. The average firm size in terms of natural logarithm total assets (F1: SIZE) of a firm is 9.6282. The average profitability (F2: PRO) of a firm is 0.0887. The average asset tangibility (F3: TAN) of a firm is 0.2796. The average growth opportunity (F4: GRO) of a firm is 1.4377. The average non-debt tax shield (F5: NDTS) of a firm is 0.0315. The average liquidity (F6: LIQ) of a firm is 2.1235. The average cost of debt (F7: INTR) of a firm is 0.1366. The average business risk or volatility (F8: VOL) of a firm is 0.0390.

For the industry level of Vietnam, the average munificence of an industry (I1: MUN) is 0.3518. The average dynamism of an industry (I2: DYN) is 0.0390. The average Herfindahl-Hirschman index of an industry (I3: HHI) is 0.0560.

For Vietnam, the stock market development (C1: SMD) is 16.70%. The bank development (C2: BANK) is 108.45%. The economic growth (C3: GDP) is 6.73%. The inflation rate (C4: INF) is 10.33%. The corporate tax rate (C5: TAX) is 38.69%.

Table 4.11 Descriptive Statistics for the Independent Variables for Vietnam

Explanatory Variable	$\bar{X}$	S.D.	N	Minimum	Maximum
F1: SIZE	9.6282	1.3399	3010	5.6486	14.5900
F2: PRO	0.0887	0.0911	2945	-0.8232	0.7312
F3: TAN	0.2796	0.2052	3011	0.0000	0.9464
F4: GRO	1.4377	1.4572	1921	0.0000	16.9600
F5: NDTS	0.0315	0.0344	2930	0.0000	0.3143
F6: LIQ	2.1235	3.2858	3009	0.0700	101.2255
F7: INTR	0.1366	0.4654	2547	0.0000	15.9000
F8: VOL	0.0390	0.0382	1818	0.0000	0.3987
I1: MUN	0.3518	0.1562	2566	-0.0526	0.7373
I2: DYN	0.0390	0.0306	2513	0.0102	0.1656
I3: HHI	0.0560	0.0726	3009	0.0169	0.3660
C1: SMD (%)	16.7013	6.7851	3020	0.5459	27.5176
C2: BANK (%)	108.4479	21.2953	3020	61.9284	135.7959
C3: GDP (%)	6.7338	1.1471	3020	5.3236	8.4563
C4: INF (%)	10.3316	4.4907	2513	7.0546	18.6775
C5: TAX (%)	38.6937	2.6687	3018	32.9000	40.0000

Table 4.12 compares the predictor variables among ASEAN. The average firm size (F1: SIZE) of Vietnam is the smallest (9.6282), while the firm sizes of other countries are not different from those of ASEAN (11.0047). The average profitability (F2: PRO) of ASEAN is 0.0593. The country that provides the highest profitability is Vietnam (0.0887), followed by Thailand (0.0770), Indonesia (0.0590), Singapore (0.0540), Malaysia (0.0466), and the Philippines (0.3333). The Indonesian firms have the highest average asset tangibility (F3: TAN) at 0.3957, while the Vietnamese firms have the lowest at 0.2796. However, the average tangibility of ASEAN is 0.0593. The growth opportunity (F4: GRO) of a firm in each country varied, ranging from 1.2619 (Malaysia) to 17.9952 (the Philippines). The non-debt tax shield (F5: NDTS) of a firm in each country is not different from ASEAN (0.0367), except Indonesia (0.0434) and Thailand (0.0451). The liquidity (F6: LIQ) of a firm in each country does not differ from ASEAN (2.9931), except the Philippines (7.7900). The cost of debt (F7: INTR) of a firm of each country is not the same, ranging from 0.1091 (Singapore) to 0.1960

(Indonesia). The Philippines has the highest business risk or volatility (F8: VOL) at 0.1118, while Vietnam has the lowest (0.0390).

For industry level, the munificence of an industry (I1: MUN) in each country varied, ranging from 0.1240 (the Philippines) to 0.3518 (Vietnam). The dynamism of the industry (I2: DYN) in each country does seem as on average as ASEAN (0.0317). The Herfindahl-Hirschman index of the industry (I3: HHI) in each country differed, ranging from 0.0560 (Vietnam) to 0.2378 (the Philippines).

For the country level of ASEAN, the stock market development (C1: SMD) of each country is different; Singapore has the highest at 179.98%, followed by Malaysia (136.74%), Thailand (63.33%), the Philippines (50.46%), Indonesia (32.23%), and Vietnam (16.70%). Thailand has the highest bank development (C2: BANK) at 131.93%, followed by Malaysia (126.10%), Vietnam (108.45%), Singapore (79.42%), the Philippines (51.23%), and Indonesia (43.67%). Vietnam has the highest economic growth (C3: GDP) at 6.73%, while Thailand has the lowest at 3.96%. The economic growth of remaining countries has been about the average growth of ASEAN (5.30%). Vietnam has the highest inflation rate (C4: INF) at 10.33%, followed by Indonesia (7.74%), the Philippines (4.62%), Thailand (2.78%), Malaysia (2.34%), and Singapore (2.18%). The Philippines has the highest corporate tax rate (C5: TAX) at 46.54%, followed by Vietnam (38.69%), Thailand (37.21%), Indonesia (35.89%), Malaysia (34.87%), and Singapore (26.15%).

Table 4.12 Summary of Average Predictors by ASEAN and Country

Explanatory Variable	ASEAN	Indonesia	Malaysia	Philippines.	Singapore	Thailand	Vietnam
F1: SIZE	11.0047	11.3103	11.1185	11.0177	11.3641	11.1043	9.6282
F2: PRO	0.0593	0.0590	0.0466	0.0333	0.0540	0.0770	0.0887
F3: TAN	0.3483	0.3957	0.3670	0.3865	0.2960	0.3940	0.2796
F4: GRO	3.5169	10.8428	1.2619	17.9952	1.7774	1.6256	1.4377
F5: NDTS	0.0367	0.0434	0.0332	0.0383	0.0343	0.0451	0.0315
F6: LIQ	2.9931	2.6709	3.3414	7.7900	2.4940	2.4567	2.1235
F7: INTR	0.1303	0.1960	0.1121	0.1518	0.1091	0.1403	0.1366
F8: VOL	0.0924	0.0895	0.0976	0.1118	0.1111	0.0817	0.0390
I1: MUN	0.1700	0.1536	0.1334	0.1240	0.1815	0.1324	0.3518
I2: DYN	0.0317	0.0292	0.0290	0.0366	0.0319	0.0320	0.0390

Table 4.12 (Continued)

Explanatory Variable	ASEAN	Indonesia	Malaysia	Philippines.	Singapore	Thailand	Vietnam
I3: HHI	0.1149	0.0828	0.0734	0.2378	0.1765	0.1363	0.0560
C1: SMD (%)	103.1060	32.2315	136.7446	50.4646	179.9825	63.3256	16.7013
C2: BANK (%)	100.5417	43.6689	126.1020	51.2265	79.4162	131.9327	108.4479
C3: GDP (%)	5.3029	5.4360	4.9164	4.6822	6.0826	3.9575	6.7338
C4: INF (%)	3.9775	7.7407	2.3377	4.6222	2.1755	2.7813	10.3316
C5: TAX (%)	34.5854	35.8891	34.8662	46.5360	26.1482	37.2057	38.6937

For comparing the different leverage measurements by country and industry, the line graphs of each definition of leverage ratios are showed as follows:

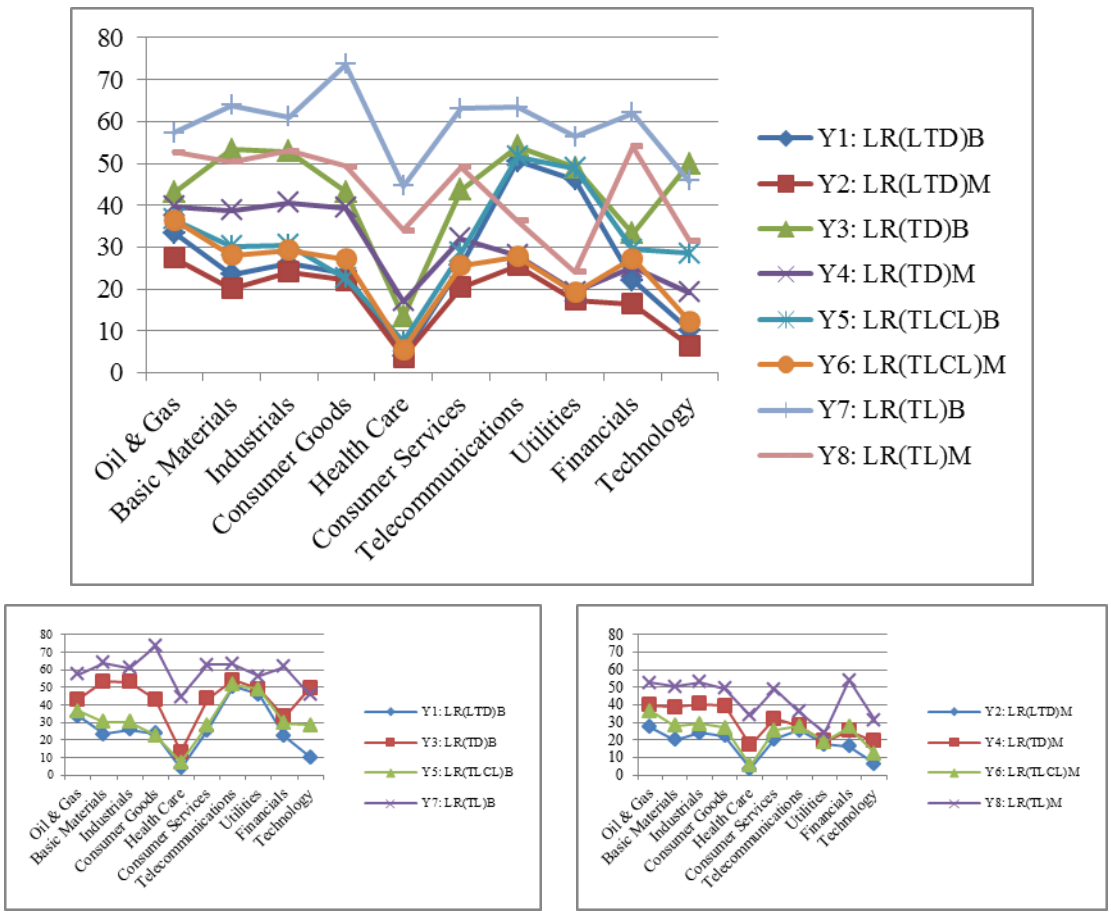

Figure 4.1 Leverage Ratios of Indonesia by Industry

Considering all of the leverage measurements in both the book and market value for each industry and country, Figure 4.1 illustrates eight definitions of leverage of Indonesian industry. It is clear that Y1: LR(LTD)B, Y2: LR(LTD)M, Y5: LR(TLCL)B and Y6: LR(TLCL)M of Indonesia have the same pattern line. Moreover, the Health Care and Technology industries in Indonesia have lower leverage ratios, while the remaining industries have higher leverage ratios.

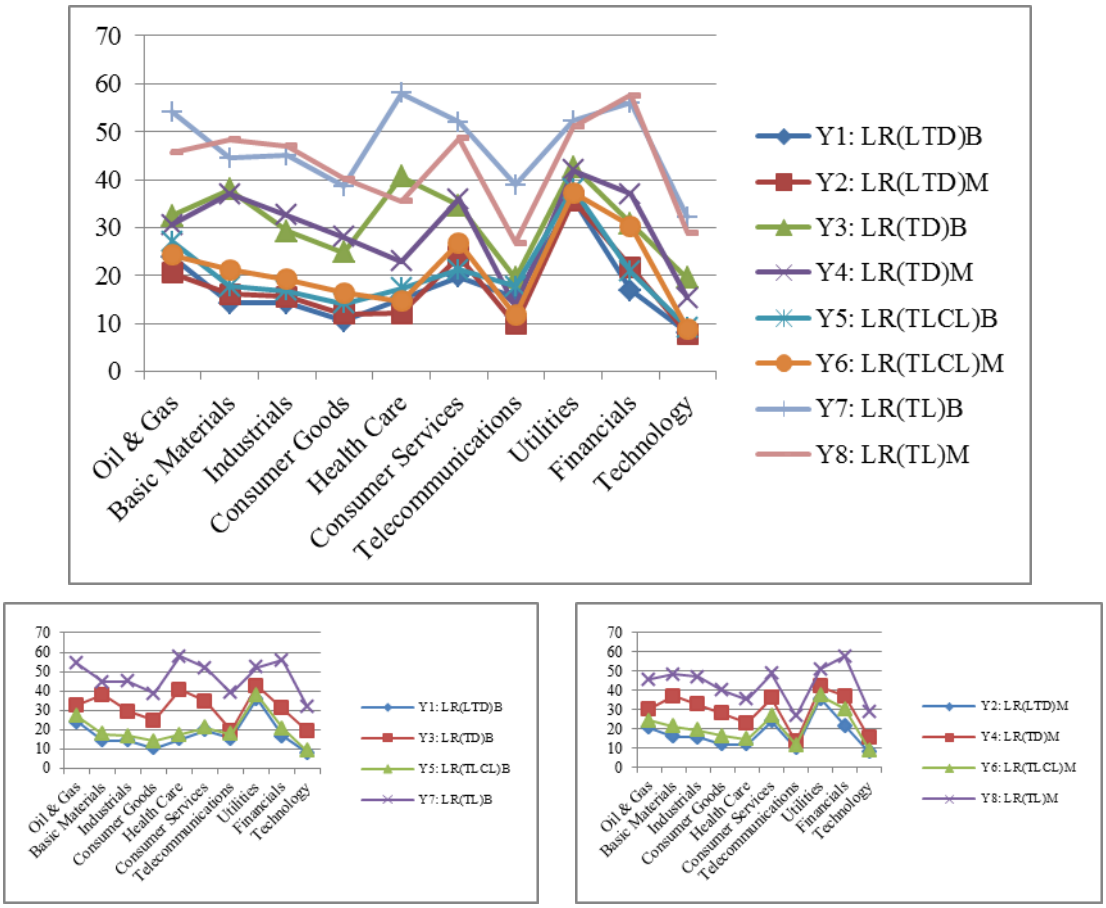

Figure 4.2 Leverage Ratios of Malaysia by Industry

Figure 4.2 depicts eight leverage measurements of each industry in Malaysia. Clearly, Y3: LR(TD)B, Y4: LR(TD)M, Y7: LR(TLCL)B and Y8: LR(TLCL)M show different results, while the remaining leverage measures provide the same pattern. Technology has the lowest leverage, but the Utilities industry has the highest.

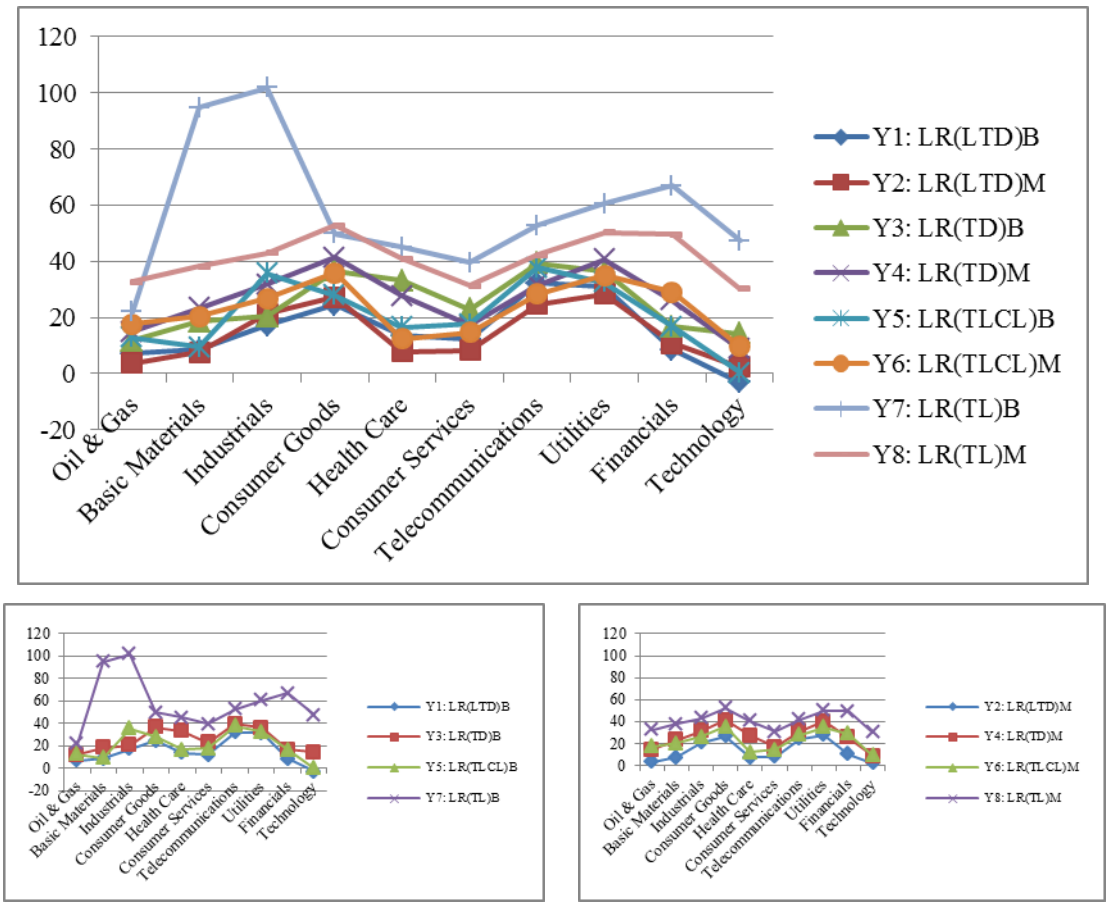

Figure 4.3 Leverage Ratios of the Philippines by Industry

Figure 4.3 shows the leverage ratios in eight different measures in the Philippines. All of the leverage definitions have exactly the same line shape, except Y7: LR(TL)B. Specifically, all market value leverage ratios have exactly the same pattern.

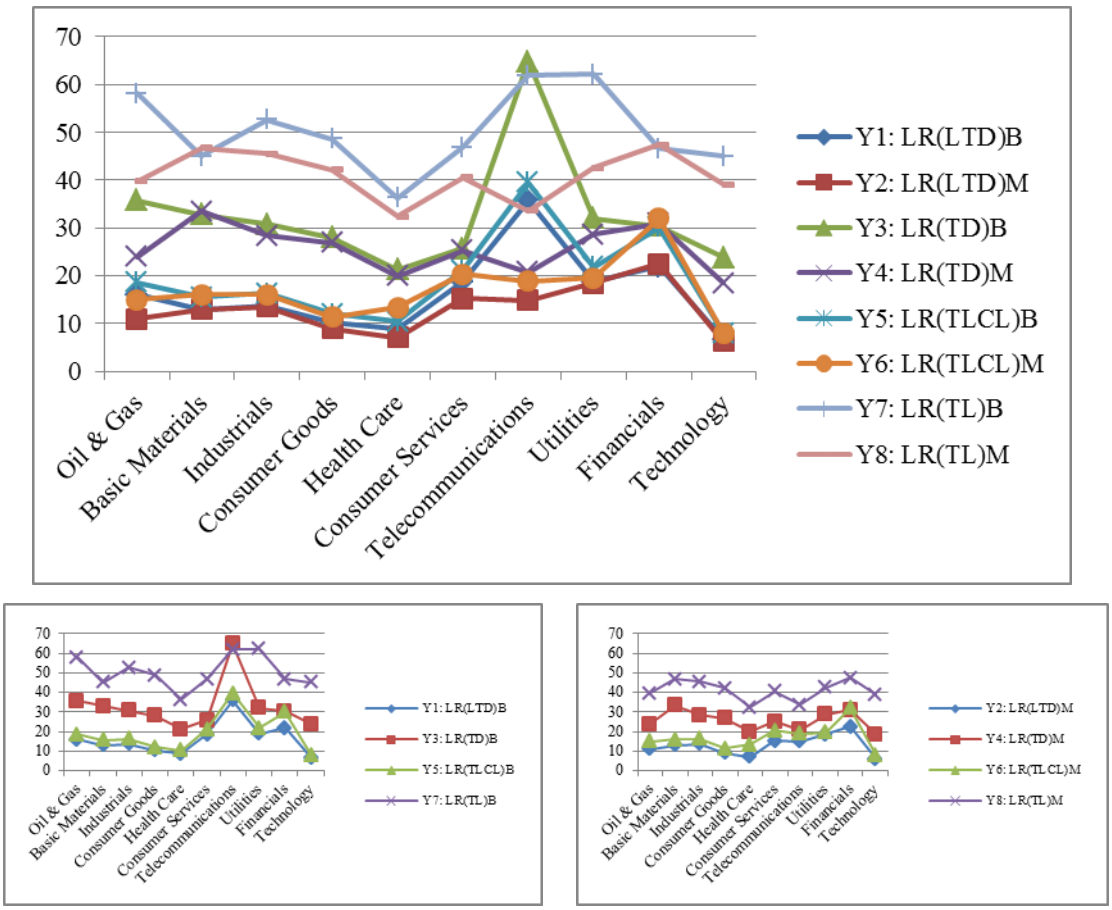

Figure 4.4 Leverage Ratios of Singapore by Industry

Figure 4.4 illustrates the leverage ratios in eight definitions of each industry in Singapore. All definitions of leverage seem to have the same line form, except Y7: LR(TL)B. Graphically, Telecommunications and Financials have higher leverage ratios than other industries; but Technology and Health Care have lower leverage ratios.

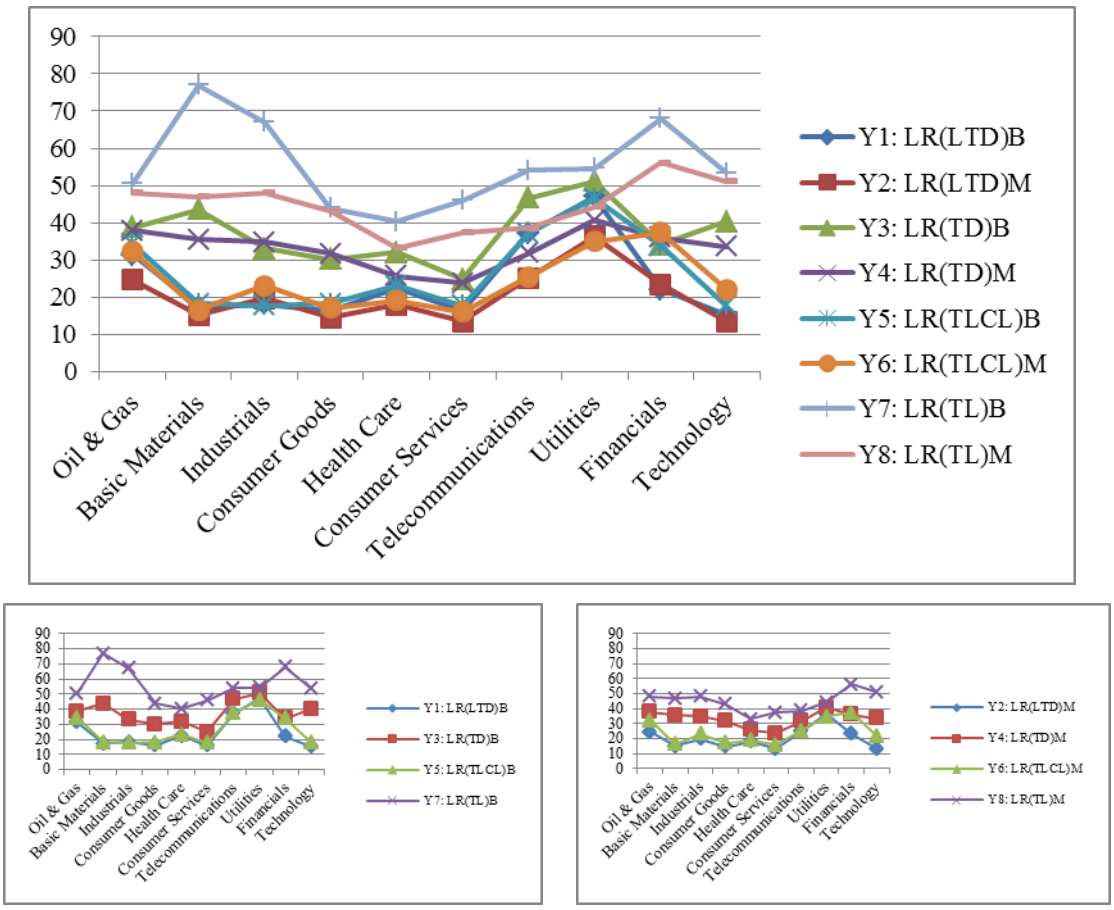

Figure 4.5 Leverage Ratios of Thailand by Industry

Figure 4.5 illustrates eight definitions of leverage ratios of Thailand for ten industries. Y7: LR(TL)B and Y8: LR(TL)M show different results compared with other definitions, while Y3: LR(TD)B and Y4: LR(TD)M are slightly different from other leverage measures. Generally, the Consumer Services industry has the lowest leverage; however, the Utilities industry has the highest leverage.

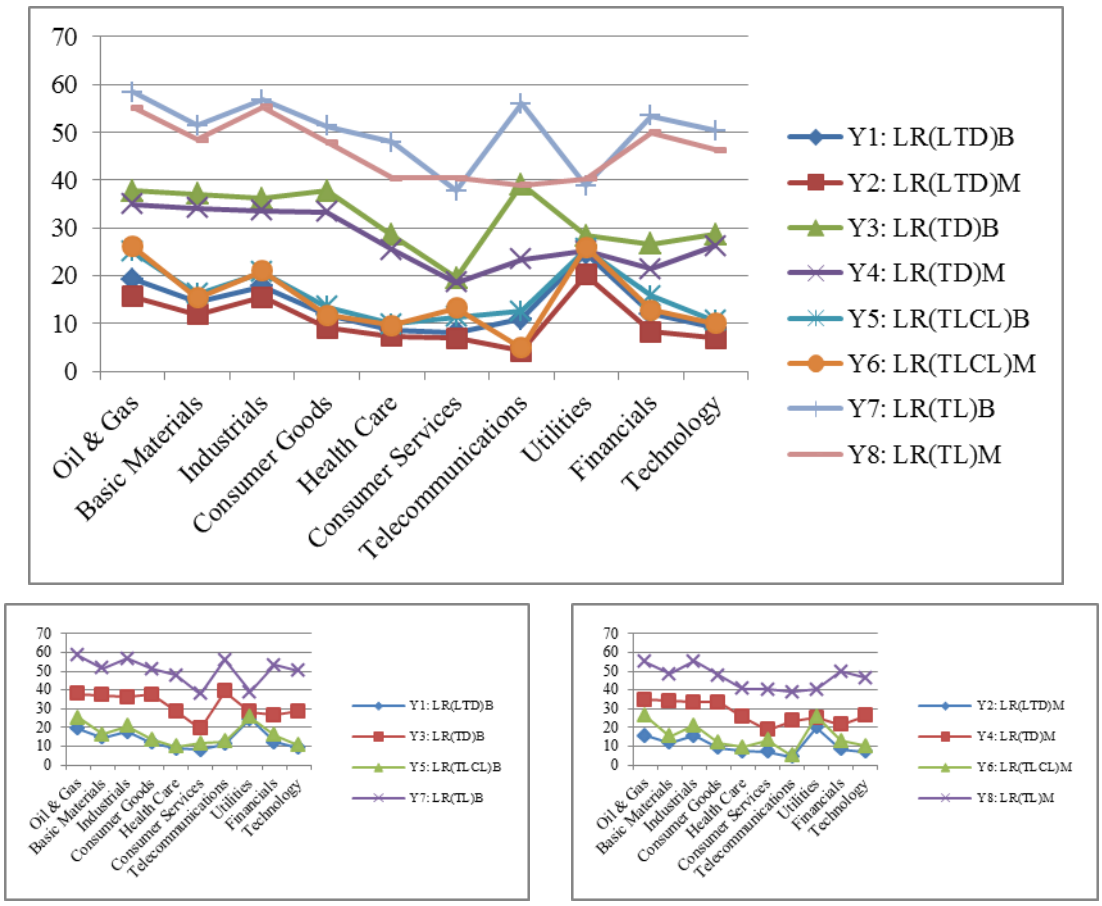

Figure 4.6 Leverage Ratios of Vietnam by Industry

Figure 4.6 displays all of the leverage measures in eight definitions of Vietnam for ten industries. Each measurement of leverage ratio provides mostly the same result for each industry. Only some measures show differences. For instance, the Utilities industry has a high leverage in six definitions, except Y7: LR(TL)B and Y8: LR(TL)M, as well as the Telecommunications industry seem to have low leverage ratios, except for Y3: LR(TD)B and Y7: LR(TL)B. For more details of data analysis by country and industry, see the Appendix B.

4.2 Empirical Results

4.2.1 Variance Components Analysis

The analysis of variance components is a way to obtain the proportion of variance for the dependent variable, i.e. leverage that is associated with one or more random-effects variables. It represents the amount of shared variance attributable to a random effects variable's main effect and, optionally, the random variable's interactions with other factors.

Table 4.13 Variance Estimates (Y1, Y2, Y3, Y4)

Component	Y1		Y2		Y3		Y4	
	Estimate	**%**	**Estimate**	**%**	**Estimate**	**%**	**Estimate**	**%**
Var(Error)	1046.735	90.23	457.111	88.61	5756.882	95.55	785.514	76.57
Var(idind)	55.851	4.81	19.401	3.76	186.140	3.09	181.663	17.71
Var(idctry(idind))	57.550	4.96	39.343	7.63	81.907	1.36	58.635	5.72
Total	1160.136	100	515.855	100	6024.929	100	1025.812	100

Method: Minimum Norm Quadratic Unbiased Estimation (Weight = 1 for Random Effects and Residual)

Table 4.14 Variance Estimates (Y5, Y6, Y7, Y8)

Component	Y5		Y6		Y7		Y8	
	Estimate	**%**	**Estimate**	**%**	**Estimate**	**%**	**Estimate**	**%**
Var(Error)	1879.726	94.34	569.200	66.13	13006.744	57.72	726.979	80.89
Var(idind)	52.000	2.61	226.196	26.28	8596.702	38.15	127.266	14.16
Var(idctry(idind))	60.830	3.05	65.377	7.60	931.140	4.13	44.464	4.95
Total	1992.556	100	860.773	100	22534.586	100	898.709	100

Method: Minimum Norm Quadratic Unbiased Estimation (Weight = 1 for Random Effects and Residual)

Table 4.13 and Table 4.14 reveal that the largest amount of variation in each dependent variable does not come from the random-effect variables of country level or industry level. Thus, the large proportion of leverage is due to the variables of other levels. i.e. firm-level and time-level variables.

4.2.2 Multiple Regression Analysis (MRA)

Table 4.15 displays the correlations between the explanatory predictors in order to check for problems of multicollinearity. The result shows that firm size (F1: SIZE) is the only predictor that is statistically significantly correlated with all other explanatory variables. However, their strength of correlation is weak to medium. Profitability (F2: PRO) has medium statistical significant relations with firm size, tangibility, interest rate, volatility, munificence, stock market development, economic development, inflation, but a weak relation with corporate tax. Even tangibility (F3: TAN) has statistically-significant relations with all other independent variables except for I3: HHI, but a positive moderate relation with tangibility, non-debt tax shield, bank development, and corporate tax. However, growth opportunity (F4: GRO), interest rate (F7: INTR), and business risk (F8: VOL) show significant relationship with some predictors. Industry-specific predictors show a significant correlation with two-thirds of the other predictors. However, only stock market development (C1: SMD) has highly negative relations with inflation (C4: INF) and Tax (C5: TAX). Overall, the Pearson's correlations are not beyond +/-0.8, implying that all reviewed predictors can be included in the model.

Table 4.15 Correlations Matrix of Predictors

This table represents the Pearson's correlations for the firm-, industry-, and country-level predictors. F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant, and equipment to total assets, F4: GRO is the ratio of market to book value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of the return of assets over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against the sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is the stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. **, * denotes the 1% and 5% statistical significance level of correlation, respectively.

Correlation	F1: SIZE	F2: PRO	F3: TAN	F4: GRO	F5: NDTS	F6: LIQ	F7: INTR	F8: VOL	I1: MUN	I2: DYN	I3: HHI	C1: SMD	C2: BANK	C3: GDP	C4: INF	C5: TAX
F1: SIZE	1															
F2: PRO	.048**	1														
F3: TAN	.166**	-.034**	1													
F4: GRO	-.017*	-.011	-.018**	1												
F5: NDTS	-.060**	.004	.349**	-.012	1											
F6: LIQ	-.093**	-.002	-.103**	.002	-.006	1										
F7: INTR	-.037**	.075**	-.019**	.001	.030**	.039**	1									
F8: VOL	-.044**	.024**	-.032**	.007	-.004	.013	.005	1								
I1: MUN	-.106**	.056**	-.102**	.015*	-.023**	-.029**	-.004	-.001	1							
I2: DYN	-.078**	-.005	-.035**	.004	.016*	.013	-.010	.010	.232**	1						
I3: HHI	.160**	-.007	-.001	.002	.028**	.014*	.003	.007	.133**	.246**	1					
C1: SMD	.168**	-.018**	-.058**	-.024**	-.032**	-.004	-.029**	.021**	-.151**	-.067**	.098**	1				
C2: BANK	-.051**	.000	.029**	-.049**	-.011	-.025**	-.016*	-.014	-.135**	.028**	-.154**	.056**	1			
C3: GDP	-.043**	.046**	-.051**	.002	-.026**	-.015*	-.014	.005	.197**	.044**	-.026**	.176**	-.238**	1		
C4: INF	-.150**	.017**	-.049**	.010	-.008	-.015*	.010	-.011	.259**	-.013*	-.091**	-.634**	-.234**	.117**	1	
C5: TAX	-.196**	.016*	.099**	.034**	.048**	.043**	.013	-.017*	.074**	.065**	-.203**	-.713**	.097**	-.188**	.387**	1

Table 4.16 shows the ASEAN's estimates for the regression models of all firms in every industry so as to test the effect of firm-, industry-, country-specific characteristics on various leverage ratios; not only the book-based leverage measures (Y1: LR(LTD)B, Y3: LR(TD)B, Y5: LR(TLCL)B and Y7: LR(TL)B, but also the market-based leverage measures (Y2: LR(LTD)M, Y4: LR(TD)M, Y6: LR(TLCL)M and Y8: LR(TL)M).

For the firm-level regressors:

There are strongly statistical significant positive relations between firm size (F1: SIZE) and seven different leverage ratios excluding Y7: LR(TL)B. The firm size has no statistically-significant effect on Y7: LR(TL)B. There are strongly statisticaly-significant negative relations between profitability (F2: PRO) and seven various leverage ratios, except for Y3: LR(TD)B. Profitability has a strong statistically-significant positive effect on Y3: LR(TD)B. There are strong statistically-significant positive relations between tangibility of assets (F3: TAN) and seven different leverage ratios, except for Y7: LR(TL)B. The tangible assets has no significant effect on Y7: LR(TL)B. There are significant negative relations between growth opportunity (F4: GRO) and all market-based leverage ratios. However, there are strong statistically-significant positive relations between growth opportunity and two book-value leverage ratios; i.e. Y1: LR(LTD)B and Y5: LR(TLCL)B, except for Y3: LR(TD)B and Y7: LR(TL)B. No significant effect between the growth rate and Y3: LR(TD)B is detected. There are statistically-significant negative relations between non-debt tax shield (F5: NDTS) and six different leverage ratios. On the other hand, the non-debt tax shield have no statistically-significant effects on Y3: LR(TD)B and Y7: LR(TL)B. There are strong statistically-significant negative relations between liquidity (F6: LIQ) and every diverse leverage ratios; both book-based and market-based ones. There are also statistically-significant negative relations between cost of debt or interest rate (F7: INTR) and seven of eight leverage ratios excluding Y7: LR(TL)B. The cost of debt has no significant effect on Y7: LR(TL)B. There is no significant negative relations between business risk or volatility (F8: VOL) and any leverage ratios, but volatility has a strong statistically-significant positive effect on Y7: LR(TL)B. However, no significant effects between volatility and Y1: LR(LTD)B, Y2: LR(LTD)M, Y3: LR(TD)B, Y4: LR(TD)M, Y5: LR(TLCL)B, Y6: LR(TLCL)M and Y8: LR(TL)M are found.

For the industry-level predictors:

There are strong statistically-significant negative relations between the munificence of an industry (I1: MUN) and Y4: LR(TD)M, Y6: LR(TLCL)M and Y8: LR(TL)M. However, the munificence has a strong statistically-significant positive effect on Y3: LR(TD)B, but there is no significant effect on Y1: LR(LTD)B, Y2: LR(LTD)M, Y5: LR(TLCL)B and Y7: LR(TL)B. A negative and strong statistically-significant relationship is only found between the dynamism of an industry (I2: DYN) and Y5: LR(TLCL)B, while positive and statistically-significant effects are captured between the dynamism of an industry and Y1: LR(LTD)B and Y8: LR(TL)M. There is insignificant relations between the dynamism of an industry and Y2: LR(LTD)M, Y3: LR(TD)B, Y4: LR(TD)M, Y6: LR(TLCL)M and Y7: LR(TL)B. Negative and strong statistically-significant relations are detected between the Herfindahl-Hirschman index of an industry (I3: HHI) and all market-based leverage ratios. Nevertheless, insignificant effects are found for all book-based leverage ratios.

For country-level predictors:

There are statistically significant negative relations between stock market development (C1: SMD) and Y1: LR(LTD)B, Y5: LR(TLCL)B and Y7: LR(TL)B; however, a statistically-significant positive relation for Y8: LR(TL)M is captured. Moreover, there are insignificant relations for Y2: LR(LTD)M, Y3: LR(TD)B, Y4: LR(TD)M, and Y6: LR(TLCL)M. Positive and significant effects are detected between bank development (C2: BANK) and Y3: LR(TD)B and Y4: LR(TD)M, but a negative and significant effect for Y6: LR(TLCL)M. There are insignificant relations for Y1: LR(LTD)B, Y2: LR(LTD)M, Y5: LR(TLCL)B, Y7: LR(TL)B and Y8: LR(TL)M. Country growth or economic development (C3 GDP) has no significant positive effect on any leverage measures, although it has strong significant negative effects on Y4: LR(TD)M, Y6: LR(TLCL)M and Y8: LR(TL)M. There are insignificant relations for Y1: LR(LTD)B, Y2: LR(LTD)M, Y3: LR(TD)B, Y5: LR(TLCL)B, and Y7: LR(TL)B. Inflation rate (C4: INF) has no significant negative effect on any leverage ratios; however, it has significantly-positive effects on Y3: LR(TD)B, Y4: LR(TD)M, Y5: LR(TLCL)B, Y6: LR(TLCL)M and Y8: LR(TL)M. There are insignificant relations for Y1: LR(LTD)B, Y2: LR(LTD)M, and Y7: LR(TL)B. Corporate tax rate (C: TAX) has a strongly-significant positive effect for

only Y6: LR(TLCL)M, while it has a strongly-significant negative effect for Y8: LR(TL)M. However, insignificant effects for Y1: LR(LTD)B, Y2: LR(LTD)M, Y3: LR(TD)B, Y4: LR(TD)M, Y5: LR(TLCL)B and Y7: LR(TL)B are captured.

The adjusted R-squared are 21.1%, 19.6%, 18.2%, 15.4%, 15.3%, 8.7%, 8.1%, and 2.5% for the regression models of Y7:LR(TL)B, Y6: LR(TLCL)M, Y2: LR(LTD)M, Y8: LR(TL)M, Y4:LR(TD)M, Y1:LR(LTD)B, Y5: LR(TLCL)B and Y3: LR(TD)B, respectively. Overall, the adjusted R-squared of the market leverage ratios is higher than those of the book-based ones. The Durbin-Watson (DW) statistic shows that there is no autocorrelation problem for Y3: LR(TD)B, while the remaining regression equations show positive autocorrelations.

Apparently, firm size, tangibility as firm-level factors has a strong statistically-significant positive relation with leverage in terms of the book and market long-term debts, the book and market long-term liabilities, the market total debt and the market total liabilities, while profitability, growth opportunity, non-debt tax shield, liquidity and interest rate has a strong statistically-significant negative relation with leverage according to the hypothesis and the trade-off theory. However, the business risk or volatility has an insignificant relation with all leverage ratios except for the book total liability leverage. For the industry-level factors, munificence has a strong statistically-significant negative relation with leverage in terms of market total debt, market long-term liabilities, and market total liabilities; however, the HH index has a strong statistically-significant negative relation with leverage in terms of book and market total debt, market long-term liabilities, and market total liabilities. Dynamism has a weak statistically-significant negative relation with leverage in terms of book long-term debt, but has a strong statistically-significant negative relation with book long-term liabilities. All country-level factors have insignificant relations with market long-term debt. However, stock market development has a statistically-significant negative relation with leverage in terms of book long-term debt, book long-term liabilities, and book total liabilities. The inflation rate has a statistically-significant positive relation with six of the eight definitions of leverage.

Table 4.16 Regressions Results for Leverage for ASEAN (All Industries)

This table displays the results for the panel data analysis with respect to the leverage ratios of firms on the ASEAN Stock Exchanges for the years 2000-2011. The dependent variable is a leverage ratio defined in eight definitions; Y1: LR(LTD)B is the long-term debt to total firm book-value ratio, Y2: LR(LTD)M is the long-term debt to total firm market value ratio, Y3: LR(TD)B is the total debt to total firm book-value ratio, Y4: LR(TD)M is the total debt to total firm market value ratio, Y5: LR(TLCL)B is the long-term liabilities to total firm book-value ratio, Y6: LR(TLCL)M is the long-term liabilities to total firm market value ratio, Y7: LR(TL)B is the total liabilities to total firm book-value ratio, and Y8: LR(TL)M is the total liabilities to total firm market ratio. For the explanatory variables, F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant, and equipment to total assets, F4: GRO is the ratio of market to book value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of return of assets over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is the stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. In addition, N is the number of observations, Adj.R^2 is the adjusted R square value, DW is the Durbin-Watson statistic. For the statistical judgments, ***, **, * denotes the 1%, 5% and 10% statistical significance level of the coefficients, respectively.

Variable	Y1: LR(LTD)B		Y2: LR(LTD)M		Y3: LR(TD)B		Y4: LR(TD)M		Y5: LR(TLCL)B		Y6: LR(TLCL)M		Y7: LR(TL)B		Y8: LR(TL)M	
	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat
(Constant)	-29.365***	-6.726	-26.796***	-8.868	-9.280	-.832	2.311	.594	-32.825***	-6.522	-28.332***	-8.720	82.031***	5.628	41.069***	11.334
F1: SIZE	3.749***	21.930	3.409***	28.804	2.896***	6.631	2.397***	15.728	4.051***	20.554	3.588***	28.203	-.641	-1.121	1.270***	8.953
F2: PRO	-1.534***	-3.017	-2.410***	-6.878	12.317***	9.484	-4.823***	-10.648	-1.559***	-2.661	-2.586***	-6.839	-88.081***	-35.550	-4.938***	-11.095
F3: TAN	22.119***	17.130	26.490***	29.646	15.192***	4.618	19.183***	16.713	25.302***	17.006	30.701***	32.030	-6.412	-1.493	8.015***	7.498
F4: GRO	.069***	3.087	-.039**	-2.491	.002	.037	-.092***	-4.608	.066**	2.555	-.061***	-3.619	.013	.175	-.115***	-6.148
F5: NDTS	-24.564***	-2.629	-60.325***	-9.452	11.203	.475	-83.505***	-10.144	-41.985***	-3.899	-89.142***	-12.971	9.699	.313	-70.978***	-9.253
F6: LIQ	-.321***	-4.900	-.308***	-6.807	-1.366***	-8.165	-1.301***	-22.280	-.339***	-4.487	-.341***	-6.994	-2.274***	-10.400	-1.650***	-30.343
F7: INTR	-1.112***	-3.583	-1.128***	-5.271	-2.008**	-2.533	-2.318***	-8.379	-.809**	-2.262	-.853***	-3.693	-1.512	-1.461	-1.146***	-4.451
F8: VOL	-.165	-.418	-.300	-1.100	.530	.525	-.340	-.965	.273	.599	-.371	-1.263	5.023***	3.763	-.506	-1.540
I1: MUN	1.588	.471	-6.681	-2.859	22.648***	2.628	-11.479***	-3.817	3.670	.943	-13.313***	-5.300	10.858	.963	-17.386***	-6.208
I2: DYN	-29.384*	-1.667	-16.794	-1.377	-35.125	-.780	24.294	1.546	-79.777***	-3.926	-.438	-.033	-38.164	-.649	24.076*	1.646
I3: HHI	-2.351	-.764	-12.553***	-5.880	-9.365	-1.191	-20.584***	-7.499	.491	.138	-13.997***	-6.105	-6.916	-.674	-17.126***	-6.702
C1: SMD	-.027***	.870	.001	.164	.006	.287	.011	1.401	-.025**	-2.513	.005	.759	-.073*	-2.579	.015**	2.109
C2: BANK	-.007	.975	.000	.032	.064**	2.226	.028***	2.850	.002	.188	-.038***	-4.533	-.060	-1.597	-.002	-.170
C3: GDP	.075	.000	-.314	-5.440	-.152	-.711	-.563***	-7.572	.108	1.119	-.365***	-5.875	.126	.452	-.640***	-9.245
C4: INF	.216**	.000	.889	12.682	.739***	2.852	1.467***	16.217	.282**	2.407	1.003***	13.291	-.529	-1.562	1.562***	18.553
C5: TAX	.024	.918	.005	.102	-.151	-.916	.021	.372	.059	.795	.206***	4.286	.056	.261	-.111***	-2.076
N	11,812		11.736		11,815		11.812		11,815		11,808		11,811		11,807	
Adj. R^2	.087		.182		.025		.153		.081		.196		.211		.154	
F-Stat	71.466***		163.646***		19.719***		134.529***		65.651***		180.347***		93.705***		135.584***	
DW	1.332		.821		1.688		.746		1.350		.839		1.243		.813	

Table 4.17 exhibits the unregulated ASEAN's estimates for the regression models in order to test the effect of the firm-, industry-, country-specific characteristics on various leverage ratios; not only the book-based leverage measures (Y1: LR(LTD)B, Y3: LR(TD)B, Y5: LR(TLCL)B and Y7: LR(TL)B, but also the market-based leverage measures (Y2: LR(LTD)M, Y4: LR(TD)M, Y6: LR(TLCL)M and Y8: LR(TL)M).

For the firm-level regressors:

There are strong statistically-significant positive relations between firm size (F1: SIZE) and all different leverage ratios. There are strong statistically-significant negative relations between profitability (F2: PRO) and all of the leverage ratios. There are strong statistically-significant positive relations between tangibility of assets (F3: TAN) and seven different leverage ratios, except for Y7: LR(TL)B. The tangibility of assets has no significant effect for Y7: LR(TL)B. There are strongly-significant negative relations between growth opportunity (F4: GRO) and all market-based leverage ratios, while are strong statistically-significant positive relations between growth opportunity and all book-value leverage ratios. There are strongly statistical significant negative relations between non-debt tax shield (F5: NDTS) and seven of eight leverage ratios. On the other hand, the non-debt tax shield has a strong statistically-significant positive effect on Y7: LR(TL)B. There are strong statistically-significant negative relations between liquidity (F6: LIQ) and all of the diverse leverage ratios, both book-based and market-based ones. There are statistically-significant negative relations between cost of debt or interest rate (F7: INTR) and all of the various leverage ratios. There are no significant negative relations between business risk or volatility (F8: VOL) or any of the leverage ratios.

For the industry-level predictors:

There are strong statistically-significant negative relations between the munificence of an industry (I1: MUN) and Y4: LR(TD)M, Y6: LR(TLCL)B and Y8: LR(TL)M, but munificence has a strong statistically-significant positive effect on Y1: LR(LTD)B, Y3: LR(TD)B and Y5: LR(TLCL)B. However, no significant effect on Y2: LR(LTD)M or Y7: LR(TL)B is detected. Negative and statistical significant relations are found between the dynamism of an industry (I2: DYN) and Y1: LR(LTD)B and Y5: LR(TLCL)B, while no positive or statistically-significant effect

for any leverage ratios is captured. There are insignificant relations between the dynamism of an industry and Y2: LR(LTD)M, Y3: LR(TD)B, Y4: LR(TD)M, Y6: LR(TLCL)M, Y7: LR(TLB) and Y8: LR(TL)M. Negative and strong statistically-significant relations are detected between the Herfindahl-Hirschman index of an industry (I3: HHI) and all market-based leverage ratios and three of four book-based ones. Nevertheless, an insignificant effect for Y7: LR(TLB) is found.

For the country-level predictors:

There are statistically-significant negative relations between stock market development (C1: SMD) and Y1: LR(LTD)B, Y3: LR(TD)B and Y7: LR(TL)B; however, strong statistically-significant positive relations for Y4: LR(TD)M, Y6: LR(TLCL)M and Y8: LR(TL)M are captured. Moreover, there are insignificant relations between the stock market development and Y2: LR(LTD)M and Y5: LR(TLCL)B. Positive and strongly-significant effects are detected between bank development (C2: BANK) and Y3: LR(TD)B and Y4: LR(TD)M, but bank development has a negative and significant effect on Y6: LR(TLCL)M. There are insignificant relations for Y1: LR(LTD)B, Y2: LR(LTD)M, Y5: LR(TLCL)B, Y7: LR(TL)B and Y8: LR(TL)M. Country growth or economic development (C3 GDP) has a significant positive effect on Y3: LR(TD)B, while economic development has a strongly-significant negative effects for all market-based leverage ratios; Y2: LR(LTD)M, Y4: LR(TD)M, Y6: LR(TLCL)M and Y8: LR(TL)M. There are insignificant relations for Y1: LR(LTD)B, Y5: LR(TLCL)B, and Y7: LR(TL)B. Inflation rate (C4: INF) has no significant negative effect for any of the leverage ratios, but have significantly positive effects for all of the different leverage ratios. Corporate tax rate (C5: TAX) has a strong significantly-positive effect on Y1: LR(LTD)B, Y3: LR(TD)B, Y5: LR(TLCL)B and Y6: LR(TLCL)M, while have strongly-significant negative effects on Y7: LR(TL)B and Y8: LR(TL)M. However, insignificant effects for Y2: LR(LTD)M and Y4: LR(TD)M are found.

The adjusted R-squared are 22.2%, 20.9%, 19.4%, 19.3%, 19.2% and 18.3% for the regression models of Y6: LR(TLCL)M, Y2: LR(LTD)M, Y5: LR(TLCL)B, Y7:LR(TL)B and Y8: LR(TL)M, Y4:LR(TD)M, Y1:LR(LTD)B and Y3: LR(TD)B, respectively. The Durbin-Watson (DW) statistic shows seemingly positive autocorrelations for all of the different leverage measures.

In sum, for the ASEAN firms under unregulated industries, the firm size and tangibility of assets have statistically-significant positive relations with the long-term debt market leverage ratios, and the other six proxies of leverage ratios. However, profitability, firm growth, non-debt tax shield, liquidity, and interest rate are seen to have statistically-significant negative relations with long-term debt market leverage ratios and others. This was consistent with the theories and prior studies. Only business risk or volatility has a statistically-insignificant effect on leverage ratios. For the industry-specific factors, there are statistically-significant negative relations between the munificence of industry and market leverage ratios, except for the long-term debt market leverage. However, there are statistically significant negative relations between the dynamism of the industry and book leverage ratios, but dynamism has an insignificant effect on the long-term debt market leverage. The HH index has statistically-significant negative relations with the long-term debt market leverage ratios and six other leverage ratios, according to Kayo and Kimura 2011. Regarding the country-specific influence, stock market and bank developments have statistically-insignificant relations with the long-term debt leverage. Economic development has statistically-significant negative relations with all market leverage ratios, in contrast to prior papers. Inflation rate has statistically-significant positive relations with the long-term debt leverage and others, but corporate tax has an insignificant effect on long-term debt leverage. Overall, seven of the eight firm-level predictors—firm size, profitability, tangibility, growth opportunity, non-debt tax shield, liquidity, interest rate—show strongly significant effects on all leverage ratios.

Table 4.17 Regressions Results on Leverage for ASEAN (Unregulated Industries)

This table displays the results of the panel data analysis with respect to leverage ratios of firms on the ASEAN Stock Exchanges for the years 2000-2011. The dependent variable is the leverage ratio defined according to eight definitions; Y1: LR(LTD)B is the long-term debt to total firm book-value ratio, Y2: LR(LTD)M is the long-term debt to total firm market value ratio, Y3: LR(TD)B is the total debt to total firm book-value ratio, Y4: LR(TD)M is the total debt to total firm market value ratio, Y5: LR(TLCL)B is the long-term liabilities to total firm book-value ratio, Y6: LR(TLCL)M is the long-term liabilities to total firm market value ratio, Y7: LR(TL)B is the total liabilities to total firm book-value ratio, and Y8: LR(TL)M is the total liabilities to total firm market ratio. For the explanatory variables, F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant and equipment to total assets, F4: GRO is the ratio of market to book-value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of return of asset over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. In addition, N is the number of observations, Adj.R^2 is the adjusted R square value, DW is the Durbin-Watson statistic. For the statistical judgments, ***, **, * denotes the 1%, 5% and 10% statistical significance level of the coefficients, respectively.

Variable	Y1: LR(LTD)B		Y2: LR(LTD)M		Y3: LR(TD)B		Y4: LR(TD)M		Y5: LR(TLCL)B		Y6: LR(TLCL)M		Y7: LR(TL)B		Y8: LR(TL)M	
	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat
(Constant)	-36.617***	-12.068	-28.749***	-9.647	-12.384***	-3.539	-3.405***	-.867	-40.384***	-12.638	-30.594***	-9.559	25.344***	7.884	36.924***	9.971
F1: SIZE	3.656***	30.034	3.129***	26.142	3.281***	23.371	2.638***	16.739	3.905***	30.461	3.260***	25.383	2.605***	20. 195	1.596***	10.743
F2: PRO	-9.617***	-9.376	-14.763***	-14.704	-22.637***	-19.137	-28.226***	-21.260	-9.901***	-9.166	-15.390***	-14.225	-18.826***	-17.324	-27.958***	-22.339
F3: TAN	22.961***	24.953	28.415***	31.363	11.141***	10.499	19.693***	16.531	25.989***	26.821	33.398***	34.408	-3.469***	-3.559	8.165***	7.272
F4: GRO	.120***	7.317	-.035***	-2.172	.103***	5.446	-.105***	-4.966	.120***	6.970	-.054***	-3.113	.103***	5.941	-.132***	-6.576
F5: NDTS	-20.100***	-3.041	-53.968***	-8.326	-31.313***	-4.108	-83.123***	-9.716	-30.752***	-4.418	-80.694***	-11.575	.249***	.036	-71.509***	-8.866
F6: LIQ	-.315***	-7.144	-.320***	-7.398	-1.230***	-24.207	-1.196***	-20.967	-.347***	-7.478	-.339***	-7.290	-1.663***	-35.628	-1.528***	-28.414
F7: INTR	-1.020***	-4.464	-1.101***	-4.931	-2.278***	-8.647	-2.459***	-8.319	-.759***	-3.156	-.846***	-3.514	-.895***	-3.701	-1.305***	-4.684
F8: VOL	.023	.089	-.070	-.271	.277	.906	.129	.377	-.001	-.002	-.171	-.611	.193	.685	-.149	-.460
I1: MUN	9.025***	3.887	-.278	-.122	13.679***	5.109	-5.808*	-1.933	7.480***	3.059	-5.550**	-2.266	7.304	2.970	-12.287***	-4.337
I2: DYN	-27.504**	-2.280	-18.349	-1.550	-1.156	-.083	22.054	1.412	-24.637*	-1.939	-4.783	-.376	-10.528	-.824	21.992	1.494
I3: HHI	-8.634***	-3.943	-16.046***	-7.444	-18.593***	-7.362	-23.789***	-8.389	-9.979***	-4.325	-14.742***	-6.374	-14.443	-6.225	-17.847***	-6.676
C1: SMD	-.013**	-2.167	.008	1.343	-.028***	-4.088	.013*	1.703	-.007	-1.053	.015**	2.398	-.030***	-4.735	.013*	1.833
C2: BANK	-.003	-.361	-.002	-.260	.034***	3.536	.034***	3.143	-.010	-1.196	-.016*	-1.853	.008	.855	.016	1.567
C3: GDP	.062	1.087	-.278***	-4.943	.133**	2.016	-.481***	-6.473	.068	1.128	-.335***	-5.528	.098	1.605	-.555***	-7.927
C4: INF	.365***	5.146	.921***	13.254	.581***	7.098	1.584***	17.242	.472***	6.319	1.093***	14.602	.668***	8.886	1.679***	19.382
C5: TAX	.129***	2.835	.070	1.565	.107**	2.034	.032	.549	.214***	4.451	.174***	3.621	-.098**	-2.034	-.200***	-3.590
N	10,497		10,436		10,497		10,492		10,496		10,492		10,497		10,495	
Adj. R^2	.183		.209		.183		.192		.194		.222		.193		.193	
F-Stat	148.154***		173.310***		148.068***		157.012***		158.422***		187.583***		158.009***		158.144***	
DW	1.027		.873		.753		.782		1.134		.895		.816		.859	

Table 4.18 shows the unregulated ASEAN estimates for the regression models in order to test the effect of the firm-, industry-, country-specific characteristics on various leverage ratios; not only the book-based leverage measures (Y1: LR(LTD)B, Y3: LR(TD)B, Y5: LR(TLCL)B and Y7: LR(TL)B, but also the market-based leverage measures (Y2: LR(LTD)M, Y4: LR(TD)M, Y6: LR(TLCL)M and Y8: LR(TL)M. Also, industry and country dummies are inserted into the model to find out whether each differs from the controlling variable.

For the firm-level regressors:

There are strong statistically-significant positive relations between firm size (F1: SIZE) and all of the different leverage ratios. However, strong statistically-significant negative relations between profitability (F2: PRO), liquidity (F6: LIQ) and all of the leverage ratios are found. There are strong statistically-significant positive relations between tangibility of assets (F3: TAN) and seven different leverage ratios, except for Y7: LR(TL)B. The tangible assets has a strongly-significant negative effect on Y7: LR(TL)B. There are strongly significant negative relations between growth opportunity (F4: GRO) and all market-based leverage ratios, while there are statistically-significant positive relations between growth opportunity and all of the book-value leverage ratios. There are statistically significant negative relations between non-debt tax shield (F5: NDTS) and most of the market-value leverage ratios. However, the non-debt tax shield has a statistically-significant positive effect on most of the book-value leverage ratios. There are statistical significant negative relations between cost of debt or interest rate (F7: INTR) and all of the various leverage ratios. Nevertheless, insignificant relations between business risk or volatility (F8: VOL) and any of the leverage ratios are found.

For the industry-level predictors:

There are strongly statistical significant negative relations between the munificence of an industry (I1: MUN) and all market-based leverage ratios, while positive and statistically-significant relations are found between the dynamism of an industry (I2: DYN) and most of the book-based leverage ratios. Negative and strong statistically-significant relations are detected between the Herfindahl-Hirschman index of an industry (I3: HHI) and all book-based leverage ratios, including Y2: LR(LTD)M. However, a positive and statistically-significant effect on Y8: LR(TL)M is found.

For the country-level predictors:

There are strong statistically-significant negative relations between stock market development (C1: SMD) and all market-value leverage ratios, but stock market development has a positive and significant effect on Y7: LR(TL)B. The only negative and strongly-significant effects are detected between bank development (C2: BANK) and all market-value leverage ratios, while country growth or economic development (C3 GDP) has strongly-significant negative effects on all market-based leverage ratios. Also, inflation rate (C4: INF) has significantly-positive effects on all of the various leverage ratios except for Y1: LR(LTD)B. Corporate tax rate (C5: TAX) has significantly-positive effects on Y1: LR(LTD)B, Y2: LR(LTD)M, Y5: LR(TLCL)B but insignificant effects on the remainder of the leverage ratios.

For the industry dummy variables:

The industry dummies show various results for each different definition of leverage ratio. For example, according to Y8: LR(TL)M, all industry dummies have significant coefficients, confirming the significant capital structure differences based on the type of industry by comparing them with the control variable, the Consumer Goods industry (d_idind3). Table 4.31 shows that the basic Materials (d_idind1) and Industrials (d_idind2) industries has a significantly and higher marginal leverage than firms in the Consumer Goods (d_idind3) industry. However, firms in the Oil & Gas (d_idind0), Health Care (d_idind4), Consumer Services (d_idind5), Telecommunications (d_idind6), Technology (d_idind9) industries have a significantly lower leverage than firms in the Consumer Goods (d_idind3) industry. For Y1: LR(LTD)B, firms in the Oil & Gas (d_idind0), Industrials (d_idind2), Consumer Services (d_idind5), Telecommunications (d_idind6), Technology (d_idind9) industries have a significantly higher marginal leverage, but firms in the Basic Materials (d_idind1) industry has a marginally lower leverage relative to firms in the Consumer Goods (d_idind3) industry. For Y2: LR(LTD)M, firms in the industries of Oil & Gas (d_idind0), Industrials (d_idind2), and Consumer Services (d_idind5) have a significantly higher marginal leverage, but firms in the Health Care (d_idind4), Telecommunications (d_idind6) industries have a significantly lower leverage compared to firms in the Consumer Goods (d_idind3) industry. For Y3: LR(TD)B, firms in the Health Care (d_idind4), Consumer Services (d_idind5), Technology

(d_idind9) industries have a significantly lower leverage compared to firms in the Consumer Goods (d_idind3) industry. Similarly, for Y4: LR(TD)M, firms in industries of Oil & Gas (d_idind0), Health Care (d_idind4), Consumer Services (d_idind5), and Technology (d_idind9) a significantly lower leverage. However, Telecommunications (d_idind6) has a significantly higher marginal leverage.

For Y5: LR(TLCL)B, firms in the Oil & Gas (d_idind0), Industrials (d_idind2), Consumer Services (d_idind5), and Telecommunications (d_idind6) industries have a significantly higher marginal leverage, but Basic Materials (d_idind1) has a significantly lower leverage relative to firms in the Consumer Goods (d_idind3) industry. For Y6: LR(TLCL)M, firms in Oil & Gas (d_idind0), Industrials (d_idind2), and Consumer Services (d_idind5) industries have a significantly higher marginal leverage, but those in the Health Care (d_idind4) and Telecommunications (d_idind6) industries had a significantly and marginally lower leverage. For Y7: LR(TL)B, firms in the Oil & Gas (d_idind0), Industrials (d_idind2), and Telecommunications (d_idind6) industries have a significantly higher marginal leverage relative to firms in the Consumer Goods (d_idind3) industry.

For the country dummy variables:

The regression results in Table 4.31 confirm the significant capital structure differences across country, compared with Thailand (d_idcrtry5) as the base country. Especially, for Y8: LR(TL)M, the countries of firm origin that show a significantly higher marginal leverage are Malaysia (d_idcrtry2), Singapore (d_idcrtry4) , and Vietnam (d_idcrtry6); however, a significantly and marginal lower leverage are found in the firms in the Philippines (d_idcrtry3), and Indonesia (d_idcrtry1). Focusing on the market value leverage ratios—Y2: LR(LTD)M, Y4: LR(TD)M, Y6: LR(TLCL)M, and Y8: LR(TL)M—the results show that the listed firms in Malaysia (d_idcrtry2), Singapore (d_idcrtry4), and Vietnam (d_idcrtry6) have a higher marginal leverage, while firms in Indonesia (d_idcrtry1) and the Philippines (d_idcrtry3) have a marginally lower leverage relative to the ones in Thailand (d_idcrtry5).

The adjusted R-squared are 22.1%, 22.0%, 21.5%, 21.1%, 19.4%, 19.3% and 18.5% for the regression models of Y5: LR(TLCL)B, Y7:LR(TL)B, Y6: LR(TLCL)M, Y1:LR(LTD)B and Y2: LR(LTD)M, Y3: LR(TD)B, Y8: LR(TL)M, and Y4:LR(TD)M. The Durbin-Watson (DW) statistic shows seemingly positive autocorrelations for all of the different leverage measures.

When the industry and country dummies are added to the regression models in Table 4.18, the explanatory power of the predictors is a bit better than the models in Table 4.17 for six of the eight leverage definitions. However, Y4: LR(TD)M and Y6: LR(TLCL)M in Table 4.18 are a bit lower than in Table 4.17. Firm size, profitability, tangibility, non-debt tax shield, liquidity, interest rate showed strongly significant effects on all leverage ratios, whereas volatility has an insignificant effect on the leverage ratios. The industry-level predictors—munificence, dynamism, and the Herfindahl-Hirschman index show significant effects on some leverage definitions, especially for Y8: LR(TL)M. The country-level predictors—stock market development, bank development, economic development, inflation rate and corporate tax rate—also show significant effects on various leverage ratios, particularly for Y4: LR(LTD)M.

Altogether, the regression results for the firms in unregulated industries, and the dummies of industry and country, confirm that there are influences of firm-specific factors—firm size, profitability, tangible assets, firm growth opportunity, non-debt tax shield, liquidity, interest rate—on all proxies of leverage ratios; however, non-debt tax shield has only an insignificant relation with the long-term debt leverage. Moreover, business risk or volatility has an insignificant relation with all of the leverage ratios. For the industry-specific factors, munificence has a statistically-significant negative relationship with all of the market leverage ratios, but insignificant relations with book leverage ratios. Dynamism has insignificant relations with the long-term debt market leverage, but significant relations with the three other proxies of market leverage ratios. The HH index has a statistically-significant negative relation with long-term debt market leverage. For the country-specific factors—stock market development, banking development, and country growth—have statistically-significant negative effects on the long-term debt market leverage, while inflation rate and corporate rate have statistically-significant positive effects on the long-term debt market leverage.

Based on the controlling industry, Consumer Goods (d_inind3) as a baseline, the results show that firms within the industries of Oil & Gas (d_idind0) has a significantly higher marginal leverage for long-term debt book and market leverage ratios, and long-term liabilities market leverage; however, there is a significantly

lower leverage for the total debt and liability leverage ratios. Industrials (d_idind2) has a significantly higher marginal leverage ratios in terms of long-term debt market value, and the five other leverage definitions. Health Care (d_idind4) has a significantly lower long-term debt market leverage and other four leverage proxies. Consumer Services (d_idind5) has a significantly higher marginal leverage than Consumer Goods, but it is lower for some leverage ratios. The Telecommunications (d_idind6) industry has a significantly lower long-term debt market leverage than Consumer Goods. The Basic Materials (d_idind1) and Technology (d_idind9) industries have an insignificant market-value leverage for long-term debt. Overall, the industry that shows the significant marginal highest long-term debt market leverage is Industrials, followed by Gas & Oil and Consumer Services. However, the industry that shows the significantly lowest marginal leverage in terms of long-term debt market value is Telecommunications, followed by Health Care.

With regard to the controlling country, Thailand (d_idctry5) as a baseline, Indonesia has significantly lower market leverage ratios. Malaysia has a significantly higher marginal leverage in terms of all of the market-value definitions, but shows a significantly lower total debt book leverage than Thailand. The Philippines has significantly lower leverage ratios in terms of long-term debt market value, total debt of book and market value, and total liabilities market value than Thailand. Singapore has an insignificant higher long-term debt market leverage, but a weak statistically significant higher marginal leverage for total liabilities market value, though Singapore has significantly higher marginal leverage ratios in terms of total debt and total liability book value. Lastly, Vietnam has significantly higher marginal leverage in all proxies. In sum, the country that provides the highest marginal long-term debt market leverage is Malaysia, followed by Vietnam. However, the country that indicates lowest marginal long-term debt market leverage is the Philippines, followed by Indonesia.

Table 4.18 Regressions Results for the Leverage for ASEAN and Dummy (Unregulated Industries)

This table displays the results of the panel data analysis with respect to leverage ratios of firms on the ASEAN Stock Exchanges for the years 2000-2011. The dependent variable is a leverage ratio defined in eight definitions; Y1: LR(LTD)B is the long-term debt to total firm book value ratio, Y2: LR(LTD)M is the long-term debt to total firm market value ratio, Y3: LR(TD)B is the total debt to total firm book value ratio, Y4: LR(TD)M is the total debt to total firm market value ratio, Y5: LR(TLCL)B is the long-term liabilities to total firm book value ratio, Y6: LR(TLCL)M is the long-term liabilities to total firm market value ratio, Y7: LR(TL)B is the total liabilities to total firm book value ratio, and Y8: LR(TL)M is the total liabilities to total firm market ratio. For the explanatory variables, F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant and equipment to total assets, F4: GRO is the ratio of market to book value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of return of asset over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. d_idind and d_idctry are the dummy variables of industry and country. In addition, N is the number of observations, Adj.R^2 is the adjusted R square value, DW is the Durbin-Watson statistic. For the statistical judgments, ***, **, * denotes the 1%, 5% and 10% statistical significance level of the coefficients, respectively.

Variable	Y1: LR(LTD)B		Y2: LR(LTD)M		Y3: LR(TD)B		Y4: LR(TD)M		Y5: LR(TLCL)B		Y6: LR(TLCL)M		Y7: LR(TL)B		Y8: LR(TL)M	
	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat
(Constant)	-42.242***	-7.657	-26.948***	-4.934	-2.886	-.460	16.524**	2.336	-44.929***	-7.755	-23.631***	-4.007	25.107***	4.426	46.205***	6.911
F1: SIZE	3.853***	33.090	3.196***	27.692	3.220***	24.305	2.305***	15.440	4.024***	32.912	3.205***	25.751	2.580***	21.548	1.310***	9.285
F2: PRO	-9.437***	-10.298	-12.287***	-13.570	-20.659***	-19.816	-22.549***	-19.195	-9.111***	-9.470	-11.785***	-12.031	-17.702***	-18.787	-22.529***	-20.290
F3: TAN	21.926***	25.215	25.655***	29.718	7.342***	7.421	13.526***	12.131	24.228***	26.537	29.487***	31.720	-5.863***	-6.557	2.761***	2.620
F4: GRO	.018***	5.030	-.011***	-3.157	.013***	3.213	-.020***	-4.413	.015***	4.189	-.014***	-3.787	.009**	2.414	-.025***	-5.999
F5; NDTS	12.885**	2.227	-7.742	-1.353	22.667***	3.444	-13.757*	-1.855	6.137	1.010	-26.979***	-4.362	30.144***	5.067	-13.811**	-1.970
F6; LIQ	-.308***	-7.283	-.331***	-7.930	-1.249***	-25.982	-1.245***	-22.989	-.353***	-7.958	-.376***	-8.315	-1.662***	-38.235	-1.568***	-30.614
F7; INTR	-.905***	-4.449	-.738***	-3.680	-1.908***	-8.249	-1.751***	-6.716	-.723***	-3.385	-.515**	-2.371	-.881***	-4.213	-.857***	-3.478
F8; VOL	.080	.293	-.222	-.830	.353	1.145	-.132	-.379	.050	.176	-.386	-1.332	.256	.918	-.528	-1.607
I1 MUN	.875	.280	-12.166***	-3.929	-3.767	-1.059	-29.714***	-7.412	.427	.130	-14.591***	-4.364	-5.187	-1.613	-32.674***	-8.623
I2: DYN	5.829	.454	17.862	1.406	10.734	.735	43.575***	2.649	9.158	.680	28.968**	2.111	-1.513	-.115	43.713***	2.811
I3: HHI	-9.437***	-3.196	-6.874**	-2.348	-6.226*	-1.854	4.064	1.074	-10.484***	-3.381	-5.395	-1.708	-7.484**	-2.465	9.809***	2.741
C1: SMD	.005	.574	-.028***	-3.574	.014	1.597	-.038***	-3.816	.007	.870	-.031***	-3.671	.023***	2.881	-.045***	-4.753
C2: BANK	-.033	-1.584	-.084***	-4.048	-.046*	-1.930	-.116***	-4.320	-.019	-.854	-.072***	-3.204	-.031	-1.429	-.096***	-3.794
C3: GDP	-.024	-.352	-.235***	-3.532	-.091	-1.188	-.454***	-5.269	-.009	-.134	-.272***	-3.791	-.104	-1.502	-.456***	-5.601
C4: INF	.110	1.208	.673***	7.491	.283***	2.735	1.201***	10.297	.188*	1.964	.824***	8.476	.304***	3.255	1.249***	11.328
C5: TAX	.244**	2.187	.252**	2.286	.143	1.124	.224	1.567	.233**	1.990	.161	1.348	-.010	-.091	.088	.655
d_idind0	6.847***	6.188	2.844**	2.589	1.989	1.580	-4.882***	-3.442	6.859***	5.903	2.545**	2.151	6.412***	5.635	-4.039***	-3.012
d_idind1	-1.323**	-2.177	.366	.610	.516	.747	1.894**	2.431	-1.219*	-1.910	.061	.095	1.006	1.611	1.922***	2.609
d_idind2	3.390***	7.504	3.712***	8.303	.481	.936	.475	.820	3.247***	6.843	3.272***	6.770	3.502***	7.539	3.289***	6.008
d_idind4	.152	.154	-3.402***	-3.482	-2.998***	-2.668	-9.640***	-7.614	-.134	-.129	-4.953***	-4.691	-.928	-.914	-10.390***	-8.681
d_idind5	3.628***	5.871	2.269***	3.706	-3.160***	-4.495	-6.357***	-8.024	4.443***	6.847	2.762***	4.180	1.033	1.625	-4.178***	-5.580
d_idind6	6.965***	3.713	-4.220**	-2.277	-1.432	-.671	-18.082***	-7.520	6.073***	3.084	-6.891***	-3.437	3.244*	1.682	-17.945***	-7.895
d_idind9	1.355*	1.808	.505	.680	-4.391***	-5.149	-7.468***	-7.768	1.244	1.580	.331	.413	-1.097	-1.424	-4.930***	-5.428
d_idctry1	2.671	1.385	-6.262***	-3.281	.598	.273	-11.541***	-4.665	6.552***	3.234	-3.280	-1.590	2.952	1.488	-9.902***	-4.235
d_idctry2	-.567	-.746	5.196***	6.908	-4.228***	-4.890	6.053***	6.211	.717	.899	6.946***	8.546	-5.687***	-7.276	7.127***	7.738
d_idctry3	-2.167	-1.026	-8.229***	-3.939	-6.792***	-2.828	-15.390***	-5.686	1.764	.796	-2.919	-1.293	-3.275	-1.508	-12.673***	-4.953
d_idctry4	-1.480	-.784	2.184	1.168	-7.065***	-3.291	1.264	.523	-.520	-.263	2.933	1.454	-6.492***	-3.346	4.239*	1.854
d_idctry6	7.443***	6.884	3.230***	3.022	10.158***	8.258	3.797***	2.739	8.437***	7.432	3.381***	2.926	10.461***	9.409	3.054**	2.331
N	12107		12035		12107		12102		12105		12102		12107		12105	
Adj. R2	.211		.211		.194		.185		.221		.215		.220		.193	
F-Stat	116.520***		115.933***		104.985***		99.220***		123.626***		119.223***		122.790***		104.605***	
DW	.975		.840		.734		.771		1.085		.870		.788		.837	

Note: d_idind3 and d_idctry5 are the controlling variables.

Table 4.19 shows the regressions results only for developing ASEAN countries, or ASEAN, excluding Singapore. The results confirm that the firm-specific characters—firm size, profitability, tangible assets, growth opportunity, non-debt tax shield, liquidity, and interest rate—still have strong influences on many proxies of leverage. According to the hypothesis and theories, firm size and tangible assets has a statistically significant positive relation with leverage, while profitability, growth opportunity, non-debt tax shield, liquidity, and interest rate has a statistically significant negative relation with leverage. For the industry-level factors, the HH index has a significant negative relation with all of the proxies of leverage; however, munificence has a significant negative relation with the market total debt and market total liabilities leverage. Dynamism has a weak significant negative relation only with book long-term debt leverage. For the country-level factors, only inflation rate has a strong significant positive relation with all leverage ratios.

Table 4.20 shows the regressions results only for the developing ASEAN countries and dummies of industry and country. The firm-level factors confirm the same results—that seven of eight factors have significant influences on leverage. The HH index of industry has a significant negative relation with six of the eight proxies of leverage. All country-level factors have significant relations with three of the eight proxies of leverage, but some of their signs differ from the hypotheses. With regard to the controlling industry—Consumer Goods (d_idind3)—among the developing ASEAN countries, the results showed that firms within the industry of Industrials (d_idind2) has a significantly higher marginal leverage for all proxies. Firms within the industry of Consumer Services (d_idind5) has significantly higher marginal leverage for five proxies, but has a significantly lower leverage for three proxies. With regard to the controlling country—Thailand (d_idctry5)—among the developing ASEAN countries, the results showed that there are differences among all countries for three proxies of leverage, i.e. market long-term debt, market total debt, and market total liabilities. The country that provides the highest marginal leverage is Malaysia, followed by Vietnam. However, the country that indicates the lowest marginal leverage is the Philippines, followed by Indonesia.

Table 4.19 Regressions Results for the Leverage for ASEAN, excluding Singapore (Unregulated Industries)

This table displays the results of the panel data analysis with respect to leverage ratios of firms on the ASEAN Stock Exchanges for the years 2000-2011. The dependent variable is a leverage ratio defined in eight definitions; Y1: LR(LTD)B is the long-term debt to total firm book value ratio, Y2: LR(LTD)M is the long-term debt to total firm market value ratio, Y3: LR(TD)B is the total debt to total firm book value ratio, Y4: LR(TD)M is the total debt to total firm market value ratio, Y5: LR(TLCL)B is the long-term liabilities to total firm book value ratio, Y6: LR(TLCL)M is the long-term liabilities to total firm market value ratio, Y7: LR(TL)B is the total liabilities to total firm book value ratio, and Y8: LR(TL)M is the total liabilities to total firm market ratio. For the explanatory variables, F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant and equipment to total assets, F4: GRO is the ratio of market to book value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of return of asset over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. d_idind and d_idctry are the dummy variables of industry and country. In addition, N is the number of observations, Adj.R^2 is the adjusted R square value, DW is the Durbin-Watson statistic. For the statistical judgments, ***, **, * denotes the 1%, 5% and 10% statistical significance level of the coefficients, respectively.

Variable	Y1: LR(LTD)B		Y2: LR(LTD)M		Y3: LR(TD)B		Y4: LR(TD)M		Y5: LR(TLCL)B		Y6: LR(TLCL)M		Y7: LR(TL)B		Y8: LR(TL)M	
	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat
(Constant)	-39.920***	-11.063	-37.397***	-10.620	-9.136**	-2.295	-3.542	-.794	-35.592***	-9.360	-30.998***	-8.199	23.538***	6.770	30.468***	7.251
F1: SIZE	4.242***	30.837	3.571***	26.613	3.670***	24.174	2.658***	15.628	4.354***	30.044	3.530***	24.491	2.980***	22.480	1.602***	9.998
F2:PRO	-15.864***	-11.875	-21.291***	-16.386	-29.618***	-20.092	-35.910***	-21.742	-14.744***	-10.477	-20.524***	-14.662	-24.787***	-19.255	-35.860***	-23.052
F3: TAN	21.474***	21.308	24.666***	25.154	7.335***	6.596	12.207***	9.796	23.626***	22.254	27.469***	26.010	-5.685***	-5.854	1.378	1.175
F4: GRO	.017***	4.565	-.011***	-3.140	.012***	2.916	-.020***	-4.373	.015***	3.737	-.014***	-3.714	.008**	2.235	-.025***	-5.810
F5; NDTS	35.876***	5.330	11.270*	1.722	41.546***	5.594	-.853	-.102	25.297***	3.568	-9.813	-1.391	40.103***	6.183	-8.647	-1.103
F6; LIQ	-.281***	-6.125	-.301***	-6.737	-1.105***	-21.797	-1.110***	-19.544	-.331***	-6.841	-.350***	-7.274	-1.457***	-32.929	-1.394***	-26.066
F7; INTR	-.867***	-3.576	-.534**	-2.270	-1.545***	-5.776	-1.140***	-3.804	-.682***	-2.672	-.278	-1.096	-.749***	-3.206	-.237	-.839
F8; VOL	.164	.540	.053	.181	.356	1.061	.199	.531	.077	.242	-.127	-.399	.222	.757	.025	.070
I1 MUN	13.732***	4.780	4.838*	1.727	9.916***	3.128	-9.397***	-2.646	11.319***	3.740	1.214	.403	9.413***	3.400	-13.014***	-3.890
I2: DYN	-23.799*	-1.650	-17.874	-1.274	-16.135	-1.014	-.814	-.046	-7.005	-.461	7.119	.471	-14.651	-1.054	4.733	.282
I3: HHI	-6.184**	-2.100	-19.698***	-6.836	-19.781***	-6.087	-32.620***	-8.960	-9.078***	-2.926	-18.853***	-6.109	-9.756***	-3.438	-24.322***	-7.092
C1: SMD	-.017***	-2.644	.024***	3.900	-.059***	-8.432	.013	1.603	-.009	-1.305	.037***	5.463	-.064***	-10.318	.017**	2.279
C2: BANK	-.005	-.790	.012*	1.731	.029***	3.747	.045***	5.329	-.032***	-4.460	-.017**	-2.414	.020***	2.965	.045***	5.625
C3: GDP	-.048	-.501	-.539***	-5.798	.138	1.312	-.619***	-5.238	-.083	-.826	-.651***	-6.504	.162*	1.757	-.665***	-5.974
C4: INF	.553***	7.040	1.134***	14.852	.621***	7.159	1.582***	16.278	.666***	8.043	1.289***	15.651	.638***	8.428	1.635***	17.868
C5: TAX	-.009	-.113	.056	.745	-.005	-.058	.057	.599	-.032	-.401	.033	.415	-.159**	-2.149	-.082	-.921
N	9313		9266		9313		9312		9312		9312		9313		9313	
Adj. R^2	.201		.203		.191		.176		.205		.196		.225		.188	
F-Stat	147.410***		148.848***		138.503***		125.384***		149.356***		143.199***		169.731***		135.437***	
DW	.995		.827		.737		.756		1.120		.842		.713		.812	

Table 4.20 Regressions Results for Leverage for ASEAN excluding Singapore, Dummy (Unregulated Industries)

This table displays the results of the panel data analysis with respect to leverage ratios of firms on the ASEAN Stock Exchanges for the years 2000-2011. The dependent variable is a leverage ratio defined in eight definitions; Y1: LR(LTD)B is the long-term debt to total firm book value ratio, Y2: LR(LTD)M is the long-term debt to total firm market value ratio, Y3: LR(TD)B is the total debt to total firm book value ratio, Y4: LR(TD)M is the total debt to total firm market value ratio, Y5: LR(TLCL)B is the long-term liabilities to total firm book value ratio, Y6: LR(TLCL)M is the long-term liabilities to total firm market value ratio, Y7: LR(TL)B is the total liabilities to total firm book value ratio, and Y8: LR(TL)M is the total liabilities to total firm market ratio. For explanatory variables, F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant and equipment to total assets, F4: GRO is the ratio of market to book value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of return of asset over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. d_idind and d_idctry are the dummy variables of industry and country. In addition, N is the number of observations, Adj.R^2 is the adjusted R square value, DW is the Durbin-Watson statistic. For the statistical judgments, ***, **, * denotes the 1%, 5% and 10% statistical significance level of the coefficients, respectively.

Variable	Y1: LR(LTD)B		Y2: LR(LTD)M		Y3: LR(TD)B		Y4: LR(TD)M		Y5: LR(TLCL)B		Y6: LR(TLCL)M		Y7: LR(TL)B		Y8: LR(TL)M	
	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat
(Constant)	-49.486***	-6.355	-32.030***	-4.228	-19.965**	-2.317	13.374	.164	-50.203***	-6.118	-24.597***	-3.020	6.591	.880	41.499***	4.608
F1: SIZE	4.280***	30.332	3.649***	26.545	3.689***	23.624	2.744***	.000	4.374***	29.418	3.610***	24.455	2.965***	21.850	1.701***	10.420
F2:PRO	-15.544***	-11.589	-20.469***	-15.707	-31.135***	-20.978	-36.958***	.000	-14.509***	-10.268	-19.774***	-14.094	-25.838***	-20.036	-36.519***	-23.543
F3: TAN	22.721***	22.013	25.371***	25.304	6.425***	5.626	10.215***	.000	24.910***	22.908	28.252***	26.165	-5.907***	-5.952	-.241	-.202
F4: GRO	.017***	4.524	-.011***	-2.986	.012***	2.872	-.019***	.000	.014***	3.659	-.014***	-3.562	.007**	2.049	-.024***	-5.565
F5; NDTS	32.015***	4.620	14.422**	2.143	51.432***	6.708	21.963**	.010	22.121***	3.031	-4.440	-.613	44.705***	6.711	12.942	1.615
F6; LIQ	-.259***	-5.679	-.290***	-6.547	-1.083***	-21.422	-1.103***	.000	-.306***	-6.362	-.343***	-7.171	-1.421***	-32.368	-1.377***	-26.078
F7; INTR	-.808***	-3.363	-.509**	-2.189	-1.580***	-5.945	-1.229***	.000	-.622**	-2.458	-.260	-1.035	-.744***	-3.220	-.298	-1.073
F8; VOL	.139	.463	-.056	-.193	.388	1.165	.087	.815	.072	.228	-.227	-.721	.230	.795	-.146	-.419
I1 MUN	-1.199	-.286	-13.831***	-3.392	-6.188	-1.336	-32.040***	.000	-1.505	-.341	-11.716***	-2.675	-4.962	-1.233	-34.079***	-7.038
I2: DYN	2.182	.139	4.322	.284	1.323	.076	24.119	.211	14.178	.860	23.866	1.458	.002	.000	28.671	1.584
I3: HHI	-22.046***	-4.344	-17.228***	-3.479	-17.638***	-3.141	-1.246	.842	-26.643***	-4.983	-12.555**	-2.365	-15.887***	-3.256	7.489	1.276
C1: SMD	-.001	-.090	-.056***	-4.566	-.006***	-.420	-.075***	.000	.003	.225	-.051***	-3.846	.005	.370	-.089***	-6.050
C2: BANK	-.032	-1.042	-.067**	-2.260	-.007***	-.213	-.088***	.019	-.017	-.539	-.054*	-1.684	.022	.750	-.046	-1.305
C3: GDP	-.102	-.913	-.272**	-2.496	-.045***	-.367	-.365***	.008	-.094	-.797	-.359***	-3.066	-.036	-.333	-.303**	-2.337
C4: INF	.117	1.101	.677***	6.581	.214***	1.824	1.149***	.000	.210*	1.881	.908***	8.190	.258**	2.533	1.192***	9.721
C5: TAX	.335**	2.334	.268*	1.922	.378***	2.377	.166***	.349	.299**	1.977	.046	.307	.210	1.523	.005	.029
d_idind0	11.193***	6.273	6.745***	3.883	6.329***	3.206	-.785	.721	12.270***	6.528	5.898***	3.160	9.420***	5.492	-.616	-.298
d_idind1	-1.159	-1.619	.634	.912	.896	1.131	2.154**	.015	-1.026	-1.360	-.216	-.288	1.365**	1.982	2.259***	2.728
d_idind2	3.874***	7.046	4.306***	8.055	1.202**	1.976	1.514**	.026	3.739***	6.455	3.519***	6.118	3.733***	7.061	3.984***	6.266
d_idind4	1.638	1.204	-2.302*	-1.742	-.237	-.157	-8.339***	.000	1.626	1.135	-5.667***	-3.982	1.607	1.229	-8.506***	-5.407
d_idind5	3.977***	5.198	3.261***	4.382	-2.450***	-2.893	-4.953***	.000	4.566***	5.665	2.804***	3.502	1.779**	2.418	-2.257**	-2.551
d_idind6	9.414***	3.946	-2.430	-1.047	.342	.130	-17.994***	.000	9.676***	3.850	-6.253**	-2.505	4.741**	2.067	-18.111***	-6.564
d_idind9	3.022***	3.042	1.347	1.390	-3.729***	-3.393	-8.241***	.000	2.972***	2.840	.557	.536	-1.217	-1.274	-7.256***	-6.317
d_idctry1	2.289	.841	-6.115**	-2.314	3.544	1.178	-10.443***	.002	6.049**	2.111	-3.065	-1.077	7.184***	2.747	-7.038**	-2.237
d_idctry2	-.440	-.360	6.906***	5.813	-2.490*	-1.839	8.208***	.000	.520	.404	8.026***	6.271	-3.749***	-3.187	10.113***	7.147
d_idctry3	-1.492	-.593	-6.177**	-2.529	-4.671*	-1.679	-12.432***	.000	3.054	1.153	-.053	-.020	-.411	-.170	-8.200***	-2.820
d_idctry6	7.723***	5.989	2.644**	2.112	10.562	7.402	3.459**	.030	8.194***	6.031	2.127	1.576	10.526***	8.489	2.506**	1.680
N	9313		9266		9313		9312		9312		9312		9313		9313	
Adj. R^2	.216		.221		.202		.196		.218		.215		.243		.214	
F-Stat	96.240***		98.290***		88.452***		85.020***		97.364***		95.221***		111.753***		94.977***	
DW	.994		.818		.726		.752		1.118		.835		.692		.806	

Note: d_idind3 and d_idctry5 are the controlling variables.

Table 4.21 shows the regressions models for the ASEAN countries that has high stock market development (above a mean of C1: SMD), i.e. Singapore and Malaysia, and Table 4.22 includes their dummies of industry and country. The results confirm that the firm-specific characters—firm size, profitability, tangible assets, growth opportunity, non-debt tax shield, liquidity, and interest rate—still have strong influences on most of the leverage ratios. Especially, all three-level factors have statistically significant influences on the book long-term debt (Y1: LR(LTD)B, although some signs do not coincide with the hypotheses.

Based on the controlling industry—Consumer Goods (d_idind3)—between Malaysia and Singapore, the industry that has the highest marginal leverage in terms of book long-term debt is Oil & Gas (d_idind0), followed by Consumer Services (d_idind5), Industrials (d_idind2), Health Care (d_idind4), Telecommunications (d_idind6), Technology (d_idind9), and Basic Materials (d_idind1). Based on the controlling country—Singapore (d_idctry4)—Malaysia has significantly higher marginal leverage in terms of book long-term debt and book total debt, but has significantly marginal lower leverage in terms of market total liabilities.

Table 4.23 shows the regressions results for the ASEAN countries that has low stock market development (below a mean of C1: SMD), i.e. Indonesia, the Philippines, Thailand, and Vietnam, and Table 4.24 includes their dummies for industry and country. The results demonstrate that the firm-specific characters—firm size, profitability, tangibility of assets, growth opportunity, non-debt tax shield, liquidity, and interest rate—have influences on most of the leverage proxies. Particularly, all firm- and industry-level factors have statistically significant influences on the book long-term debt (Y1: LR(LTD)B, even though some expected signs of factors, i.e. growth opportunity, non-debt tax shield, and munificence, do not satisfy the hypotheses. The two country-level factors, i.e. stock market development and inflation rate, have statistically significant relations with all market-value leverage ratios.

Based on the controlling industry—Consumer Goods (d_idind3)—the industry that has the higher marginal leverage in terms of book long-term liabilities is Oil & Gas (d_idind0), followed by Telecommunications (d_idind6), Consumer Services (d_idind5), and Industrials (d_idind2). In contrast, the industry that has lower leverage

in terms of book long-term liabilities was Basic Materials (d_idind1). Based on the controlling country—Thailand (d_idctry0) as a baseline, Indonesia has a significantly higher marginal leverage in terms of book long-term liabilities, followed by Vietnam and the Philippines.

Table 4.21 Regressions Results for the Leverage for High Stock Market Development (Unregulated Industries)

This table displays the results of the panel data analysis with respect to leverage ratios of firms on the ASEAN Stock Exchange for the years 2000-2011. The dependent variable is a leverage ratio defined in eight definitions; Y1: LR(LTD)B is the long-term debt to total firm book value ratio, Y2: LR(LTD)M is the long-term debt to total firm market value ratio, Y3: LR(TD)B is the total debt to total firm book value ratio, Y4: LR(TD)M is the total debt to total firm market value ratio, Y5: LR(TLCL)B is the long-term liabilities to total firm book value ratio, Y6: LR(TLCL)M is the long-term liabilities to total firm market value ratio, Y7: LR(TL)B is the total liabilities to total firm book value ratio, and Y8: LR(TL)M is the total liabilities to total firm market ratio. For the explanatory variables, F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant and equipment to total assets, F4: GRO is the ratio of market to book value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of return of asset over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. d_idind and d_idctry are the dummy variables of industry and country. In addition, N is the number of observations, Adj.R^2 is the adjusted R square value, DW is the Durbin-Watson statistic. For the statistical judgments, ***, **, * denotes the 1%, 5% and 10% statistical significance level of the coefficients, respectively.

Variable	Y1: LR(LTD)B		Y2: LR(LTD)M		Y3: LR(TD)B		Y4: LR(TD)M		Y5: LR(TLCL)B		Y6: LR(TLCL)M		Y7: LR(TL)B		Y8: LR(TL)M	
	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat
(Constant)	-24.590***	-5.657	-10.954**	-2.528	-5.910	-1.203	10.582*	1.866	-30.104***	-6.850	-13.622***	-2.980	27.577***	6.028	49.196***	9.401
F1: SIZE	3.226***	21.794	2.792***	18.865	2.811***	16.808	2.217***	11.486	3.567***	23.835	3.078***	19.773	2.325***	14.924	1.278***	7.174
F2:PRO	-5.752***	-5.326	-10.419***	-9.696	-15.073***	-12.350	-19.814***	-14.073	-5.713***	-5.232	-11.084***	-9.759	-12.019***	-10.573	-19.853***	-15.273
F3: TAN	17.493***	15.143	21.728***	18.738	9.304***	7.128	15.252***	10.124	22.826***	19.546	29.377***	24.177	-4.605***	-3.788	3.940***	2.834
F4: GRO	.538***	7.620	-.637***	-9.057	.476***	5.972	-1.516***	-16.444	.700***	9.802	-.768***	-10.331	.705***	9.483	-1.977***	-23.258
F5; NDTS	-21.672**	-2.490	-41.516***	-4.780	-34.455***	-3.504	-68.903***	-6.074	-30.546***	-3.472	-64.062***	-7.001	-2.274	-.248	-53.197***	-5.080
F6; LIQ	-.565***	-8.789	-.673***	-10.531	-1.826***	-25.134	-1.977***	-23.599	-.569***	-8.761	-.659***	-9.752	-2.447***	-36.167	-2.425***	-31.345
F7; INTR	-.896***	-3.185	-.918***	-3.280	-1.846***	-5.806	-1.956***	-5.333	-.718**	-2.524	-.791***	-2.673	-.513*	-1.732	-1.029***	-3.040
F8; VOL	-.141	-.528	-.197	-.745	.115	.381	.052	.150	-.160	-.596	-.223	-.796	.184	.657	-.051	-.158
I1 MUN	-11.035***	-2.687	-11.009***	-2.686	9.444**	2.035	4.667	.872	-9.752**	-2.348	-11.132**	-2.575	.330	.076	.831	.168
I2: DYN	9.057	.542	6.724	.404	13.777	.729	35.376	1.623	-5.764	-.341	-6.706	-.381	-24.275	-1.380	12.741	.633
I3: HHI	8.155**	2.584	-2.421	-.768	-7.864**	-2.205	-19.482***	-4.735	7.970**	2.497	-3.053	-.919	-2.993	-.901	-14.005***	-3.686
C1: SMD	-.046***	-3.458	-.073***	-5.470	-.033**	-2.205	-.057***	-3.282	-.046***	-3.398	-.075***	-5.325	-.013	-.942	-.050***	-3.124
C2: BANK	-.131***	-5.167	-.140***	-5.544	-.106***	-3.680	-.102***	-3.094	-.132***	-5.143	-.139***	-5.218	-.112***	-4.184	-.099***	-3.233
C3: GDP	.063	.908	-.037	-.540	.070	.894	-.203**	-2.255	.086	1.224	-.041	-.558	-.031	-.423	-.267***	-3.204
C4: INF	-.880***	-3.580	-.505**	-2.059	-.599**	-2.156	.423	1.320	-.821***	-3.302	-.318	-1.229	-.262	-1.012	.705**	2.383
C5: TAX	.669***	6.479	.670***	6.504	.668***	5.722	.659***	4.894	.750***	7.181	.708***	6.517	.371***	3.417	.350***	2.818
N	6863		6827		6863		6858		6862		6858		6863		6861	
Adj. R^2	.154		.188		.184		.215		.195		.229		.226		.249	
F-Stat	78.879***		99.816***		97.521***		118.195***		104.703***		128.546***		126.186***		143.374***	
DW	1.066		.841		.760		.776		1.078		.891		.868		.877	

Note: The countries of high stock market development are Malaysia and Singapore.

Table 4.22 Regressions Results for the Leverage for High Stock Market Development, Dummy (Unregulated Industries)

This table displays the results of the panel data analysis with respect to leverage ratios of firms on the ASEAN Stock Exchanges for the years 2000-2011. The dependent variable is a leverage ratio defined in eight definitions; Y1: LR(LTD)B is the long-term debt to total firm book value ratio, Y2: LR(LTD)M is the long-term debt to total firm market value ratio, Y3: LR(TD)B is the total debt to total firm book value ratio, Y4: LR(TD)M is the total debt to total firm market value ratio, Y5: LR(TLCL)B is the long-term liabilities to total firm book value ratio, Y6: LR(TLCL)M is the long-term liabilities to total firm market value ratio, Y7: LR(TL)B is the total liabilities to total firm book value ratio, and Y8: LR(TL)M is the total liabilities to total firm market ratio. For the explanatory variables, F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant and equipment to total assets, F4: GRO is the ratio of market to book value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of return of asset over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. d_idind and d_idctry are the dummy variables of industry and country. In addition, N is the number of observations, Adj.R^2 is the adjusted R square value, DW is the Durbin-Watson statistic. For the statistical judgments, ***, **, * denotes the 1%, 5% and 10% statistical significance level of the coefficients, respectively.

Variable	Y1: LR(LTD)B		Y2: LR(LTD)M		Y3: LR(TD)B		Y4: LR(TD)M		Y5: LR(TLCL)B		Y6: LR(TLCL)M		Y7: LR(TL)B		Y8: LR(TL)M	
	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat
(Constant)	-26.268***	-4.355	-12.698**	-2.110	.243	.036	9.642	1.227	-33.606***	-5.505	-19.267***	-3.031	26.435***	4.167	37.200***	5.152
F1: SIZE	3.109***	20.592	2.716***	17.965	2.768***	16.199	2.247***	11.433	3.441***	22.520	3.002***	18.869	2.262***	14.248	1.354***	7.495
F2:PRO	-5.635***	-5.227	-10.166***	-9.465	-15.138***	-12.407	-19.758***	-14.079	-5.548***	-5.085	-10.772***	-9.484	-11.985***	-10.570	-19.542***	-15.149
F3: TAN	17.891***	14.989	22.205***	18.497	7.866***	5.823	13.366***	8.598	23.148***	19.162	29.639***	23.558	-5.020***	-3.999	3.528**	2.470
F4: GRO	.525***	7.435	-.624***	-8.872	.499***	6.245	-1.443***	-15.683	.691***	9.672	-.748***	-10.055	.728***	9.809	-1.881***	-22.268
F5; NDTS	-21.176***	-2.374	-40.770***	-4.572	-21.747**	-2.154	-52.195***	-4.495	-29.814***	-3.302	-62.242***	-6.623	5.357	.571	-42.874***	-4.017
F6; LIQ	-.550***	-8.553	-.658***	-10.289	-1.785***	-24.544	-1.922***	-22.972	-.554***	-8.517	-.643***	-9.496	-2.408***	-35.624	-2.377***	-30.900
F7; INTR	-.857***	-3.061	-.902***	-3.236	-1.877***	-5.924	-2.023***	-5.554	-.685**	-2.417	-.781***	-2.649	-.516*	-1.752	-1.073***	-3.205
F8; VOL	-.233***	-.880	-.290	-1.099	.111	.369	.037	.107	-.247	-.922	-.310	-1.112	.120	.429	-.149	-.469
I1 MUN	-6.160***	-1.182	-8.896*	-1.710	-1.295	-.219	-13.278*	-1.956	-4.366	-.827	-9.168*	-1.668	-2.237	-.408	-8.898	-1.426
I2: DYN	31.779***	1.672	18.553	.978	12.939	.601	25.149	1.016	10.345	.538	-1.030	-.051	-25.646	-1.283	-3.193	-.140
I3: HHI	1.357***	.320	-2.429	-.573	2.097	.437	-.351	-.064	1.784	.415	-2.225	-.497	-.978	-.219	-.273	-.054
C1: SMD	-.041***	-2.841	-.070***	-4.915	-.035**	-2.134	-.074***	-3.954	-.043***	-2.998	-.078***	-5.196	-.017	-1.127	-.073***	-4.279
C2: BANK	-.115***	-3.764	-.140***	-4.560	-.158***	-4.563	-.166***	-4.149	-.111***	-3.588	-.131***	-4.042	-.125***	-3.869	-.119***	-3.251
C3: GDP	.057***	.643	-.048	-.535	.024	.235	-.162***	-1.388	.108	1.196	.003	.030	-.003	-.027	-.123	-1.148
C4: INF	-.739***	-2.714	-.460*	-1.693	-.620**	-2.012	.035***	.097	-.758***	-2.749	-.420	-1.462	-.338	-1.181	.145	.445
C5: TAX	.527***	2.842	.587***	3.171	.614***	2.927	1.055***	4.367	.696***	3.708	.815***	4.168	.413**	2.117	.967***	4.358
d_idind0	7.483***	5.928	3.547***	2.816	4.868***	3.408	-3.227**	-1.964	6.491***	5.081	1.570	1.180	7.977***	6.009	-2.792*	-1.849
d_idind1	.287***	.324	1.725*	1.956	3.983***	3.984	4.862***	4.228	.741	.829	1.987**	2.133	3.135***	3.374	3.981***	3.765
d_idind2	3.910***	6.749	4.093***	7.069	1.863***	2.841	1.506**	1.997	3.693***	6.296	3.662***	5.993	3.786***	6.213	3.881***	5.597
d_idind4	3.878***	3.004	.281	.218	-.295	-.202	-6.230***	-3.708	2.889**	2.211	-.690	-.507	.147	.109	-8.433***	-5.459
d_idind5	5.208***	6.066	4.678***	5.446	-1.183	-1.218	-3.165***	-2.833	5.282***	6.079	4.688***	5.181	.267	.296	-2.217**	-2.158
d_idind6	3.295***	1.185	-.651	-.235	-5.741*	-1.824	-12.501***	-3.453	2.852	1.013	-2.037	-.695	.969	.331	-8.643***	-2.597
d_idind9	2.027***	2.195	1.906**	2.068	-2.681**	-2.566	-5.237***	-4.355	1.846**	1.976	1.335	1.372	-.470	-.484	-2.322**	-2.102
d_idctry2	1.439***	.666	1.595	.739	2.901***	1.187	-1.252	-.446	.329	.150	-.683	-.300	.493	.217	-4.896*	-1.895
N	6863		6827		6863		6858		6862		6858		6863		6861	
Adj. R^2	.163		.195		.190		.226		.202		.235		.236		.266	
F-Stat	56.804***		70.035***		68.266***		84.327***		73.395***		88.844***		89.199***		104.731***	
DW	1.069		.840		.756		.770		1.079		.889		.869		.873	

Note: d_idind3 and d_idctry4 are the controlling variables. The countries of high stock market development are Malaysia and Singapore.

Table 4.23 Regressions Results for the Leverage for Low Stock Market Development (Unregulated Industries)

This table displays the results of the panel data analysis with respect to leverage ratios of firms on the ASEAN Stock Exchanges for the years 2000-2011. The dependent variable is a leverage ratio defined in eight definitions; Y1: LR(LTD)B is the long-term debt to total firm book value ratio, Y2: LR(LTD)M is the long-term debt to total firm market value ratio, Y3: LR(TD)B is the total debt to total firm book value ratio, Y4: LR(TD)M is the total debt to total firm market value ratio, Y5: LR(TLCL)B is the long-term liabilities to total firm book value ratio, Y6: LR(TLCL)M is the long-term liabilities to total firm market value ratio, Y7: LR(TL)B is the total liabilities to total firm book value ratio, and Y8: LR(TL)M is the total liabilities to total firm market ratio. For the explanatory variables, F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant and equipment to total assets, F4: GRO is the ratio of market to book value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of return of asset over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. d_idind and d_idctry are the dummy variables of industry and country. In addition, N is the number of observations, Adj.R^2 is the adjusted R square value, DW is the Durbin-Watson statistic. For the statistical judgments, ***, **, * denotes the 1%, 5% and 10% statistical significance level of the coefficients, respectively.

Variable	Y1: LR(LTD)B		Y2: LR(LTD)M		Y3: LR(TD)B		Y4: LR(TD)M		Y5: LR(TLCL)B		Y6: LR(TLCL)M		Y7: LR(TL)B		Y8: LR(TL)M	
	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat
(Constant)	-47.494***	-11.433	-46.405***	-11.412	-2.682	-.568	-.183	-.036	-39.219***	-8.641	-33.357***	-7.395	32.204***	7.818	33.734***	6.930
F1: SIZE	4.579***	25.634	3.712***	21.260	3.622***	17.840	2.413***	10.958	4.563***	23.386	3.401***	17.535	2.837***	16.020	1.374***	6.563
F2:PRO	-17.565***	-10.060	-20.163***	-11.823	-31.906***	-16.075	-32.901***	-15.286	-16.818***	-8.819	-18.502***	-9.759	-27.360***	-15.803	-33.926***	-16.580
F3: TAN	25.570***	19.758	27.952***	22.106	6.179***	4.200	11.419***	7.158	24.973***	17.668	27.642***	19.671	-8.062***	-6.283	-1.417	-.934
F4: GRO	.016***	4.327	-.010***	-2.725	.011***	2.657	-.017***	-3.775	.014***	3.414	-.013***	-3.081	.007*	1.899	-.022***	-5.007
F5; NDTS	50.830***	6.149	28.584***	3.544	67.893***	7.225	25.660**	2.518	44.440***	4.922	8.458	.942	65.345***	7.972	25.411***	2.623
F6; LIQ	-.193***	-3.365	-.146***	-2.615	-.921***	-14.141	-.809***	-11.449	-.263***	-4.201	-.223***	-3.581	-1.225***	-21.548	-1.064***	-15.848
F7; INTR	-.853***	-2.819	-.401	-1.361	-1.631***	-4.740	-1.044***	-2.799	-.720**	-2.177	-.175	-.532	-.870***	-2.897	-.103	-.291
F8; VOL	1.850*	1.844	.731	.748	1.304	1.143	-.924	-.747	1.727	1.575	-.466	-.428	.073	.074	-2.945***	-2.504
I1 MUN	7.073*	1.919	-7.839**	-2.172	-1.578	-.377	-30.439***	-6.701	1.674	.416	-14.631***	-3.657	-.888	-.243	-36.320***	-8.411
I2: DYN	-25.675	-1.391	-11.454	-.635	-26.281	-1.253	-10.621	-.467	2.960	.147	28.591	1.427	-4.948	-.270	8.234	.381
I3: HHI	-11.470***	-3.466	-19.771***	-6.083	-19.825***	-5.270	-22.653***	-5.553	-12.769	-3.533	-15.154***	-4.217	-12.666***	-3.860	-14.659***	-3.780
C1: SMD	-.100***	-4.875	-.122***	-6.106	-.140***	-6.016	-.178***	-7.059	-.106***	-4.717	-.118***	-5.290	-.120***	-5.892	-.193***	-8.024
C2: BANK	.014*	1.779	.033***	4.415	.043***	4.931	.067***	7.119	-.015*	-1.856	-.002	-.202	.027***	3.505	.065***	7.289
C3: GDP	.375**	2.528	.020	.135	.436**	2.586	-.085	-.463	.397**	2.451	-.084	-.521	.349**	2.371	-.097	-.558
C4: INF	.302***	2.948	.676***	6.773	.392***	3.366	1.012***	8.023	.366***	3.276	.802***	7.222	.487***	4.798	1.011***	8.433
C5: TAX	.125	1.457	.369***	4.369	-.047	-.479	.281***	2.651	.084	.892	.302***	3.230	-.239***	-2.798	.186*	1.847
N	5244		5208		5244		5244		5243		5244		5244		5244	
Adj. R^2	.249		.246		.177		.190		.224		.205		.192		.204	
F-Stat	109.863***		107.366***		71.405***		77.851***		95.361***		85.585***		78.643***		85.116***	
DW	.915		.863		.741		.799		1.119		.867		.752		.839	

Note: The countries of low stock market development are Indonesia, the Philippines, Thailand, and Vietnam.

Table 4.24 Regressions Results for the Leverage for Low Stock Market Development, Dummy (Unregulated Industries)

This table displays the results of the panel data analysis with respect to leverage ratios of firms on the ASEAN Stock Exchanges for the years 2000-2011. The dependent variable is a leverage ratio defined in eight definitions; Y1: LR(LTD)B is the long-term debt to total firm book value ratio, Y2: LR(LTD)M is the long-term debt to total firm market value ratio, Y3: LR(TD)B is the total debt to total firm book value ratio, Y4: LR(TD)M is the total debt to total firm market value ratio, Y5: LR(TLCL)B is the long-term liabilities to total firm book value ratio, Y6: LR(TLCL)M is the long-term liabilities to total firm market value ratio, Y7: LR(TL)B is the total liabilities to total firm book value ratio, and Y8: LR(TL)M is the total liabilities to total firm market ratio. For the explanatory variables, F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant and equipment to total assets, F4: GRO is the ratio of market to book value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of return of asset over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. d_idind and d_idctry are the dummy variables of industry and country. In addition, N is the number of observations, Adj.R^2 is the adjusted R square value, DW is the Durbin-Watson statistic. For the statistical judgments, ***, **, * denotes the 1%, 5% and 10% statistical significance level of the coefficients, respectively.

Variable	Y1: LR(LTD)B		Y2: LR(LTD)M		Y3: LR(TD)B		Y4: LR(TD)M		Y5: LR(TLCL)B		Y6: LR(TLCL)M		Y7: LR(TL)B		Y8: LR(TL)M	
	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat
(Constant)	-59.094***	-7.050	-37.185***	-4.526	-21.461**	-2.243	20.794**	2.011	-55.623***	-6.075	-22.369**	-2.456	6.416	.772	53.008***	5.402
F1: SIZE	4.599***	25.159	3.738***	20.882	3.625***	17.376	2.370***	10.509	4.564***	22.861	3.390***	17.066	2.888***	15.937	1.369***	6.399
F2:PRO	-17.347***	-9.884	-19.914***	-11.586	-32.992***	-16.471	-34.042***	-15.723	-16.503***	-8.611	-18.146***	-9.516	-27.475***	-15.789	-34.488***	-16.786
F3: TAN	26.306***	19.965	28.210***	21.874	6.453***	4.291	11.105***	6.832	25.950***	18.035	28.578***	19.962	-7.382***	-5.650	-1.651	-1.070
F4: GRO	.016***	4.298	-.010***	-2.667	.011***	2.703	-.016***	-3.577	.013***	3.321	-.012***	-3.057	.007*	1.804	-.021***	-4.858
F5; NDTS	48.161***	5.674	29.750***	3.584	75.343***	7.778	39.506	3.773	40.564***	4.377	9.265	1.005	65.314***	7.761	35.564***	3.579
F6; LIQ	-.175***	-3.074	-.142**	-2.538	-.935***	-14.381	-.845***	-12.022	-.238***	-3.830	-.219***	-3.536	-1.209***	-21.414	-1.083***	-16.238
F7; INTR	-.817***	-2.720	-.383	-1.307	-1.688***	-4.926	-1.128***	-3.046	-.663***	-2.021	-.144	-.442	-.861***	-2.893	-.139	-.395
F8; VOL	1.901*	1.907	.441	.453	1.378	1.211	-1.368	-1.113	1.858	1.708	-.717	-.662	.145	.147	-3.490***	-2.991
I1 MUN	2.320***	.471	-11.376**	-2.352	-3.558	-.633	-31.861***	-5.243	-.508	-.094	-12.134**	-2.267	-6.034	-1.236	-37.220***	-6.455
I2: DYN	-19.489***	-.979	-18.211	-.933	-32.980	-1.452	-26.483	-1.079	2.138	.098	9.189	.425	-18.708	-.948	-14.254	-.612
I3: HHI	-13.315***	-2.238	-9.222	-1.576	-8.135	-1.198	2.933	.400	-22.047***	-3.393	-10.177	-1.574	-7.434	-1.260	10.410	1.495
C1: SMD	.013	.492	-.124***	-4.642	-.020	-.626	-.212***	-6.274	.008	.273	-.127***	-4.289	.002	.092	-.249***	-7.788
C2: BANK	.006	.158	-.013	-.386	.060	1.514	-.003	-.079	.024	.623	.004	.099	.062*	1.781	.019	.457
C3: GDP	-.063	-.368	-.015	-.089	-.019	-.097	-.056	-.268	-.021	-.112	-.121	-.656	-.059	-.353	.042	.211
C4: INF	.162	1.427	.665***	5.981	.224*	1.725	1.072***	7.637	.243*	1.954	.885***	7.162	.246**	2.183	1.080***	8.106
C5: TAX	.272*	1.776	.241	1.609	.204	1.168	.014	.076	.189	1.132	-.045	-.269	.079	.521	-.143	-.798
d_idind0	5.180**	2.002	3.697	1.446	-2.489***	-.843	-1.649	-.517	9.095***	3.218	7.485***	2.662	2.442	.952	.679	.224
d_idind1	-2.191**	-2.417	-.413	-.466	-1.187	-1.148	.251	.225	-1.716*	-1.734	-1.029	-1.045	.621	.692	1.107	1.044
d_idind2	3.077***	4.152	3.518***	4.852	-.143	-.169	-.051	-.056	3.408***	4.211	3.109***	3.861	4.009***	5.457	3.185***	3.672
d_idind4	-2.740	-1.565	-6.063***	-3.538	-4.471**	-2.238	-11.313***	-5.239	-.953	-.499	-7.861***	-4.133	-1.283	-.739	-10.646***	-5.195
d_idind5	2.096**	2.089	.841	.855	-4.715***	-4.118	-7.360***	-5.946	3.812***	3.479	1.473	1.351	1.837*	1.846	-3.488***	-2.969
d_idind6	4.493	1.469	-8.121***	-2.711	-2.183	-.625	-19.414***	-5.147	7.075**	2.119	-8.411**	-2.532	2.175	.717	-19.620***	-5.481
d_idind9	.817	.545	.829	.559	-1.647	-.962	-2.500	-1.351	2.197	1.341	2.859*	1.754	2.411	1.621	-.500	-.285
d_idctry1	5.780*	1.908	-3.651	-1.231	9.279***	2.684	-7.321*	-1.959	9.624***	2.909	-.392	-.119	11.299***	3.761	-6.188*	-1.745
d_idctry3	1.212	.415	-3.164	-1.106	1.319	.395	-5.702	-1.580	6.875**	2.153	4.579	1.441	3.189	1.100	-3.230	-.943
d_idctry6	9.537***	5.120	.022	.012	11.372***	5.349	-2.148	-.935	9.348***	4.596	-1.318	-.651	12.047***	6.522	-4.050*	-1.857
N	5244		5208		5244		5244		5243		5244		5244		5244	
Adj. R^2	.263		.256		.185		.203		.238		.218		.206		.220	
F-Stat	72.926***		69.964***		46.817***		52.485***		63.909***		57.371***		53.392***		57.949***	
DW	.913		.866		.734		.806		1.115		.872		.738		.848	

Note: d_idind3 and d_idctry5 are controlling variables. The countries of low stock market development are Indonesia, the Philippines, Thailand, and Vietnam

Considering the domestic bank claim on the private sector in each country per GDP (C2: BANK) as bank development, the countries that provides high bank development (above a mean of C2: BANK) is Malaysia, Thailand, and Vietnam, while the countries that provide low bank development (below a mean of C2: BANK) are Indonesia, the Philippines, and Singapore.

Table 4.25 shows the regressions results for the ASEAN countries that have high bank development and Table 4.26 includes their dummies of industry and country. The results show that the firm-specific characters—firm size, profitability, tangibility of assets, growth opportunity, non-debt tax shield, liquidity, and interest rate—have influences on all leverage proxies. The HH index of an industry has a negative relation with all proxies of leverage. Four of five of the country-level factors have statistically significant relations with market-value leverage in terms of long-term debt and total debt.

Regarding the controlling industry—Consumer Goods (d_idind3)—the industry that has significantly higher marginal leverage in terms of market-value total liabilities is Oil & Gas (d_idind0), followed by Industrials (d_idind2), and Basic Materials (d_idind1). On the other hand, the industries that have significantly lower leverage in terms of market-based total liabilities are Telecommunications (d_idind6), Health Care (d_idind4), Technology (d_idind9), and Consumer Services (d_idind5). Based on the controlling country—Thailand (d_idctry0)—Vietnam has significantly higher marginal leverage in terms of all book values, but Malaysia has significantly lower leverage ratios for all book values.

Table 4.27 shows the regressions results for the ASEAN countries that has low bank development and Table 4.28 includes their dummies for industry and country.

The results display that the firm-specific characters—firm size, profitability, tangibility of assets, growth opportunity, non-debt tax shield, liquidity, and interest rate—have influences on all leverage proxies; however, non-debt tax shield has an insignificant relation with market-value leverage in terms of total debt. Especially, all eight firm-level factors have statistically significant relations with the long-term liabilities market leverage. The munificence of an industry has statistically significant relations with all proxies of leverage. All five country-level factors have statistically significant relations with the market leverage in terms of total debt and total liabilities, but their signs do not satisfy the hypotheses.

Regarding the controlling industry—Consumer Goods (d_idind3)—the industry that has significantly lower leverage in terms of market total debt is Telecommunications (d_idind6), followed by Health Care (d_idind4), Technology (d_idind9), Oil & Gas (d_idind0), Consumer Services (d_idind5), and Industrials (d_idind2). According the controlling country—Singapore (d_idctry4)—the Philippines has significantly lower leverage ratios for all market-value proxies, followed by Indonesia.

Table 4.25 Regressions Results for the Leverage for High Bank Development (Unregulated Industries)

This table displays the results of the panel data analysis with respect to leverage ratios of firms on the ASEAN Stock Exchanges for the years 2000-2011. The dependent variable is a leverage ratio defined in eight definitions; Y1: LR(LTD)B is the long-term debt to total firm book value ratio, Y2: LR(LTD)M is the long-term debt to total firm market value ratio, Y3: LR(TD)B is the total debt to total firm book value ratio, Y4: LR(TD)M is the total debt to total firm market value ratio, Y5: LR(TLCL)B is the long-term liabilities to total firm book value ratio, Y6: LR(TLCL)M is the long-term liabilities to total firm market value ratio, Y7: LR(TL)B is the total liabilities to total firm book value ratio, and Y8: LR(TL)M is the total liabilities to total firm market ratio. For the explanatory variables, F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant and equipment to total assets, F4: GRO is the ratio of market to book value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of return of asset over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. d_idind and d_idctry are the dummy variables of industry and country. In addition, N is the number of observations, Adj.R^2 is the adjusted R square value, DW is the Durbin-Watson statistic. For the statistical judgments, ***, **, * denotes the 1%, 5% and 10% statistical significance level of the coefficients, respectively.

Variable	Y1: LR(LTD)B		Y2: LR(LTD)M		Y3: LR(TD)B		Y4: LR(TD)M		Y5: LR(TLCL)B		Y6: LR(TLCL)M		Y7: LR(TL)B		Y8: LR(TL)M	
	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat
(Constant)	-42.516***	-5.934	1.113	.163	-48.565***	-6.200	20.845**	2.417	-39.940***	-5.503	6.409	.892	-23.606***	-3.444	63.030***	7.968
F1: SIZE	4.071***	25.964	3.708***	24.768	4.077***	23.788	3.451***	18.283	4.335***	27.294	3.942***	25.080	3.281***	21.877	2.278***	13.162
F2:PRO	-22.768***	-12.698	-31.176***	-18.286	-47.259***	-24.109	-58.668***	-27.175	-23.369***	-12.866	-32.224***	-17.929	-39.355***	-22.942	-57.552***	-29.074
F3: TAN	23.033***	20.355	27.724***	25.747	10.471***	8.465	16.834***	12.354	25.371***	22.134	30.893***	27.233	-3.684***	-3.403	5.942***	4.756
F4: GRO	.360***	5.635	-.435***	-7.159	.439***	6.281	-.706***	-9.172	.372***	5.754	-.547***	-8.539	.491***	8.031	-.690***	-9.776
F5; NDTS	-6.495	-.771	-42.185***	-5.264	-39.506***	-4.288	-92.659***	-9.132	-14.993*	-1.756	-58.287***	-6.899	-24.496***	-3.038	-98.103***	-10.543
F6; LIQ	-.289***	-5.592	-.321***	-6.541	-1.090***	-19.324	-1.111***	-17.880	-.312***	-5.959	-.322***	-6.218	-1.442***	-29.202	-1.387***	-24.335
F7; INTR	-.950***	-3.454	-.980***	-3.752	-2.027***	-6.738	-2.126***	-6.417	-.655**	-2.351	-.711***	-2.577	-.933***	-3.545	-1.047***	-3.446
F8; VOL	.114	.385	.106	.378	.468	1.444	.464	1.298	.046	.154	.022	.074	.315	1.112	.345	1.055
I1 MUN	19.287***	5.200	.548	.155	21.660***	5.341	-16.120***	-3.610	21.286***	5.665	-2.190	-.589	24.083***	6.786	-19.221***	-4.694
I2: DYN	-38.887**	-2.427	-17.896	-1.172	-34.869**	-1.990	11.129	.577	-31.228*	-1.924	4.867	.303	-40.279***	-2.627	15.467	.874
I3: HHI	-4.451	-1.098	-15.986***	-4.104	-29.254***	-6.599	-41.473***	-8.496	-9.122**	-2.221	-20.455***	-5.033	-18.380***	-4.738	-34.532***	-7.714
C1: SMD	-.014*	-1.785	-.006	-.772	-.047***	-5.469	-.025***	-2.678	-.002	-.225	.006	.818	-.038***	-5.138	-.021**	-2.405
C2: BANK	.031	1.233	-.098***	-4.084	.148***	5.405	-.072**	-2.380	.040	1.593	-.103***	-4.111	.193***	8.053	-.058**	-2.089
C3: GDP	-.060	-.615	-.547***	-5.872	.165	1.542	-.598***	-5.077	-.127	-1.280	-.653***	-6.662	.177**	1.887	-.654***	-6.057
C4: INF	.539***	6.099	1.065***	12.676	.571***	5.908	1.462***	13.746	.734***	8.199	1.303***	14.710	.691***	8.177	1.576***	16.150
C5: TAX	-.010	-.067	-.521***	-3.851	.557***	3.580	-.195	-1.138	-.189	-1.314	-.684***	-4.793	.395***	2.901	-.585***	-3.723
N	7422		7393		7422		7421		7422		7421		7422		7422	
Adj. R^2	.183		.237		.224		.251		.198		.249		.257		.273	
F-Stat	105.142***		144.739***		135.212***		156.014***		115.858***		154.623***		161.627***		174.937***	
DW	1.069		.843		.736		.743		1.078		.842		.685		.803	

Note: The countries of high bank development are Malaysia, Thailand, and Vietnam.

Table 4.26 Regressions Results for the Leverage for High Bank Development, Dummy (Unregulated Industries)

This table displays the results of the panel data analysis with respect to leverage ratios of firms in the ASEAN Stock Exchanges for the years 2000-2011. The dependent variable is a leverage ratio defined in eight definitions; Y1: LR(LTD)B is the long-term debt to total firm book value ratio, Y2: LR(LTD)M is the long-term debt to total firm market value ratio, Y3: LR(TD)B is the total debt to total firm book value ratio, Y4: LR(TD)M is the total debt to total firm market value ratio, Y5: LR(TLCL)B is the long-term liabilities to total firm book value ratio, Y6: LR(TLCL)M is the long-term liabilities to total firm market value ratio, Y7: LR(TL)B is the total liabilities to total firm book value ratio, and Y8: LR(TL)M is the total liabilities to total firm market ratio. For the explanatory variables, F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant and equipment to total assets, F4: GRO is the ratio of market to book value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of return of asset over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. d_idind and d_idctry are the dummy variables of industry and country. In addition, N is the number of observations, Adj.R^2 is the adjusted R square value, DW is the Durbin-Watson statistic. For the statistical judgments, ***, **, * denotes the 1%, 5% and 10% statistical significance level of the coefficients, respectively.

Variable	Y1: LR(LTD)B		Y2: LR(LTD)M		Y3: LR(TD)B		Y4: LR(TD)M		Y5: LR(TLCL)B		Y6: LR(TLCL)M		Y7: LR(TL)B		Y8: LR(TL)M	
	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat
(Constant)	-32.228***	-3.131	-16.887*	-1.718	-14.135	-1.250	12.420	.997	-30.394***	-2.916	-17.867*	-1.725	13.821	1.403	46.545***	4.096
F1: SIZE	4.130***	25.729	3.662***	23.786	4.113***	23.323	3.406***	17.537	4.391***	27.012	3.909***	24.208	3.290***	21.423	2.239***	12.635
F2:PRO	-21.988***	-12.307	-29.756***	-17.440	-48.187***	-24.550	-59.026***	-27.295	-22.583***	-12.480	-30.666***	-17.062	-39.483***	-23.095	-56.972***	-28.885
F3: TAN	25.031***	21.411	28.931***	25.911	10.109***	7.871	14.650***	10.352	27.431***	23.168	32.112***	27.303	-3.351***	-2.996	4.130***	3.201
F4: GRO	.344***	5.438	-.436***	-7.228	.445***	6.400	-.673***	-8.785	.356***	5.551	-.547***	-8.580	.490***	8.081	-.655***	-9.374
F5; NDTS	-13.380	-1.551	-43.898***	-5.331	-33.861***	-3.573	-73.224***	-7.014	-21.439**	-2.454	-58.377***	-6.727	-21.493***	-2.604	-78.139***	-8.206
F6; LIQ	-.270***	-5.270	-.308***	-6.296	-1.062***	-18.893	-1.088***	-17.565	-.294***	-5.672	-.313***	-6.076	-1.406***	-28.710	-1.359***	-24.056
F7; INTR	-.890***	-3.273	-.908***	-3.503	-2.026***	-6.784	-2.105***	-6.401	-.596***	-2.166	-.632**	-2.312	-.903***	-3.470	-.989***	-3.296
F8; VOL	.080	.273	.005	.019	.511	1.585	.383	1.078	.013	.044	-.097	-.329	.301	1.074	.174	.538
I1 MUN	-1.990	-.412	-8.183*	-1.772	-8.565	-1.616	-29.666***	-5.081	1.148	.235	-7.362	-1.517	-5.969	-1.293	-29.799***	-5.595
I2: DYN	-12.142	-.702	-16.647	-1.006	5.734	.302	27.683	1.322	-2.529	-.144	7.747	.445	2.954	.178	29.071	1.522
I3: HHI	-38.299***	-5.044	-32.136***	-4.398	-49.731***	-5.962	-29.135***	-3.171	-42.347***	-5.507	-35.123***	-4.598	-49.405***	-6.800	-21.736**	-2.593
C1: SMD	.001	.104	-.035***	-2.709	-.008	-.506	-.054***	-3.252	.015	1.070	-.030**	-2.182	.006	.463	-.060***	-3.998
C2: BANK	-.068*	-1.937	-.079**	-2.361	-.036	-.941	-.087**	-2.066	-.053	-1.487	-.056	-1.603	.001	.039	-.045	-1.170
C3: GDP	-.136	-1.155	-.361***	-3.201	-.046	-.356	-.414***	-2.903	-.211*	-1.769	-.429***	-3.619	-.065	-.572	-.407***	-3.126
C4: INF	.036	.291	.707***	5.981	.135	.991	1.214***	8.106	.235*	1.877	.976***	7.836	.275**	2.318	1.356***	9.921
C5: TAX	.117	.587	-.049	-.256	.356	1.626	.135	.559	-.064	-.318	-.149	-.742	.128	.668	-.174	-.791
d_idind0	14.309***	6.773	9.655***	4.785	12.180***	5.248	4.151	1.624	14.689***	6.866	10.145***	4.774	16.101***	7.966	4.971**	2.132
d_idind1	-.100	-.124	1.289*	1.669	3.073***	3.457	3.566***	3.642	-.878	-1.072	-.015	-.019	2.821***	3.644	3.198***	3.581
d_idind2	5.181***	8.656	5.347***	9.346	2.236***	3.400	2.202***	3.039	4.790***	7.900	4.980***	8.269	4.874***	8.510	4.943***	7.480
d_idind4	6.477***	4.185	1.679	1.134	5.161***	3.035	-3.735**	-1.994	4.890***	3.119	-.966	-.620	6.002***	4.052	-4.963***	-2.904
d_idind5	5.337***	5.825	5.176***	5.906	-1.483	-1.473	-4.191***	-3.780	5.180***	5.582	4.246***	4.604	2.539***	2.896	-1.842*	-1.821
d_idind6	18.599***	6.491	8.857***	3.230	12.223***	3.883	-6.010*	-1.733	17.408***	5.999	6.216**	2.157	14.917***	5.441	-7.470**	-2.362
d_idind9	5.004***	4.826	3.497***	3.522	-1.417	-1.244	-6.161***	-4.910	4.664***	4.441	3.065***	2.939	.782	.788	-4.901***	-4.281
d_idctry2	-3.066**	-2.089	2.711*	1.935	-5.575***	-3.457	3.544**	1.995	-2.999**	-2.017	3.721**	2.519	-6.905***	-4.916	4.564***	2.817
d_idctry6	6.747***	4.498	1.497	1.044	8.836***	5.361	1.894	1.043	6.888***	4.533	.548	.363	7.887***	5.494	.043	.026
N	7422		7393		7422		7421		7422		7421		7422		7422	
Adj. R^2	.204		.250		.236		.262		.219		.262		.276		.291	
F-Stat	76.957***		99.794***		92.903***		106.120***		84.132***		106.560***		113.907***		122.833***	
DW	1.072		.839		.728		.743		1.079		.839		.670		.803	

Note: d_idind3 and d_idctry5 are the controlling variables. The countries of high bank development are Malaysia, Thailand, and Vietnam.

Table 4.27 Regressions Results for the Leverage for Low Bank Development (Unregulated Industries)

This table displays the results of the panel data analysis with respect to leverage ratios of firms in the ASEAN Stock Exchanges for the years 2000-2011. The dependent variable is a leverage ratio defined in eight definitions; Y1: LR(LTD)B is the long-term debt to total firm book value ratio, Y2: LR(LTD)M is the long-term debt to total firm market value ratio, Y3: LR(TD)B is the total debt to total firm book value ratio, Y4: LR(TD)M is the total debt to total firm market value ratio, Y5: LR(TLCL)B is the long-term liabilities to total firm book value ratio, Y6: LR(TLCL)M is the long-term liabilities to total firm market value ratio, Y7: LR(TL)B is the total liabilities to total firm book value ratio, and Y8: LR(TL)M is the total liabilities to total firm market ratio. For the explanatory variables, F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant and equipment to total assets, F4: GRO is the ratio of market to book value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of return of asset over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. d_idind and d_idctry are the dummy variables of industry and country. In addition, N is the number of observations, Adj.R^2 is the adjusted R square value, DW is the Durbin-Watson statistic. For the statistical judgments, ***, **, * denotes the 1%, 5% and 10% statistical significance level of the coefficients, respectively.

Variable	Y1: LR(LTD)B		Y2: LR(LTD)M		Y3: LR(TD)B		Y4: LR(TD)M		Y5: LR(TLCL)B		Y6: LR(TLCL)M		Y7: LR(TL)B		Y8: LR(TL)M	
	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat
(Constant)	-27.572***	-6.124	-33.005***	-7.100	20.810***	3.940	10.067*	1.658	-24.881***	-4.960	-25.489***	-4.908	53.693***	10.664	38.663***	6.440
F1: SIZE	3.660***	22.055	2.676***	15.657	2.321***	11.922	1.080***	4.824	3.741***	20.239	2.393***	12.499	1.826***	9.837	.198	.893
F2:PRO	-5.290***	-4.993	-5.968***	-5.480	-11.514***	-9.265	-9.018***	-6.315	-4.608***	-3.906	-4.508***	-3.689	-11.088***	-9.359	-10.406***	-7.367
F3: TAN	19.741***	15.332	22.264***	16.634	6.733***	4.457	14.216***	8.189	22.058***	15.382	27.155***	18.283	-7.255***	-5.038	1.519	.885
F4: GRO	.017***	5.165	-.009**	-2.520	.013***	3.255	-.016***	-3.633	.015***	4.099	-.011***	-2.917	.008**	2.233	-.022***	-4.976
F5; NDTS	24.279***	3.131	6.57*	.823	39.223***	4.312	-6.036	-.578	19.259**	2.230	-19.076**	-2.133	53.909***	6.216	8.456	.818
F6; LIQ	-.371***	-4.923	-.299***	-3.863	-1.563***	-17.657	-1.405***	-13.815	-.470***	-5.590	-.434***	-4.985	-2.191***	-25.967	-1.865***	-18.542
F7; INTR	-1.196***	-3.930	-.888***	-2.845	-2.228***	-6.243	-1.840***	-4.487	-1.204***	-3.555	-.737**	-2.100	-1.339***	-3.935	-1.340***	-3.302
F8; VOL	.926	1.175	-.774	-.957	.770	.833	-2.073*	-1.952	1.172	1.335	-1.622*	-1.785	1.242	1.410	-4.002***	-3.810
I1 MUN	-7.722*	-1.831	-5.108	-1.174	-3.089	-.624	-1.455	-.256	-9.274**	-1.974	-7.876	-1.618	-10.429**	-2.211	-3.972	-.706
I2: DYN	5.540	.264	29.122	1.349	51.462**	2.093	88.030***	3.115	7.902	.338	29.708	1.228	6.132	.262	68.506**	2.451
I3: HHI	-3.038	-1.152	-14.639***	-5.383	-6.906**	-2.231	-18.520***	-5.207	-3.384	-1.152	-11.802***	-3.877	-2.540	-.861	-13.425***	-3.816
C1: SMD	.003	.298	.014	1.613	-.010	-1.008	-.003	-.294	-.007	-.745	-.006	-.594	-.006	-.641	.002	.155
C2: BANK	-.105***	-4.918	.031	1.406	-.177***	-7.092	.065**	2.264	-.120***	-5.064	.040	1.645	-.179***	-7.540	.110***	3.869
C3: GDP	-.055	-.672	-.148*	-1.764	-.160*	-1.679	-.380***	-3.459	-.012	-.137	-.130	-1.379	-.185**	-2.029	-.378***	-3.482
C4: INF	.445***	3.102	.956***	6.474	.558***	3.314	1.279***	6.614	.434***	2.713	.803***	4.853	.414**	2.583	1.292***	6.757
C5: TAX	.047	.674	.184**	2.537	-.157*	-1.909	.022	.230	.089	1.143	.233***	2.876	-.257***	-3.276	-.041	-.440
N	4685		4642		4685		4681		4683		4681		4685		4683	
Adj. R^2	.240		.186		.185		.128		.239		.187		.192		.124	
F-Stat	93.658***		67.076***		67.311***		43.885***		92.766***		68.101***		70.418***		42.285***	
DW	.837		.891		.790		.869		1.131		.957		1.007		.963	

Note: The countries of low bank development are Indonesia, the Philippines, and Singapore.

Table 4.28 Regressions Results for the Leverage for Low Bank Development, Dummy (Unregulated Industries)

This table displays the results of the panel data analysis with respect to leverage ratios of firms in the ASEAN Stock Exchanges for the years 2000-2011. The dependent variable is a leverage ratio defined in eight definitions; Y1: LR(LTD)B is the long-term debt to total firm book value ratio, Y2: LR(LTD)M is the long-term debt to total firm market value ratio, Y3: LR(TD)B is the total debt to total firm book value ratio, Y4: LR(TD)M is the total debt to total firm market value ratio, Y5: LR(TLCL)B is the long-term liabilities to total firm book value ratio, Y6: LR(TLCL)M is the long-term liabilities to total firm market value ratio, Y7: LR(TL)B is the total liabilities to total firm book value ratio, and Y8: LR(TL)M is the total liabilities to total firm market ratio. For the explanatory variables, F1: SIZE is the natural logarithm of total assets in US dollar currency, F2: PRO is the ratio of earnings before tax to total assets, F3: TAN is the ratio of net property, plant and equipment to total assets, F4: GRO is the ratio of market to book value, F5: NDTS is the ratio of depreciation and depletion to total assets, F6: LIQ is the ratio of current assets to current liabilities, F7: INTR is the ratio of interest expenses of total debt to total debt, F8: VOL is the standard deviation of return of asset over the past five years, I1: MUN is the munificence of an industry defined as the ratio of the regression slope coefficient to average sales after regressing time against sales of an industry over the past five years, I2-DYN is the dynamism of an industry defined as the standard error of munificence regression slope coefficient to average sales, I3: HHI is the Herfindahl-Hirschman index defined as the sum of the squares of market shares of firms within an industry, C1: SMD is stock market development of a country defined as the ratio of market capitalization of listed firms to GDP, C2: BANK: is the bank development of a country defined as the ratio of domestic bank credit to GDP, C3:GDP is the country growth defined as the GDP growth rate, C4:INF is the inflation rate of a country defined by the consumer price index, and C5: TAX is the corporate tax rate of a country defined as the ratio of total tax rate to commercial profit. d_idind and d_idctry are the dummy variables of industry and country. In addition, N is the number of observations, Adj.R^2 is the adjusted R square value, DW is the Durbin-Watson statistic. For the statistical judgments, ***, **, * denotes the 1%, 5% and 10% statistical significance level of the coefficients, respectively.

Variable	Y1: LR(LTD)B		Y2: LR(LTD)M		Y3: LR(TD)B		Y4: LR(TD)M		Y5: LR(TLCL)B		Y6: LR(TLCL)M		Y7: LR(TL)B		Y8: LR(TL)M	
	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat	Coefficient	t-Stat
(Constant)	-40.628***	-6.202	-29.341***	-4.345	7.968	1.037	25.193***	2.862	-41.064***	-5.623	-17.547**	-2.318	39.259***	5.348	57.417***	6.614
F1: SIZE	3.574***	21.295	2.714***	15.699	2.177***	11.058	1.074***	4.760	3.676***	19.655	2.453***	12.656	1.723***	9.163	.255	1.149
F2:PRO	-5.256***	-4.979	-6.007***	-5.537	-11.786***	-9.517	-9.314***	-6.569	-4.476***	-3.805	-4.485***	-3.679	-11.180***	-9.451	-10.470***	-7.486
F3: TAN	18.606***	14.295	21.946***	16.231	5.149***	3.372	13.413***	7.671	20.735***	14.296	26.744***	17.791	-8.352***	-5.727	1.530	.887
F4: GRO	.017***	5.117	-.009**	-2.507	.013***	3.296	-.016***	-3.540	.015***	3.964	-.012***	-3.005	.008**	2.244	-.021***	-4.864
F5; NDTS	23.310***	2.976	10.166	1.260	44.427***	4.834	4.776	.454	17.355**	1.988	-15.231*	-1.684	54.852***	6.249	15.302	1.475
F6; LIQ	-.329***	-4.375	-.276***	-3.574	-1.538***	-17.446	-1.403***	-13.898	-.426***	-5.085	-.417***	-4.801	-2.158***	-25.623	-1.862***	-18.695
F7; INTR	-1.140***	-3.767	-.868***	-2.793	-2.278***	-6.416	-1.935***	-4.760	-1.142***	-3.386	-.714**	-2.043	-1.342***	-3.956	-1.393***	-3.473
F8; VOL	.944	1.206	-.794	-.989	.756	.823	-2.120**	-2.016	1.250	1.432	-1.578*	-1.745	1.198	1.366	-4.161***	-4.011
I1 MUN	-10.812**	-2.228	-18.665***	-3.723	-11.087*	-1.947	-25.197***	-3.863	-13.117**	-2.425	-23.522***	-4.194	-14.280***	-2.626	-27.207***	-4.230
I2: DYN	26.321	1.147	35.130	1.485	25.427	.944	45.652	1.480	30.411	1.189	33.336	1.257	9.202	.358	51.477*	1.693
I3: HHI	-3.114	-.863	-2.136	-.574	.886	.209	4.870	1.005	-2.367	-.589	2.309	.554	1.515	.375	9.899**	2.072
C1: SMD	.017	1.287	-.027**	-1.984	.013	.821	-.067***	-3.795	.011	.724	-.042***	-2.737	.010	.692	-.090***	-5.147
C2: BANK	-.055	-1.384	-.130***	-3.184	-.105**	-2.258	-.177***	-3.332	-.064	-1.452	-.115**	-2.518	-.130***	-2.937	-.228***	-4.343
C3: GDP	-.006	-.073	-.084	-.937	-.100	-.987	-.294**	-2.525	.045	.466	-.113	-1.133	-.127	-1.306	-.276**	-2.411
C4: INF	.335**	2.040	.502***	2.975	.369*	1.916	.572**	2.590	.309*	1.690	.444**	2.342	.266	1.443	.458**	2.105
C5: TAX	.342**	2.170	.856***	5.268	.201	1.088	.927***	4.379	.435**	2.476	.710***	3.901	.086	.488	1.060***	5.079
d_idind0	3.236**	1.996	-.318	-.190	-1.566	-.823	-8.348***	-3.834	2.830	1.567	-1.901	-1.015	2.519	1.387	-7.758***	-3.613
d_idind1	-2.205**	-2.277	-.655	-.656	-2.553**	-2.248	-.830	-.639	-.932	-.864	.148	.132	-1.100	-1.014	-.275	-.214
d_idind2	.790	.972	.956	1.140	-1.998**	-2.095	-2.794**	-2.559	.966	1.066	-.089	-.094	1.498	1.644	.150	.139
d_idind4	-5.900***	-3.828	-7.380***	-4.635	-8.952***	-4.951	-11.505***	-5.558	-4.553***	-2.651	-7.639***	-4.292	-6.317***	-3.658	-12.117***	-5.935
d_idind5	2.126**	2.204	-.287	-.288	-4.591***	-4.057	-8.151***	-6.292	4.070***	3.785	1.307	1.173	-.381	-.353	-6.036***	-4.724
d_idind6	.731	.253	-12.425***	-4.175	-5.187	-1.528	-20.638***	-5.311	.217	.067	-15.943***	-4.772	-.595	-.183	-19.038***	-4.967
d_idind9	-3.607***	-2.962	-2.928***	-2.329	-8.094***	-5.665	-8.799***	-5.375	-3.445**	-2.539	-3.500**	-2.487	-3.546***	-2.598	-4.268***	-2.645
d_idctry1	2.894	.894	-15.149***	-4.542	4.135	1.089	-23.797***	-5.471	3.187	.883	-13.370***	-3.576	3.175	.875	-31.814***	-7.417
d_idctry3	-3.557	-.832	-24.045***	-5.459	-4.199	-.837	-35.105***	-6.110	-4.424	-.928	-19.811***	-4.012	-4.366	-.911	-44.391***	-7.836
N	4685		4642		4685		4681		4683		4681		4685		4683	
Adj. R^2	.251		.198		.196		.146		.249		.196		.200		.147	
F-Stat	63.903***		46.765***		46.746***		33.129***		63.032***		46.725***		47.920***		33.345***	
DW	.836		.886		.789		.860		1.132		.955		1.008		.951	

Note: d_idind3 and d_idctry4 are the controlling variables. The countries of low bank development are Indonesia, the Philippines, and Singapore.

4.2.3 Hierarchical Linear Model (HLM)

Table 4.29 presents the HLM results for Y2: LR(LTD)M. The overall country average of leverage ratios is 9.730179. The level 1 (time) error variance is estimated at 93.97823 and the level 2 (firm) variance is estimated to be 89.45697, which is statistically significant (χ^2 = 2160.09869, p-value <0.001). The level 3 (industry) variance is estimated to be 24.15142, which is strongly statistically significant (χ^2 = 62.37254, p-value <0.001). The level 4 (country) is estimated to be 0.36601, which is insignificant (χ^2 = 2.38551, p-value >0.500).

According to the proportion of total variance that is accounted for at the group level, the calculations are as follows:

Level 1: The proportion of variance between times within firm is

$= \sigma^2 / (\sigma^2 + r_0 + u_{00} + v_{000})$ = 93.97823 / (93.97823+89.45697+ 24.15142 + 0.36601) = 0.451921 = 45.19%

Level 2: The proportion of variance between firms within industry is

$= r_0 / (\sigma^2 + r_0 + u_{00} + v_{000})$ = 89.45697 / (93.97823+89.45697+ 24.15142 + 0.36601) 0.43018= 43.02%

Level 3: The proportion of variance between industries within country is

. $= u_{00} / (\sigma^2 + r_0 + u_{00} + v_{000})$ = 24.15142 / (93.97823+89.45697+ 24.15142 + 0.36601) = 0.116139 = 11.61%

Level 4: The proportion of variance between countries is

$= v_{000} / (\sigma^2 + r_0 + u_{00} + v_{000})$ = 0.36601 / (93.97823+89.45697+ 24.15142 + 0.36601) = 0.00176 = 0.176%

The above calculations show that the sources with the most variance are at level 1: time (45.19%) and level 2: firm (43.02%). However, level 4: country (0.176%) provides the least variance.

Table 4.29 HLM Results for the Full Unconditional Model

Fixed Effect	Coefficient	S.E.	t-ratio	p-value
For INTRCPT1, π_0				
For INTRCPT2, β_{00}				
For INTRCPT3, γ_{000}				
INTRCPT4, δ_{0000}	δ_{0000} = 9.730179	1.627355	5.979	0.002
Random Effect	**Variance Component**	**S.D.**	**χ^2**	**p-value**
Level 1: σ^2,e	σ^2 = 93.97823	9.69424		
Level 2: INTRCPT1, r_0	r_0 = 89.45697	9.45817	2160.09869	<0.001
Level 3: INTRCPT1/INTRCPT2, u_{00}	u_{00} = 24.15142	4.91441	62.37254	<0.001
Level 4: INTRCPT1/ INTRCPT2/INTRCPT3, v_{000}	v_{000} = 0.36601	0.133965	2.38551	>0.500
Total Variance	207.95263			

Table 4.30 presents the HLM results for the simple model for Y2: LR(LTD)M. The simple model adds a fixed explanatory variable, time, to the full unconditional model. The time coefficient, which is a fixed effect, is insignificant (t-ratio = 1.064, p-value 0.312). Therefore, there is no relation between time and leverage.

Table 4.30 HLM Results for the Simple Model

Fixed Effect	Coefficient	S.E.	t-ratio	p-value
For INTRCPT1, π_0				
For INTRCPT2, β_{00}				
For INTRCPT3, γ_{000}				
INTRCPT4, δ_{0000}	δ_{0000} = 8.481622	1.568507	5.407	<0.001
For TIME, π1				
For INTRCPT2, β_{10}				
For INTRCPT3, γ_{100}				
INTRCPT4, δ_{1000}	δ_{1000} = 0.161759	0.152043	1.064	0.312
Level 1: σ^2,e	σ^2 = 65.40206	8.08715		
Level 2: residual:				
INTRCPT1, r_0	r_0 = 220.01739	14.83298	1545.04165	<0.001
TIME, r_1	r_1 = 2.78849	1.66988	890.13998	<0.001

Table 4.30 (Continued)

Fixed Effect	Coefficient	S.E.	t-ratio	p-value
Level 3: residual:				
INTRCPT1/INTRCPT2, u_{00}	u_{00} = 11.66113	3.41484	17.78838	0.165
TIME/INTRCPT2, u_{10}	u_{10} = 0.05283	0.22985	19.95383	0.096
Level 4: residual:				
INTRCPT1/ INTRCPT2/INTRCPT3, v_{000}	v_{000} = 0.13331	0.36512	6.30342	0.277
TIME/ INTRCPT2/INTRCPT3, v_{100}	v_{100} = 0.00068	0.02599	4.58296	>0.500
Total Variance				

In the study, there is a limitation in the sample size for the hierarchical or multilevel analysis. Snijders and Bosker (1999) suggests that the minimum group sample size is 10 for a 2-level analysis. Maas and Hox (2005) finds that the number of samples should be at least 50 groups so as to accurately estimate standard error at the second level. Afshartous (1995) finds that the minimum groups sample size should be 100, which will lead to accurate variance estimation for multilevel modeling. Based on the hierarchical analysis but using a different method, the maximum likelihood (ML) method performs better than the generalized least squares (GLS). Summing up, the number of samples for the hierarchical linear modeling is sufficient for each level. The sample size per group at a higher level is more important than at a lower level. For example, for a two-level analysis consisting of student level or level 1 (within group) and school level or level 2 (between groups), a larger number of students for each school (n_j is large when j = school) is more important than the total number of students for all schools (N_{ij} when i= students and j = schools).

CHAPTER 5

CONCLUSION

The paper scrutinizes the firm-, industry-, and country-specific effects on the financial leverage ratios of listed firms in Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam (ASEAN). Most prior papers focus on firm characteristics and few mentioned industry-specific variables. Hence, this paper discusses whether all three level attributes as independent variables affect capital structure decisions. Moreover, the independent variable is capital structure which is provided by eight definitions of leverage ratios, ranging from narrow to broader meanings—leverage ratio in terms of long-term debt, long-term liabilities, total debt, and total liabilities for both book and market value. Particularly, Singapore has the lowest leverage ratios in terms of long-term debt, total debt, and long-term liabilities; contrarily, Indonesia has the highest ones. These results were consistent with Kayo and Kimura (2011), however, for total liabilities leverage, the Philippines has the lowest, while Vietnam has the highest.

Indonesia has the highest tangibility of assets and interest rate. Malaysia has the lowest growth opportunity. The Philippines has the highest growth opportunity, liquidity, and business risk or volatility, but has the smallest profitability. Singapore has the largest firm size but the smallest interest rate. Actually, the average firm size of Indonesia, Malaysia, the Philippines, and Thailand is indifferent to that of Singapore. Thailand has the highest non-debt tax shield. Last, Vietnam has the highest profitability, but has the smallest firm size, the fewest tangible assets, the smallest non-debt tax shield, liquidity, and volatility.

Vietnam has the highest munificence and dynamism but has the lowest HH index. Malaysia has the lowest dynamism, but the Philippines has the lowest munificence and HH index. Moreover, Malaysia and Singapore has high stock market development, while Indonesia, the Philippines, Thailand, and Vietnam has the low one.

Based on domestic bank development, Thailand, Malaysia, and Vietnam has high bank development, but Indonesia, the Philippines, and Singapore has low bank development. Moreover, Vietnam has the highest economic development or GDP and inflation rate, but Thailand has the lowest GDP as well as Singapore has the lowest inflation rate. The Philippines has the highest corporate tax, while Singapore has the lowest corporate tax. The results for the variance component show that, for all proxies of leverage, the amount of variation in the industry-, and country-level characteristics is not greater than 25%. Most of the proportion is rooted in smaller-level factors, i.e. firm-level predictors according to previous studies. The results of the multiple linear regressions with the ordinary least squared method for all combined three-level factors—firm-, industry-, and country-level characteristics—show that firm size and tangibility are strongly significantly and positively related to eight proxies of leverage ratios, except that assets tangibility is significantly and negatively related to total liabilities book leverage. Profitability, liquidity, and interest rate are strongly significantly and negatively related to all leverage ratios, consistent with the theories and prior studies. Growth opportunity is strongly significantly and negatively related to all market-based leverage ratios, but was positive for all book-value leverage ratios. The non-debt tax shield is strongly significantly and negatively related to all leverage ratios, but is positively related to the total liabilities book leverage. Only business risk or volatility as a firm-specific attribute was insignificantly related to all leverage ratios. For the industry-level attribute, munificence as an industry is significantly and negatively related to the three market-value leverage ratios, i.e. leverage in terms of total debt, long-term liabilities, and total liabilities; however it is strongly significantly and positively to book leverage ratios in terms of long-term debt, total debt, and long-term liabilities. The dynamism of an industry is significantly and negatively related to long-term debt book leverage. However, the Herfindahl-Hirschman index is strongly significantly and negative related to seven of the eight leverage ratios, consistent with previous study of Kayo and Kimura (2011). The stock market development of the country is significantly and negatively related to book leverage ratios in terms of long-term debt, total debt, and total liabilities, which is consistent with the hypothesis and prior study (Giannetti, 2003) that equity financing can be raised from stock exchange resulting in lower leverage. Banking and economic development are

strongly significantly and positively related to total debt leverage ratios which is consistent with the hypothesis and the previous study of Demirguc-Kunt and Makimovic (1999). The country growth is significantly and positively related only to total debt book leverage, but is strongly negative for all market leverage ratios. Inflation rate is significantly and positively related to all eight proxies of leverage, contrasting with the hypothesis and the study of Homaifar et al. (1994), implying that the higher is the inflation rate in ASEAN, the higher is the financial leverage used as its capital structure. Corporate tax is significantly and positively related to long-term debt book leverage, total debt book leverage, and long-term liabilities leverage ratios, which is consistent with the hypothesis. Generally, there are different leverage ratios across industries. The only industry that has the higher leverage than based industry, Consumer Goods, is Industrials for all proxies of leverage. Specifically, the industry that has significantly higher long-term debt leverage than Consumer Goods is Industrials, followed by Gas & Oil, and Consumer Services. However, the industry that has a significantly lower long-term debt leverage than Consumer Goods is Telecommunications, followed by Health Care.

For ASEAN excluding Singapore, the results show that seven of eight firm-level predictors—firm size, tangibility, profitability, growth opportunity, non-debt tax shield, interest rate, and volatility—has a significant influence on leverage ratios. Moreover, all of the country-level factors exhibit significant relations only with market long-term debt and total debt leverage ratios, and there are different leverage ratios among industries and countries.

For the high stock market development group, all firm-, industry-, country-level predictors, as well as the dummies of industry and country, have a significant effect on the book long-term debt leverage ratio; however, only firm-level factors play an important role for the remaining leverage ratios. For the low stock market development group, seven of the eight firm-level predictors—firm size, tangibility, profitability, growth opportunity, non-debt tax shield, interest rate, and volatility—have a significant impact on leverage ratios.

For the high bank development group, firm size, tangibility, profitability, growth opportunity, non-debt tax shield, interest rate, volatility, as well as the HH index play an important role in the leverage ratios. However, most of the country-

level predictors have an effect on the market based leverage ratios. For the low bank development group, all firm-level factors have relations only with the market-value long-term liabilities leverage, but only seven firm-level factors have relations with other leverage ratios.

In sum, there are influences of the firm-specific factors on all eight definitions of capital structure, except for business volatility, and this is consistent with the theories and prior studies. Also, the country-specific factors are significantly related to capital structure, especially for the long-term debt market leverage. However, some industry-specific factors are significantly related to some capital structures.

As the study examines many level-specific characteristics affecting capital structures of listed firms in ASEAN, this study is distinguished by its broad measures of leverage ratios as a proxy of capital structures. Moreover, the cross-industry, cross-country capital structures among ASEAN is explored as well. Due to the limited data in some industry level in some country, the advance statistics beyond the multiple regressions is recommended for future research.

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APPENDICES

APPENDIX A

DATASTREAM DATABASE

DATASTREAM DATABASE

According to the Datastram database, the data is collected in order to construct related variables in the paper as follows:

LTD	Long-term debt (WC03251)
CE	Common Shareholder's equity (WC03501)
TE	Total shareholder's equity (WC03995)
MV	Market value or market capitalization (WC08001)
STD	Sort-term debt and current portion of long-term debt (WC03051)
TD	Total debt (WC03255)
TL	Total liabilities (WC03351)
TLTE	Total liabilities and shareholder's equity (WC03999)
TC	Total capital (WC03998)
TD_CE	Total debt % total common equity (WC08231)
TD_TC	Total debt % total capital (WC08221)
CL	Current liabilities (total) (WC03101)
MVTB	Market value to book-value (MVTB)
TA	Total assets (WC02999)
TA_USD	Total assets in USD
TA_lnUSD	Natural logarithm of total asset in USD (WC)
NS	Net sales or revenues (WC01001)
NS_USD	Net sales or revenues in USD
NS_lnUSD	Natural logarithm of net sales or revenues in USD (WC)
EBIT	Earnings before interest and taxes (WC18191)
INT	Interest expense of debt (WC10251)
PPE	Property, plant and equipment (net) (WC02501)
DD	Depreciation and depletion (cash flow) (WC04049)
DDA	Depreciation, depletion and amortization (WC01151)
CA	Total current assets (WC02201)

ROA	Return on assets
SDROA	Standard deviation of return of assets

Table A.1 Identification Number of Country

Country	Idcountry (Datastream)	Idcountry (Paper)	Dummy Variable
Indonesia	ID	101	d_idctry1
Malaysia	L	102	d_idctry2
Philippines	PH	103	d_idctry3
Singapore	T	104	d_idctry4
Thailand	Q	105	d_idctry5
Vietnam	VT	106	d_idctry6

Table A.2 Identification Number of Industry

Industry	Idindustry (Datastream)	Idindustry (Paper)	Dummy Variable	Number of Firms
Oil & Gas	0001	10001	d_idind0	103
Basic Materials	1000	10000	d_idind1	374
Industrials	2000	20000	d_idind2	1,172
Consumer Goods	3000	30000	d_idind3	629
Health Care	4000	40000	d_idind4	98
Consumer Services	5000	50000	d_idind5	338
Telecommunications	6000	60000	d_idind6	38
Utilities	7000	70000	d_idind7	77
Financials	8000	80000	d_idind8	694
Technology	9000	90000	d_idind9	219
Unclassified	9999	99999	d_idind999	8
Total				3,750

Table A.3 Number of Firms by Country

Idfirm (3750)		Idfirm (3835)		Country		
From - To	**Number**	**From - To**	**Number**	**Name**	**Idcountry (Datastream)**	**Idcountry (Paper)**
1-437	437	1-437	437	Indonesia	ID	101
438-1378	941	438-1408	971	Malaysia	L	102
1379-1614	236	1409-1652	244	Philippines	PH	103
1615-2354	740	1653-2420	768	Singapore	T	104
2355-2921	567	2421-3006	586	Thailand	Q	105
2922-3750	829	3007-3835	829	Vietnam	VT	106
Total	3,750		3,835			

Table A.4 Identification Number of Time by Year

Year	**Idtime**
2000	0
2001	1
2002	2
2003	3
2004	4
2005	5
2006	6
2007	7
2008	8
2009	9
2010	10
2011	11

Table A.5 Details of Dataset

Name	Type	Measures
n045000	Numeric	Ordinal
no3750	Numeric	Ordinal
no3835	Numeric	Ordinal
MktCode	String	Nominal
idfirm	Numeric	Ordinal
idctry	Numeric	Nominal
Industry	Numeric	Nominal
idind	Numeric	Nominal
idctryidind	Numeric	Nominal
idctry_ind_firm	Numeric	Nominal
idctryidindidyear	Numeric	Nominal
idctryidyear	Numeric	Nominal
Dsne	String	Nominal
Year	Numeric	Ordinal
time	Numeric	Ordinal
LTD	Numeric	Scale
CE	Numeric	Scale
TE	Numeric	Scale
MV	Numeric	Scale
STD	Numeric	Scale
TD	Numeric	Scale
TL	Numeric	Scale
TLTE	Numeric	Scale
TC	Numeric	Scale
TD_CE	Numeric	Scale
TD_TC	Numeric	Scale
CL	Numeric	Scale
MVTB	Numeric	Scale
MVTB2	Numeric	Scale

Name	Type	Measures
TA	Numeric	Scale
TA_USD	Numeric	Scale
TA_lnUSD	Numeric	Scale
NS	Numeric	Scale
NS_USD	Numeric	Scale
NS_lnUSD	Numeric	Scale
EBIT	Numeric	Scale
INT	Numeric	Scale
PPE	Numeric	Scale
DD	Numeric	Scale
DDA	Numeric	Scale
CA	Numeric	Scale
SDofROA5y	Numeric	Scale
Y1	Numeric	Scale
Y2	Numeric	Scale
Y3	Numeric	Scale
Y4	Numeric	Scale
Y5	Numeric	Scale
Y6	Numeric	Scale
Y7	Numeric	Scale
Y8	Numeric	Scale
F1	Numeric	Scale
F1_1	Numeric	Scale
F2	Numeric	Scale
F3	Numeric	Scale
F4	Numeric	Scale
F5	Numeric	Scale
F5_1	Numeric	Scale
F6	Numeric	Scale
F7	Numeric	Scale
F8	Numeric	Scale

Name	Type	Measures
I1	Numeric	Scale
I2	Numeric	Scale
I3	Numeric	Scale
I3_1	Numeric	Scale
C1	Numeric	Scale
C1_1	Numeric	Scale
C2	Numeric	Scale
C3	Numeric	Scale
C4	Numeric	Scale
C4_1	Numeric	Scale
C5	Numeric	Scale

Table A.6 Measures of Variables

Variable	Type of Variable	Level	Formula	Remark
Y1: LR(LTD)B	Dependent			
Y2: LR(LTD)M	Dependent			
Y3: LR(TD)B	Dependent			
Y4: LR(TD)M	Dependent			
Y5: LR(TLCL)B	Dependent			
Y6: LR(TLCL)M	Dependent			
Y7: LR(TL)B	Dependent			
Y8: LR(TL)M	Dependent			
TIME	Explanatory	Time		
F1: SIZE	Explanatory	Firm	= LN(TA_USD)	
F2: PRO	Explanatory	Firm	= (EBIT-INT)/TA	
F3: TAN	Explanatory	Firm	= PPE/TA	
F4: GRO	Explanatory	Firm	= MVTB	
F5: NDTS	Explanatory	Firm	= DD/TA	
F6: LIQ	Explanatory	Firm	= CA/CL	
F7: INTR	Explanatory	Firm	= INT/(STD+LTD)	

Variable	Type of Variable	Level	Formula	Remark
F8: VOL	Explanatory	Firm	= SDofROA5y	
I1: MUN	Explanatory	Industry	= MUN	
I2: DYN	Explanatory	Industry	= DYN	
I3: HHI	Explanatory	Industry	= HHI	
C1: SMD	Explanatory	Country	= SMDmkt	
C2: BANK	Explanatory	Country	= BANK	
C3: GDP	Explanatory	Country	= GDP	
C4: INF	Explanatory	Country	= INFcpi	
C5: TAX	Explanatory	Country	=TAX	

Table A.7 Currency in Datastream

Currency (Datastream)	3-digit Currency Code	Currency Name
RI	IDR	Indonesian Rupiah
M$	MYR	Malaysian Ringgit
PP	PHP	Philippine Peso
S$	SGD	Singapore Dollar
TB	THB	Thai Baht
VD	VND	Vietnamese Dong
A$	AUD	Australian Dollar
BD	BMD	Bermudian Dollar
C$	CAD	Canadian Dollar
CD	KYD	Caymanian Dollar
CH	CNY	Chinese Yuan Renminbi
IR	INR	Indian Rupee
I฿	ILS	Israeli Shekel
K$	HKD	Hong Kong Dollar
TW	TWD	Taiwan New Dollar
U$	USD	US Dollar
Z$	NZD	New Zealand Dollar
฿		

APPENDIX B

DATA ANALYSIS BY COUNTRTY AND INDUSTRY

DATA ANALYSIS BY COUNTRTY AND INDUSTRY

According to the all data in the paper, the summary statistics of variables by country and industry are showed as follows.

Table B.1 provides the summary statistics of leverage ratios in term of long-term debt by country and industry. For Indonesia, industries with high book-value of long-term debt ratios (Y1: LR(LTD)B) are Telecommunications and Utilities, and industries with high market value of long-term debt ratios (Y2: LR(LTD)M) are Oil & Gas and Telecommunications. However, industries with low book and market value of long-term debt ratios are Health Care and Technology**.**

For Malaysia, the industry with high book-value of long-term debt ratios (Y1: LR(LTD)B) are Utilities and Oil & Gas, and industries with high market value of long-term debt ratios (Y2: LR(LTD)M) are Utilities and Consumer Services. However, an industry with the lowest book and market value of long-term debt ratio is Technology**.**

For the Philippines, industries with high book-value of long-term debt ratios (Y1: LR(LTD)B) are Telecommunications and Utilities, and industries with high market value of long-term debt ratios (Y2: LR(LTD)M) are Utilities and Consumer Goods. However, industries with low book and market value of long-term debt ratios are Technology and Oil & Gas**.**

For Singapore, a Telecommunications industry has the highest book-value of long-term debt ratio (Y1: LR(LTD)B), but an industry with the highest market value of long-term debt ratio (Y2: LR(LTD)M) is Financials. However, a Technology industry has the lowest long-term debt ratio in term of both book and market value.

For Thailand, industries with high book-value of long-term debt ratios (Y1: LR(LTD)B) are Utilities, Telecommunications and Oil & Gas; while the Utilities industry has the highest market value of long-term debt ratios (Y2: LR(LTD)M). However, industries with low book and market value of long-term debt ratios are Technology, Consumer Services and Consumer Goods.

For Vietnam, industries with high book (Y1: LR(LTD)B) and market value (Y2: LR(LTD)M) of long-term debt ratios are Utilities, Oil & Gas and Industrials; though, industries with low book and market value of long-term debt ratios are Consumer Services and Technology**.**

Table B.1 Summary Statistics of Dependent Variables (Y1, Y2)

Country/Industry	**Code**	**Count**	**Y1: LR(LTD)B**			**Y2: LR(LTD)M**		
			$\bar{X}$**(%)**	**S.D.**	**N**	$\bar{X}$**(%)**	**S.D.**	**N**
Indonesia								
Oil & Gas	10110001	84	33.4800	28.5662	48	27.3758	20.8785	36
Basic Materials	10110000	876	23.5074	50.0816	701	20.0430	28.0547	645
Industrials	10120000	756	26.1272	37.8254	594	24.0368	28.1876	541
Consumer Goods	10130000	984	23.6592	67.8711	848	22.1379	27.8633	801
Health Care	10140000	144	4.0234	23.2494	137	3.7541	11.9884	131
Consumer Services	10150000	708	25.6816	57.8795	529	20.3669	24.0839	484
Telecommunications	10160000	96	50.5760	20.6051	58	25.5462	17.8069	46
Utilities	10170000	24	46.0514	15.4911	13	17.4346	10.8254	12
Financials	10180000	1404	22.1331	37.5004	1105	16.4563	25.3386	1020
Technology	10190000	168	10.1063	28.0673	117	6.5633	11.5618	105
Malaysia								
Oil & Gas	10210001	300	23.9055	23.2816	197	20.5430	22.4315	181
Basic Materials	10210000	1008	14.2995	35.9815	807	16.0651	20.8506	774
Industrials	10220000	3612	14.2982	33.0389	2923	15.5596	18.8879	2818
Consumer Goods	10230000	2316	10.4485	29.0479	1961	12.0146	17.3347	1906
Health Care	10240000	276	15.2114	21.5923	205	12.0853	17.5015	195
Consumer Services	10250000	816	19.7432	25.3560	681	24.0225	25.5260	657
Telecommunications	10260000	144	15.4563	17.0429	87	9.8508	12.6545	80
Utilities	10270000	156	35.9337	26.7855	144	35.6325	25.8450	141
Financials	10280000	1560	16.8698	21.1813	1314	21.7081	23.1850	1271
Technology	10290000	1032	8.1606	37.6526	733	7.8576	14.7252	694
Unclassified	10299999	72	35.8614	77.4222	17	-	-	0
Philippines								
Oil & Gas	10310001	120	7.0652	19.5482	108	3.7565	8.2497	89
Basic Materials	10310000	288	8.4728	20.1410	246	7.7126	16.7748	228
Industrials	10320000	372	17.1234	45.7423	354	21.2556	27.3614	353
Consumer Goods	10330000	300	24.4824	33.6152	242	27.1875	31.6175	217
Health Care	10340000	24	13.6462	12.4341	24	7.9223	6.8635	24
Consumer Services	10350000	312	12.1105	20.0271	263	8.4074	14.6917	253
Telecommunications	10360000	48	32.3084	32.7756	48	24.7631	23.9741	48
Utilities	10370000	156	31.2105	27.7034	132	28.4512	29.7872	113
Financials	10380000	1080	8.4876	15.5550	1016	10.8399	18.6007	951
Technology	10390000	132	-3.1378	35.9875	93	2.3047	6.7079	86
Singapore								

Country/Industry	Code	Count	Y1: LR(LTD)B			Y2: LR(LTD)M		
			$\bar{X}$(%)	S.D.	N	$\bar{X}$(%)	S.D.	N
Oil & Gas	10410001	408	16.0093	20.7351	262	10.9191	14.5575	224
Basic Materials	10410000	588	12.9320	23.1385	403	12.9859	20.1763	362
Industrials	10420000	3216	13.7294	23.3965	2579	13.5278	18.2691	2390
Consumer Goods	10430000	1368	10.2684	16.5104	997	8.9110	15.7908	924
Health Care	10440000	252	8.7728	12.6432	172	7.1248	13.4846	151
Consumer Services	10450000	888	18.6882	30.5341	696	15.3227	20.6074	628
Telecommunications	10460000	60	35.8006	58.3767	55	14.9114	19.2970	53
Utilities	10470000	96	18.8035	19.5892	81	18.4716	21.3732	77
Financials	10480000	1224	21.9189	23.1639	869	22.4889	23.3529	815
Technology	10490000	780	6.6215	13.7698	643	6.2217	11.3351	614
Thailand								
Oil & Gas	10510001	144	31.2991	23.3542	104	24.5595	20.4204	79
Basic Materials	10510000	852	17.1419	39.4138	695	15.1031	22.2430	638
Industrials	10520000	1392	18.0267	41.3695	1128	19.5617	25.0033	1023
Consumer Goods	10530000	1260	16.2103	40.3820	1130	14.5146	22.8469	1092
Health Care	10540000	228	22.3672	23.9487	192	17.8357	21.8059	186
Consumer Services	10550000	792	16.0972	33.5634	657	13.4646	23.2356	615
Telecommunications	10560000	72	37.2070	35.4904	58	25.0512	29.4921	50
Utilities	10570000	84	46.9863	16.2017	74	36.4006	13.5718	66
Financials	10580000	1668	22.0033	37.8335	1115	23.3223	27.1218	1074
Technology	10590000	288	15.1830	30.1861	236	13.3442	21.3168	206
Unclassified	10599999	24						
Vietnam								
Oil & Gas	10610001	180	19.2575	20.7391	73	15.6261	19.8707	59
Basic Materials	10610000	876	14.5381	20.5789	324	11.9254	21.0045	248
Industrials	10620000	4716	17.8343	22.3274	1731	15.5892	23.0405	1316
Consumer Goods	10630000	1320	11.8563	15.8832	536	9.1433	15.3291	394
Health Care	10640000	252	8.5875	12.6958	89	7.3050	13.6234	69
Consumer Services	10650000	540	8.1636	16.5213	172	6.9157	14.6008	136
Telecommunications	10660000	36	11.0243	14.8198	9	4.2109	6.3855	7
Utilities	10670000	408	24.5941	26.9038	131	20.196	27.1117	98
Financials	10680000	1392	12.0740	22.3617	484	8.3099	15.9351	372
Technology	10690000	228	9.1301	15.6752	83	6.8867	14.3308	59

Table B.2 shows the summary statistics of leverage ratios in term of total debt by country and industry. For Indonesia, industries with high total debt book-value ratios (Y3: LR(TD)B) are Telecommunications and Basic Materials, while industries with high total debt market value ratios (Y4: LR(TD)M) are Industrials, Oil & Gas, Consumer Goods and Basic Materials. However, an industry with the lowest total debt ratios is Health Care**.**

For Malaysia, the industry with high total debt book-value ratios (Y3: LR(TD)B) are Utilities and Health Care, as well as industries with high total debt market value ratios (Y4: LR(TD)M) are Utilities, Basic Materials and Financials. However, industries with low total debt book-value ratios are Technology and Telecommunications, whereas an industry with the lowest total debt market value ratio is Telecommunications.

For the Philippines, an industries with the highest book-value of total debt ratios (Y3: LR(TD)B) are Telecommunications, but industries with high market value of total debt ratios (Y4: LR(TD)M) are Consumer Goods and Utilities. An industry with the lowest total debt book-value ratio is Oil & Gas; however an industry with the lowest total debt market value ratio is Technology.

For Singapore, a Telecommunications industry has the highest total debt book-value ratio (Y3: LR(TD)B), but an industry with highest total debt market value ratios (Y4: LR(TD)M) is Basic Materials. However, the Health Care industry has the lowest total debt book-value ratio; but industries with low total debt market value ratios are Technology and Health Care.

For Thailand, industries with high book-value of total debt ratios (Y3: LR(TD)B) are Utilities, Telecommunications; also the Utilities industry has the highest market value of total debt ratios (Y4: LR(TD)M). However, the industry with lowest total debt ratio in both book and market value is Consumer Services.

For Vietnam, industries with high book-value of total debt ratios (Y3: LR(TD)B) are Telecommunications, Oil & Gas and Consumer Goods; as well as industries with high total debt market value ratios (Y4: LR(TD)M) are Oil & Gas and Basic Materials. An industry with the lowest total debt ratio is Consumer Services.

Table B.2 Summary Statistics of Dependent Variables (Y3, Y4)

Country/Industry	Code	Count	Y3: LR(TD)B			Y4: LR(TD)M		
			$\bar{X}$(%)	S.D.	N	$\bar{X}$(%)	S.D.	N
Indonesia								
Oil & Gas	10110001	84	43.1024	26.3610	48	39.7515	27.5707	39
Basic Materials	10110000	876	53.3633	96.6747	698	38.7517	35.3466	633
Industrials	10120000	756	52.8821	86.4045	594	40.6080	30.9990	542
Consumer Goods	10130000	984	43.2343	101.0165	849	39.3473	31.8037	807

Country/Industry	Code	Count	Y3: LR(TD)B			Y4: LR(TD)M		
			$\bar{X}$(%)	S.D.	N	$\bar{X}$(%)	S.D.	N
Health Care	10140000	144	13.3079	90.1732	137	17.0843	21.9216	130
Consumer Services	10150000	708	43.6044	78.9847	530	32.0089	28.5178	488
Telecommunications	10160000	96	54.1191	19.4483	58	28.1347	18.0734	46
Utilities	10170000	24	48.9831	13.2646	13	19.3470	10.7210	12
Financials	10180000	1404	33.1869	39.9839	1106	25.1539	29.7461	1017
Technology	10190000	168	49.8533	165.8909	119	19.2235	25.9599	109
Malaysia								
Oil & Gas	10210001	300	32.5094	58.9745	197	30.5166	28.0697	181
Basic Materials	10210000	1008	37.9091	97.8157	808	36.9736	29.1811	777
Industrials	10220000	3612	29.2977	91.8464	2923	32.5803	26.5701	2822
Consumer Goods	10230000	2316	24.7857	26.4633	1961	28.0076	26.6485	1905
Health Care	10240000	276	40.6630	146.7714	205	22.9198	22.4675	193
Consumer Services	10250000	816	34.5366	115.1502	679	35.9270	30.5570	667
Telecommunications	10260000	144	19.4807	18.9392	87	13.4379	17.1928	81
Utilities	10270000	156	42.6547	26.5273	144	41.9886	25.4236	141
Financials	10280000	1560	30.8968	89.0693	1313	36.9413	29.1208	1293
Technology	10290000	1032	19.4782	46.1418	733	15.2974	20.7524	687
Unclassified	10299999	72	109.2653	315.7773	17	100.0000	0.0000	17
Philippines								
Oil & Gas	10310001	120	11.8299	24.4296	108	14.8416	26.5531	91
Basic Materials	10310000	288	18.5184	154.6209	242	23.3971	30.0951	235
Industrials	10320000	372	20.4744	64.8175	354	31.6987	31.8089	350
Consumer Goods	10330000	300	36.6386	37.0387	242	41.4077	33.2414	228
Health Care	10340000	24	33.1570	16.0581	24	27.6233	16.1015	24
Consumer Services	10350000	312	22.8697	35.5529	263	17.2429	22.2021	245
Telecommunications	10360000	48	39.2708	31.6015	48	31.6228	26.6432	48
Utilities	10370000	156	36.2769	86.7971	132	40.6020	32.2914	112
Financials	10380000	1080	16.6849	43.0867	1016	26.0601	28.9069	974
Technology	10390000	132	14.2374	54.3199	93	8.8176	14.9590	85
Singapore								
Oil & Gas	10410001	408	35.6904	117.2906	262	23.9379	25.7161	226
Basic Materials	10410000	588	32.8406	30.9999	403	33.4613	29.7598	352
Industrials	10420000	3216	30.7334	81.6153	2583	28.3713	25.2554	2368
Consumer Goods	10430000	1368	27.9596	78.3290	997	26.8713	27.0913	885
Health Care	10440000	252	21.2790	18.8228	172	19.9827	22.8202	151
Consumer Services	10450000	888	25.6603	77.6405	695	25.2751	26.5341	642
Telecommunications	10460000	60	64.8363	104.8596	56	20.7319	22.3784	53
Utilities	10470000	96	31.9816	45.9023	81	28.7020	25.2014	75
Financials	10480000	1224	30.4204	28.6021	869	30.9657	26.8499	810
Technology	10490000	780	23.8590	92.2860	643	18.5301	22.5276	604
Thailand								
Oil & Gas	10510001	144	38.7484	23.1499	104	37.9209	28.3179	86
Basic Materials	10510000	852	43.5351	145.9937	693	35.4266	28.6761	623
Industrials	10520000	1392	33.1308	62.9787	1127	34.7017	29.6915	1033
Consumer Goods	10530000	1260	30.0737	80.2022	1131	31.5995	29.5439	1087

Country/Industry	Code	Count	Y3: LR(TD)B			Y4: LR(TD)M		
			$\bar{X}$(%)	S.D.	N	$\bar{X}$(%)	S.D.	N
Health Care	10540000	228	31.9443	26.8757	192	25.6571	24.3048	187
Consumer Services	10550000	792	24.7834	84.6624	658	23.7000	28.5781	617
Telecommunications	10560000	72	46.7094	32.7949	58	31.8099	29.0071	50
Utilities	10570000	84	51.1424	15.7370	74	40.5835	13.3567	66
Financials	10580000	1668	34.0088	65.5704	1117	35.9861	32.8021	1070
Technology	10590000	288	40.2684	93.3087	235	33.5594	28.6226	207
Unclassified	10599999	24						
Vietnam								
Oil & Gas	10610001	180	37.7344	20.9149	73	34.9457	23.8203	53
Basic Materials	10610000	876	37.0564	27.2653	324	34.1271	30.3211	214
Industrials	10620000	4716	36.1354	26.3793	1731	33.5892	29.2416	1209
Consumer Goods	10630000	1320	37.6950	27.7248	537	33.2806	29.2730	362
Health Care	10640000	252	28.5807	24.0383	89	25.4329	25.5231	59
Consumer Services	10650000	540	19.5391	22.3839	172	18.5977	23.5534	133
Telecommunications	10660000	36	39.1397	17.9967	9	23.4516	11.4874	7
Utilities	10670000	408	28.3936	27.6317	131	25.1383	29.0916	91
Financials	10680000	1392	26.6114	30.2541	484	21.4012	25.1869	340
Technology	10690000	228	28.5877	24.1276	85	26.1934	24.5444	54

Table B.3 provides the summary statistics of leverage ratios in term of total liabilities less current liabilities or long-term liabilities by country and industry. For Indonesia, an industry with the highest book-value of long-term liabilities ratio (Y5: LR(TLCL)B) are Technology, and an industry with the highest market value of long-term liabilities ratio (Y6: LR(TLCL)M) is Oil & Gas. An industry with the lowest book-value of long-term liabilities ratio is Utilities, but one with the lowest market value of long-term liabilities ratio is Health Care.

For Malaysia, the Technology is the industry with the highest book-value of long-term liabilities ratio (Y5: LR(TLCL)B), but the Utilities is the industry with the highest market value of long-term liabilities ratios (Y6: LR(TLCL)M). An industry with the lowest book-value of long-term liabilities ratio is Telecommunications, but one with the lowest market value of long-term liabilities ratio is Technology.

For the Philippines, industries with high book-value of long-term liabilities ratios (Y5: LR(TLCL)B) are Telecommunications and Industrials, and industries with high market value of long-term liabilities ratios (Y6: LR(TLCL)M) are Consumer Goods and Utilities. Nevertheless, the Technology is the industry with the both lowest long-term liabilities ratios.

For Singapore, a Telecommunications industry has the highest book-value of long-term liabilities ratio (Y5: LR(TLCL)B), but an industry with the highest market value of long-term liabilities ratios (Y6: LR(TLCL)M) is Financials. However, the Technology industry has the lowest long-term liabilities ratio in term of both book and market value.

For Thailand, an Utilities industry has the highest book-value of long-term liabilities ratios (Y5: LR(TLCL)B), whereas industries with high market value of long-term liabilities ratios (Y6: LR(TLCL)M) are Financials, Utilities and Oil & Gas. Industries with low book-value of long-term liabilities ratios are Consumer Services, Technology and Industrials, although ones with low market value of long-term liabilities ratios are consume services, Basic Materials and Consumer Goods.

For Vietnam, industries with high book (Y5: LR(TLCL)B) and market value (Y6: LR(TLCL)M) of long-term liabilities ratios are Utilities and Oil & Gas; but a Health Care industry has the lowest book-value of long-term liabilities ratio as well as a Telecommunications has the lowest long-term liabilities market value ratio.

Table B.3 Summary Statistics of Dependent Variables (Y5, Y6)

Country/Industry	Code	Count	Y5: LR(TLCL)B			Y6: LR(TLCL)M		
			$\bar{X}$(%)	S.D.	N	$\bar{X}$(%)	S.D.	N
Indonesia								
Oil & Gas	10110001	84	36.6080	28.9847	48	36.4017	27.8614	38
Basic Materials	10110000	876	30.1937	65.5890	685	28.0135	33.2492	602
Industrials	10120000	756	30.4513	48.0452	598	29.3183	30.2837	528
Consumer Goods	10130000	984	22.5131	89.5471	847	27.1381	30.9202	798
Health Care	10140000	144	7.3565	32.3015	137	5.5745	12.0214	130
Consumer Services	10150000	708	28.6439	67.0067	515	25.5577	27.1729	462
Telecommunications	10160000	96	51.6113	17.9852	54	27.7035	17.6223	44
Utilities	10170000	24	48.9089	14.8769	13	19.1661	11.1439	12
Financials	10180000	1404	29.4508	32.1659	181	27.3017	31.8224	156
Technology	10190000	168	28.5493	111.7605	117	12.3657	26.1335	98
Malaysia								
Oil & Gas	10210001	300	27.0813	24.0019	196	24.2205	24.5963	183
Basic Materials	10210000	1008	17.7471	44.3929	808	21.2236	22.1943	773
Industrials	10220000	3612	16.8400	32.0545	2899	19.2145	20.2349	2791
Consumer Goods	10230000	2316	14.0699	24.2331	1951	16.4434	20.0112	1897
Health Care	10240000	276	17.3232	21.2153	205	14.6886	19.4918	195
Consumer Services	10250000	816	21.2005	25.2789	639	26.8142	26.7360	621
Telecommunications	10260000	144	17.7950	20.5313	87	11.7688	17.1432	81

Country/Industry	Code	Count	Y5: LR(TLCL)B			Y6: LR(TLCL)M		
			$\bar{X}$(%)	S.D.	N	$\bar{X}$(%)	S.D.	N
Utilities	10270000	156	38.1223	28.1767	135	37.3286	26.2373	132
Financials	10280000	1560	20.8668	20.7631	506	30.2611	27.0658	490
Technology	10290000	1032	9.1877	45.9575	733	8.8681	15.7513	669
Unclassified	10299999	72	44.3239	83.3856	14	100.0000	0.0000	13
Philippines								
Oil & Gas	10310001	120	12.8396	21.7925	108	17.7242	29.2393	97
Basic Materials	10310000	288	9.3898	74.5714	231	20.3338	26.1816	216
Industrials	10320000	372	35.5784	116.7168	348	26.7178	31.1742	349
Consumer Goods	10330000	300	27.9543	46.1693	233	35.8427	33.5905	217
Health Care	10340000	24	16.5266	10.7675	24	12.3441	6.7942	24
Consumer Services	10350000	312	17.7354	21.1881	257	14.7693	20.1061	240
Telecommunications	10360000	48	37.8267	31.6341	48	28.4113	23.6459	48
Utilities	10370000	156	32.6027	61.8754	132	34.9733	32.0605	113
Financials	10380000	1080	16.7815	24.1218	422	29.1583	33.0796	391
Technology	10390000	132	0.2329	103.7955	89	9.6470	23.2957	75
Singapore								
Oil & Gas	10410001	408	18.5444	21.6589	262	15.0350	20.5098	224
Basic Materials	10410000	588	15.5777	26.1053	402	16.0877	23.5131	363
Industrials	10420000	3216	16.2731	35.0044	2569	16.1108	20.0156	2359
Consumer Goods	10430000	1368	12.0339	17.3961	996	11.4160	18.3654	898
Health Care	10440000	252	10.4551	14.8734	172	13.3430	24.1563	155
Consumer Services	10450000	888	21.1439	41.3493	683	20.3664	24.9764	628
Telecommunications	10460000	60	39.5339	46.1500	55	18.9127	23.2332	52
Utilities	10470000	96	21.8488	25.5515	81	19.5219	21.3177	76
Financials	10480000	1224	30.1317	26.7914	301	32.0418	28.2108	281
Technology	10490000	780	8.0161	14.4676	643	8.0018	13.6185	608
Thailand								
Oil & Gas	10510001	144	34.2318	25.0665	104	32.2448	28.8303	86
Basic Materials	10510000	852	18.2114	39.4024	695	16.4625	22.8223	636
Industrials	10520000	1392	17.7884	77.8740	1122	23.0681	27.8205	1040
Consumer Goods	10530000	1260	18.2278	41.2020	1119	16.9574	23.5316	1080
Health Care	10540000	228	23.1302	23.6889	193	19.0498	22.8064	188
Consumer Services	10550000	792	17.6761	33.6663	639	16.0810	25.8981	602
Telecommunications	10560000	72	37.2222	35.5635	58	25.4751	30.0968	50
Utilities	10570000	84	46.3990	15.7497	62	34.9216	12.9566	54
Financials	10580000	1668	33.8017	66.3988	316	37.3788	28.3245	305
Technology	10590000	288	17.7255	29.7706	236	21.9917	30.3996	221
Unclassified	10599999	24						
Vietnam								
Oil & Gas	10610001	180	25.0674	22.0524	73	26.1626	25.0576	52
Basic Materials	10610000	876	16.1978	21.3475	324	15.3362	23.2829	220
Industrials	10620000	4716	20.6922	23.3427	1728	21.0217	25.3505	1171
Consumer Goods	10630000	1320	13.4886	16.4173	535	11.7758	16.7144	351
Health Care	10640000	252	9.9163	12.6195	89	9.5650	14.7545	58
Consumer Services	10650000	540	11.3639	18.6923	172	13.2001	21.6066	116

Country/Industry	Code	Count	Y5: LR(TLCL)B			Y6: LR(TLCL)M		
			$\bar{X}$(%)	S.D.	N	$\bar{X}$(%)	S.D.	N
Telecommunications	10660000	36	12.5836	14.4773	9	4.9628	5.7792	7
Utilities	10670000	408	25.5672	26.5948	131	26.0219	27.8411	80
Financials	10680000	1392	15.8361	24.3102	389	12.8743	18.9326	254
Technology	10690000	228	10.5900	15.7893	85	10.0214	16.3810	58

Table B.4 displays the summary statistics of leverage ratios in term of total liabilities by country and industry. For Indonesia, a Consumer Goods industry has the highest book-value of total liabilities ratios (Y7: LR(TL)B), but a Health Care industry has the lowest one. According to market value, a Financials industry has the highest leverage ratio in term of total liabilities (Y8: LR(TL)M), but an Utilities industry has the lowest one.

For Malaysia, industries with high book-value of total liabilities ratios (Y7: LR(TL)B) are Health Care and Financials, while an industry with the highest market value of total liabilities ratios (Y8: LR(TL)M) is Financials. An industry with the lowest book-value of total liabilities ratio is Technology, but one with the lowest market value of total liabilities ratio is Telecommunications.

For the Philippines, industries with high book-value of total liabilities ratios (Y7: LR(TL)B are Industrials and Basic Materials. Industries with high market value of total liabilities ratios (Y8: LR(TL)M) are Consumer Goods, Utilities and Financials. However, an Oil & Gas industry has the lowest book-value of total liabilities ratio, but industries with low market value of total liabilities ratios are Technology, Consumer Services and Oil & Gas.

For Singapore, industries with high book-value of total liabilities ratios (Y7: LR(TL)B) are Utilities and Telecommunications, but industries with high market value of total liabilities ratios (Y8: LR(TL)M) are Financials, Basic Materials and Industrials. However, a Health Care industry has the lowest total liabilities ratios for book-value, whereas Health Care and Telecommunications industries have low market value of total liabilities ratios.

For Thailand, a Basic Materials industry has the highest book-value of total liabilities ratios (Y7: LR(TL)B), as well as a Financials industry has the highest market value of total liabilities ratios (Y8: LR(TL)M). However, a Health Care industry has the lowest leverage ratios in term of both book and market value.

For Vietnam, industries with high book-value of total liabilities ratios (Y7: LR(TL)B) are Oil & Gas and Industrials, but industries with high market value of total liabilities ratios (Y8: LR(TL)M) are Industrials and Oil & Gas. However, an industry with the lowest total liabilities book-value ratio is Consumer Services, industries with low total liabilities market value ratio are Telecommunications, Utilities Consumer Services and Health Care.

Table B.4 Summary Statistics of Dependent Variables (Y7, Y8)

Country/Industry	Code	Count	Y7: LR(TL)B			Y8: LR(TL)M		
			$\bar{X}$(%)	S.D.	N	$\bar{X}$(%)	S.D.	N
Indonesia								
Oil & Gas	10110001	84	57.2580	22.1054	48	52.6399	23.3543	36
Basic Materials	10110000	876	63.8667	48.7270	700	50.3544	31.1961	626
Industrials	10120000	756	61.0296	35.6859	598	52.9731	28.3226	530
Consumer Goods	10130000	984	73.6019	254.7494	850	49.3296	30.3910	806
Health Care	10140000	144	44.5363	33.1560	137	34.0018	23.6567	130
Consumer Services	10150000	708	63.0947	52.1483	530	49.1293	26.7532	483
Telecommunications	10160000	96	63.3428	15.5464	58	36.3287	17.8928	46
Utilities	10170000	24	56.3960	11.5999	13	24.1399	11.7067	12
Financials	10180000	1404	61.9994	33.2384	1106	54.1014	30.7294	999
Technology	10190000	168	45.8015	81.3981	119	31.5684	34.5016	100
Malaysia								
Oil & Gas	10210001	300	54.0653	20.0549	197	45.6351	27.2964	183
Basic Materials	10210000	1008	44.5179	26.9120	808	48.3036	25.6575	774
Industrials	10220000	3612	45.0621	43.8874	2924	47.0970	25.1155	2812
Consumer Goods	10230000	2316	38.6475	68.4747	1964	40.1937	25.3901	1900
Health Care	10240000	276	57.9899	112.0565	205	35.5456	21.5717	192
Consumer Services	10250000	816	51.9723	105.7978	681	48.6018	27.0653	664
Telecommunications	10260000	144	38.8850	21.5822	87	26.8228	18.2258	80
Utilities	10270000	156	52.2839	23.8530	144	51.0544	23.9550	141
Financials	10280000	1560	56.0069	96.8408	1318	57.5896	27.3143	1293
Technology	10290000	1032	32.1571	29.1786	725	28.9504	23.9307	653
Unclassified	10299999	72	562.1066	999.4391	17	100.0000	0.0000	17
Philippines								
Oil & Gas	10310001	120	21.9335	26.6355	108	32.6958	34.4693	99
Basic Materials	10310000	288	94.8323	451.5397	246	38.0981	33.0967	237
Industrials	10320000	372	101.8711	316.9829	351	43.0877	33.9085	351
Consumer Goods	10330000	300	49.8615	28.3548	242	52.9064	32.2346	226
Health Care	10340000	24	44.9316	10.7173	24	40.8248	18.4692	24
Consumer Services	10350000	312	39.5163	24.0271	263	31.2892	24.9426	244
Telecommunications	10360000	48	52.7988	25.8394	48	42.2901	27.1825	48
Utilities	10370000	156	60.5771	91.5110	132	50.3225	30.4333	112

Country/Industry	Code	Count	Y7: LR(TL)B			Y8: LR(TL)M		
			$\bar{X}$(%)	S.D.	N	$\bar{X}$(%)	S.D.	N
Financials	10380000	1080	67.0299	165.3565	1017	49.6961	33.3805	986
Technology	10390000	132	47.3401	40.3615	93	30.2773	31.1630	78
Singapore								
Oil & Gas	10410001	408	58.0734	60.7128	262	39.7170	25.4857	222
Basic Materials	10410000	588	45.0127	24.0806	403	46.7358	26.9493	350
Industrials	10420000	3216	52.6353	94.2289	2584	45.5622	24.3113	2354
Consumer Goods	10430000	1368	48.6389	88.4821	995	42.2351	28.0981	868
Health Care	10440000	252	36.2510	19.2142	172	32.4311	25.6279	155
Consumer Services	10450000	888	46.9123	23.5205	696	40.5979	23.9284	638
Telecommunications	10460000	60	61.8405	31.4295	56	33.6540	22.8397	53
Utilities	10470000	96	62.1392	109.9906	81	42.6362	25.0124	72
Financials	10480000	1224	46.6390	27.4271	869	47.4709	26.3714	810
Technology	10490000	780	45.0048	42.4371	643	39.0488	24.3075	602
Thailand								
Oil & Gas	10510001	144	50.6630	20.4600	104	48.0178	25.3452	86
Basic Materials	10510000	852	76.9858	331.6716	694	46.9831	26.1230	622
Industrials	10520000	1392	67.0374	168.0006	1129	48.0886	26.3016	1030
Consumer Goods	10530000	1260	43.8452	37.1166	1131	43.0030	27.7045	1087
Health Care	10540000	228	40.2206	23.9520	193	33.1679	22.9279	188
Consumer Services	10550000	792	46.0446	31.1575	658	37.3472	26.2289	612
Telecommunications	10560000	72	54.1185	27.3889	58	38.6398	39.6246	49
Utilities	10570000	84	54.4937	15.1150	74	44.2132	13.2722	66
Financials	10580000	1668	68.0234	166.9242	1119	56.0661	29.0891	1063
Technology	10590000	288	53.3938	28.4301	236	51.0661	27.0281	215
Unclassified	10599999	24						
Vietnam								
Oil & Gas	10610001	180	58.3538	17.3184	73	55.1593	22.5442	51
Basic Materials	10610000	876	51.4749	23.5301	324	48.4552	28.5191	198
Industrials	10620000	4716	56.7585	22.9645	1728	55.2435	25.8590	1102
Consumer Goods	10630000	1320	51.2502	21.8177	535	47.9515	24.2920	335
Health Care	10640000	252	47.9103	24.2120	89	40.4726	27.0690	57
Consumer Services	10650000	540	37.8035	22.3763	172	40.4227	24.7692	112
Telecommunications	10660000	36	55.9819	14.8219	9	39.0156	17.4328	7
Utilities	10670000	408	38.8214	24.3592	131	40.3082	26.4940	72
Financials	10680000	1392	53.4543	24.2910	482	49.9162	24.6314	277
Technology	10690000	228	50.2987	23.0818	85	46.3584	25.1167	53

Table B.5 shows the summary statistics of firm size (F1: SIZE) and profitability (F2: PRO) by country and industry. For Indonesia, the Utilities industry has the largest firm size but the Technology industry has the smallest one. According to profitability, the Health Care industry has the highest profitability but the Technology industry has the lowest one.

For Malaysia, the industry with the largest firm size (F1: SIZE) is Utilities, while the industry with the highest profitability (F2: PRO) is Health Care. However, the industry with the smallest firm size and the lowest profitability is Technology.

For the Philippines, industries with large firm size (F1: SIZE) are Utilities and Telecommunications. Industries with high profitability (F2: PRO) are Consumer Services, Health Care and Consumer Goods. However, a Technology industry has the smallest firm size, whereas, a Basic Materials industry has the lowest profitability.

For Singapore, the industry with the largest firm size (F1: SIZE) and profitability (F2: PRO) is Telecommunications. However, firms in Health Care industry have the smallest firm size and firms in Utilities industry have the lowest profitability.

For Thailand, the Oil & Gas industry has the largest firm size (F1: SIZE) and the highest profitability (F2: PRO). Though, the Health Care industry has the smallest firm size and the Financials industry has the lowest profitability.

For Vietnam, the Telecommunications industry has the largest firm size (F1: SIZE) and the highest profitability (F2: PRO). However, the Consumer Services industry has the smallest firm size and the Financials industry has the lowest profitability.

Table B.5 Summary Statistics of Independent Variables (Firm-level): F1, F2

Country/Industry	**Code**	**Count**	**F1: SIZE**			**F2: PRO**		
			$\bar{x}$	**S.D.**	**N**	$\bar{x}$	**S.D.**	**N**
Indonesia								
Oil & Gas	10110001	84	12.4858	1.6361	46	0.0879	0.1073	46
Basic Materials	10110000	876	11.4773	1.8994	701	0.0389	0.2153	672
Industrials	10120000	756	11.3716	1.5114	598	0.0448	0.4095	595
Consumer Goods	10130000	984	11.2832	1.6483	850	0.0641	0.5853	835
Health Care	10140000	144	10.8835	1.3289	137	0.1384	0.1526	137
Consumer Services	10150000	708	10.8060	1.6774	530	0.0177	0.2082	506
Telecommunications	10160000	96	14.1588	1.3398	58	0.0614	0.1456	58
Utilities	10170000	24	14.1999	0.6344	13	0.1343	0.1051	13
Financials	10180000	1404	11.9133	2.0512	1099	0.0279	0.1024	1004
Technology	10190000	168	9.9064	2.0590	116	-0.0065	0.4602	115
Malaysia								
Oil & Gas	10210001	300	12.3278	1.5039	197	0.0631	0.0990	193
Basic Materials	10210000	1008	11.3813	1.3466	808	0.0347	0.1181	805

Country/Industry	Code	Count	F1: SIZE			F2: PRO		
			$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N
Industrials	10220000	3612	10.9942	1.2423	2920	0.0463	0.5978	2911
Consumer Goods	10230000	2316	11.0785	1.2116	1962	0.0600	0.1338	1948
Health Care	10240000	276	10.9718	1.3298	205	0.0686	0.1739	203
Consumer Services	10250000	816	12.1630	1.6712	681	0.0457	0.1765	677
Telecommunications	10260000	144	12.3607	2.8097	87	0.0590	0.1489	87
Utilities	10270000	156	13.2564	2.1962	144	0.0470	0.0575	144
Financials	10280000	1560	12.4020	1.5619	1291	0.0421	0.8056	1289
Technology	10290000	1032	9.8475	1.4946	736	0.0013	0.2712	729
Unclassified	10299999	72	11.0968	1.5644	17	-0.8362	1.5427	17
Philippines								
Oil & Gas	10310001	120	10.9296	1.5254	108	0.0190	0.1471	104
Basic Materials	10310000	288	10.5867	1.4429	240	-0.2982	1.9598	230
Industrials	10320000	372	11.1054	2.2613	337	-0.0431	0.4761	333
Consumer Goods	10330000	300	11.6423	1.9421	242	0.0549	0.1254	239
Health Care	10340000	24	10.9488	0.6727	24	0.0627	0.0526	23
Consumer Services	10350000	312	10.9285	1.7297	262	0.0695	0.1697	245
Telecommunications	10360000	48	12.7861	2.5677	48	0.0275	0.1474	47
Utilities	10370000	156	12.7975	1.9072	131	-0.0663	1.3508	132
Financials	10380000	1080	11.1950	2.4159	991	-0.1097	1.1907	937
Technology	10390000	132	8.7283	1.5112	90	-0.0497	0.2815	81
Singapore								
Oil & Gas	10410001	408	11.7051	2.0282	265	-0.0117	0.8645	257
Basic Materials	10410000	588	11.4130	1.2606	403	0.0612	0.1828	403
Industrials	10420000	3216	11.2317	1.4740	2566	0.0308	0.4467	2569
Consumer Goods	10430000	1368	11.6033	1.5730	987	-0.0076	1.7937	991
Health Care	10440000	252	10.8334	1.3506	172	0.0729	0.1894	172
Consumer Services	10450000	888	11.5441	1.9397	694	0.0175	0.3838	686
Telecommunications	10460000	60	13.6343	2.2253	56	0.1524	0.3422	56
Utilities	10470000	96	11.5013	1.6390	81	-0.2238	2.0111	80
Financials	10480000	1224	13.0756	1.7984	830	0.0413	0.1335	840
Technology	10490000	780	10.8612	1.2043	643	-0.0132	0.4482	637
Thailand								
Oil & Gas	10510001	144	13.3705	2.3384	102	0.0958	0.1024	104
Basic Materials	10510000	852	11.2249	1.4984	693	0.0547	0.1803	691
Industrials	10520000	1392	10.9439	1.5942	1129	0.0491	0.7105	1118
Consumer Goods	10530000	1260	10.9119	1.0930	1131	0.0771	0.1600	1122
Health Care	10540000	228	10.5355	1.1739	193	0.0830	0.0934	188
Consumer Services	10550000	792	11.0705	1.5164	658	0.0622	0.1596	639
Telecommunications	10560000	72	13.1871	2.2581	58	0.0742	0.1342	58
Utilities	10570000	84	13.2977	1.1261	74	0.0743	0.0325	74
Financials	10580000	1668	11.9600	1.7413	1098	0.0279	0.2783	1084
Technology	10590000	288	10.9979	1.5364	236	0.0621	0.1332	233
Unclassified	10599999	24	-	-	0	-	-	0
Vietnam								
Oil & Gas	10610001	180	10.4253	1.8010	73	0.0868	0.0748	72

Country/Industry	Code	Count	F1: SIZE			F2: PRO		
			$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N
Basic Materials	10610000	876	9.9756	1.3245	324	0.1050	0.1118	313
Industrials	10620000	4716	9.5260	1.2842	1727	0.0815	0.0863	1692
Consumer Goods	10630000	1320	9.9196	1.1898	535	0.0944	0.0924	524
Health Care	10640000	252	9.4784	1.2296	88	0.1002	0.0887	88
Consumer Services	10650000	540	8.8187	1.5370	172	0.1127	0.0988	168
Telecommunications	10660000	36	11.8504	1.9944	9	0.1304	0.0949	9
Utilities	10670000	408	10.2035	1.4277	131	0.0968	0.0844	122
Financials	10680000	1392	10.9038	1.9566	481	0.0521	0.1296	398
Technology	10690000	228	9.4118	1.2011	85	0.0629	0.0912	82

Table B.6 shows the summary statistics of asset tangibility (F3: TAN) and growth opportunity (F4: GRO) by country and industry. For Indonesia, the Telecommunications industry has the highest tangibility but the Financials industry has the lowest one. According to growth, the Financials industry has the highest growth but the Oil & Gas industry has the lowest one.

For Malaysia, the industry with the highest tangibility (F3: TAN) is Utilities, but the industry with the lowest one is Technology. The industry with the highest growth (F4: GRO) is Telecommunications, but the industry with the lowest one is Consumer Goods.

For the Philippines, the Telecommunications industry has the highest tangibility (F3: TAN) but the Financials industry has the lowest one. According to growth opportunity (F4: GRO), the Consumer Services industry has the highest growth but the Oil & Gas industry has the lowest one.

For Singapore, the Consumer Services industry has the highest tangibility (F3: TAN) but the Technology industry has the lowest one. Referring to growth opportunity (F4: GRO), the Telecommunications industry has the highest growth but the Utilities industry has the lowest one.

For Thailand, the Health Care industry has the highest both tangibility (F3: TAN) and growth (F4: GRO). However, the industry with the lowest tangibility is Financials as well as the industry with lowest growth opportunity is Telecommunications.

For Vietnam, the industry with the highest tangibility (F3: TAN) is Utilities, but the industry with the lowest one is Financials. The industry with the highest growth (F4: GRO) is Oil & Gas, but the industry with lowest one is Utilities.

Table B.6 Summary Statistics of Independent Variables (Firm-level): F3, F4

Country/Industry	Code	Count	F3: TAN			F4: GRO		
			$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N
Indonesia								
Oil & Gas	10110001	84	0.4613	0.2005	46	1.6240	2.6115	45
Basic Materials	10110000	876	0.4017	0.2495	699	9.0191	136.6684	649
Industrials	10120000	756	0.4486	0.2498	595	1.9469	6.3673	552
Consumer Goods	10130000	984	0.4158	0.2123	850	5.7707	46.5783	849
Health Care	10140000	144	0.2633	0.2052	137	2.9890	6.0378	130
Consumer Services	10150000	708	0.3783	0.2444	530	23.0742	248.2157	534
Telecommunications	10160000	96	0.6834	0.2192	58	2.0522	7.4877	58
Utilities	10170000	24	0.5824	0.1632	13	5.5333	3.2794	12
Financials	10180000	1404	0.1515	0.2277	1106	32.3589	266.9421	1049
Technology	10190000	168	0.1792	0.1909	118	3.3963	18.7499	110
Malaysia								
Oil & Gas	10210001	300	0.4063	0.2236	197	1.8918	1.9750	205
Basic Materials	10210000	1008	0.4146	0.1824	808	0.9740	1.2559	780
Industrials	10220000	3612	0.3517	0.1989	2918	0.9732	3.3254	2900
Consumer Goods	10230000	2316	0.4198	0.2014	1960	-2.0622	143.5429	1932
Health Care	10240000	276	0.4219	0.1688	205	1.6077	1.6297	204
Consumer Services	10250000	816	0.3851	0.2289	681	1.3168	2.2937	688
Telecommunications	10260000	144	0.3186	0.2546	87	2.3632	3.3389	92
Utilities	10270000	156	0.4241	0.2528	144	1.2990	1.2369	141
Financials	10280000	1560	0.3314	0.2857	1311	0.8051	1.2539	1343
Technology	10290000	1032	0.2030	0.1894	733	1.5027	1.9242	668
Unclassified	10299999	72	0.4382	0.2307	17	0.0000	0.0000	72
Philippines								
Oil & Gas	10310001	120	0.4159	0.2685	108	1.1030	1.8504	99
Basic Materials	10310000	288	0.4669	0.2963	248	1.8549	74.5230	248
Industrials	10320000	372	0.339	0.2722	321	5.3842	57.2205	351
Consumer Goods	10330000	300	0.3669	0.2055	242	1.2092	3.7704	252
Health Care	10340000	24	0.5761	0.1447	24	1.5854	1.1672	24
Consumer Services	10350000	312	0.3946	0.2375	262	55.0348	464.3850	256
Telecommunications	10360000	48	0.6573	0.2965	48	2.6902	3.3016	48
Utilities	10370000	156	0.3811	0.2477	130	1.6949	3.1182	113
Financials	10380000	1080	0.1941	0.2715	968	24.1648	508.1694	1015
Technology	10390000	132	0.1969	0.1772	91	37.4177	240.4168	87
Singapore								
Oil & Gas	10410001	408	0.2780	0.2197	262	1.6111	2.1038	252
Basic Materials	10410000	588	0.3340	0.2110	403	1.0506	1.9696	372

Country/Industry	Code	Count	F3: TAN			F4: GRO		
			$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N
Industrials	10420000	3216	0.3048	0.2147	2581	1.4312	4.5640	2418
Consumer Goods	10430000	1368	0.2939	0.1834	990	1.3715	2.3389	903
Health Care	10440000	252	0.2678	0.1778	172	1.6475	1.7141	183
Consumer Services	10450000	888	0.3703	0.2614	696	1.8456	6.2270	697
Telecommunications	10460000	60	0.3375	0.2599	56	9.3819	34.5420	53
Utilities	10470000	96	0.2306	0.1978	81	-0.0231	15.7619	74
Financials	10480000	1224	0.3458	0.3660	851	1.0445	2.1648	858
Technology	10490000	780	0.1786	0.2023	639	1.7293	4.7605	633
Thailand								
Oil & Gas	10510001	144	0.5072	0.1524	104	1.4347	1.2063	91
Basic Materials	10510000	852	0.4077	0.2121	695	1.3489	2.2427	622
Industrials	10520000	1392	0.4132	0.2365	1129	1.6862	7.8343	1101
Consumer Goods	10530000	1260	0.3683	0.1748	1131	1.1199	1.8067	1098
Health Care	10540000	228	0.6735	0.1703	193	2.2617	6.8553	211
Consumer Services	10550000	792	0.3889	0.2624	658	1.0937	18.2973	674
Telecommunications	10560000	72	0.3022	0.2742	58	-1.2956	27.2954	50
Utilities	10570000	84	0.6333	0.1901	74	1.5424	0.5938	67
Financials	10580000	1668	0.1849	0.2500	1114	0.9257	1.3905	1402
Technology	10590000	288	0.2013	0.1503	236	1.4433	1.7177	223
Unclassified	10599999	24	-	-	0	-	-	24
Vietnam								
Oil & Gas	10610001	180	0.2863	0.2099	73	1.5465	2.0870	63
Basic Materials	10610000	876	0.3084	0.2170	324	1.0665	1.8765	332
Industrials	10620000	4716	0.2869	0.2122	1732	0.8261	1.1772	1815
Consumer Goods	10630000	1320	0.2661	0.1616	537	0.9532	1.1515	500
Health Care	10640000	252	0.2131	0.1359	88	1.1883	1.7437	86
Consumer Services	10650000	540	0.2899	0.2531	172	0.6840	1.3541	244
Telecommunications	10660000	36	0.1544	0.0777	9	1.2053	2.5391	19
Utilities	10670000	408	0.5480	0.2492	131	0.6236	0.9204	161
Financials	10680000	1392	0.0991	0.1470	485	0.9456	1.4288	457
Technology	10690000	228	0.1463	0.1517	85	0.7329	1.3061	89

Table B.7 shows the summary statistics of non-debt tax shield (F5: NDTS) and liquidity (F6: LIQ) by country and industry. For Indonesia, the Consumer Services industry has the largest non-debt tax shield, but the Financials industry has the smallest one. The Oil & Gas industry has the highest liquidity, but the Telecommunications industry has the lowest one.

For Malaysia, the industry with the largest non-debt tax shield (F5: NDTS) is Telecommunications, but the industry with the lowest one is Financials. The industry with the highest liquidity (F6: LIQ) is Technology; however, the industry with the lowest one is Oil & Gas.

For the Philippines, the industry with the largest non-debt tax shield (F5: NDTS) is Telecommunications, but the industry with the lowest one is Financials. The industry with the highest liquidity (F6: LIQ) is Oil & Gas; however, the industry with the lowest one is Health Care.

For Singapore, the industry with the largest non-debt tax shield (F5: NDTS) is Telecommunications, but the industry with the lowest one is Financials. The industry with the highest liquidity (F6: LIQ) is Financials; however, the industry with the lowest one is Telecommunications.

For Thailand, the Health Care and Telecommunications industries have the largest non-debt tax shield (F5: NDTS), but the Financials industry has the lowest one. Referring to liquidity (F6: LIQ), the Consumer Goods and Financials industries have the highest liquidity, but the Technology industry has the lowest one.

For Vietnam, the industry with the largest non-debt tax shield (F5: NDTS) is Utilities, but the industry with the lowest one is Financials. The industry with the highest liquidity (F6: LIQ) is Financials; however, the industry with the lowest one is Oil & Gas.

Table B.7 Summary Statistics of Independent Variables (Firm-level): F5, F6

Country/Industry	**Code**	**Count**	**F5: NDTS**			**F6: LIQ**		
			$\bar{x}$	**S.D.**	**N**	$\bar{x}$	**S.D.**	**N**
Indonesia								
Oil & Gas	10110001	84	0.0950	0.0207	2	9.3370	39.3016	48
Basic Materials	10110000	876	0.0202	0.0261	2	2.3811	4.1125	686
Industrials	10120000	756	-	-	0	2.1725	4.6309	598
Consumer Goods	10130000	984	0.0333	0.0183	4	3.2455	12.3352	849
Health Care	10140000	144	-	-	0	2.5134	1.5544	137
Consumer Services	10150000	708	0.1094	-	1	1.6242	1.4749	515
Telecommunications	10160000	96	0.0194	-	1	1.1493	0.9566	54
Utilities	10170000	24	-	-	0	2.7951	1.3084	13
Financials	10180000	1404	0.0027	0.0021	303	5.7311	10.2805	181
Technology	10190000	168	-	-	0	4.4697	6.9717	118
Malaysia								
Oil & Gas	10210001	300	0.0261	0.0188	166	1.8498	1.5379	196
Basic Materials	10210000	1008	0.0292	0.0225	781	2.9481	9.5730	808
Industrials	10220000	3612	0.0299	0.0235	2747	2.7675	5.3707	2899
Consumer Goods	10230000	2316	0.0304	0.0186	1846	3.4781	6.6205	1952
Health Care	10240000	276	0.0327	0.0147	187	2.2083	1.6834	205

Country/Industry	Code	Count	F5: NDTS			F6: LIQ		
			$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N
Consumer Services	10250000	816	0.0274	0.0255	610	2.6321	9.6656	639
Telecommunications	10260000	144	0.0531	0.0468	59	2.4548	2.4228	87
Utilities	10270000	156	0.0224	0.0154	141	2.7103	2.3918	135
Financials	10280000	1560	0.0059	0.0098	1080	2.8025	3.4274	507
Technology	10290000	1032	0.0332	0.0359	682	6.6085	15.6709	733
Unclassified	10299999	72	0.0303	0.0313	14	0.5190	0.4417	14
Philippines								
Oil & Gas	10310001	120	0.0165	0.0263	99	33.3994	70.3276	105
Basic Materials	10310000	288	0.0376	0.0500	236	8.5162	25.5914	230
Industrials	10320000	372	0.0332	0.0320	334	5.8903	27.2234	344
Consumer Goods	10330000	300	0.0360	0.0250	242	2.1840	1.6763	233
Health Care	10340000	24	0.0380	0.0143	24	1.2305	0.4743	24
Consumer Services	10350000	312	0.0417	0.0286	254	3.3893	9.8274	255
Telecommunications	10360000	48	0.0739	0.0435	48	7.9980	39.7411	48
Utilities	10370000	156	0.0355	0.0420	128	4.3871	19.5039	130
Financials	10380000	1080	0.0074	0.0133	981	7.4607	24.9268	421
Technology	10390000	132	0.0599	0.0807	90	4.3861	13.8451	88
Singapore								
Oil & Gas	10410001	408	0.0224	0.0191	261	2.3661	3.6767	262
Basic Materials	10410000	588	0.0293	0.0236	401	2.8083	3.8839	402
Industrials	10420000	3216	0.0347	0.0286	2560	2.2496	3.5390	2572
Consumer Goods	10430000	1368	0.0317	0.0463	982	2.7577	4.5936	997
Health Care	10440000	252	0.0348	0.0295	172	2.9207	3.1069	172
Consumer Services	10450000	888	0.0393	0.0370	690	2.1451	1.9293	683
Telecommunications	10460000	60	0.0628	0.0525	53	1.6806	2.0321	55
Utilities	10470000	96	0.0241	0.0529	80	2.5897	2.4133	81
Financials	10480000	1224	0.0062	0.0135	781	3.4374	3.8614	301
Technology	10490000	780	0.0335	0.0561	641	2.8574	2.8339	643
Thailand								
Oil & Gas	10510001	144	0.0425	0.0259	102	1.9739	1.2768	104
Basic Materials	10510000	852	0.0372	0.0344	685	2.0735	2.5144	695
Industrials	10520000	1392	0.0437	0.0263	1106	2.0602	2.5372	1128
Consumer Goods	10530000	1260	0.0439	0.0262	1128	3.2228	8.3854	1119
Health Care	10540000	228	0.0550	0.0235	193	1.5601	1.8851	193
Consumer Services	10550000	792	0.0459	0.0407	651	2.2456	2.7642	639
Telecommunications	10560000	72	0.0549	0.0483	58	1.6758	3.1783	58
Utilities	10570000	84	0.0320	0.0121	74	2.7118	2.7115	62
Financials	10580000	1668	0.0148	0.0287	898	3.1711	4.0370	316
Technology	10590000	288	0.0428	2.5579	234	0.0330	5.5529	236
Unclassified	10599999	24	-	-	0	-	-	0
Vietnam								
Oil & Gas	10610001	180	0.0315	0.0339	72	1.4414	0.8354	73
Basic Materials	10610000	876	0.0385	0.0525	308	2.3706	4.5763	324
Industrials	10620000	4716	0.0282	0.0332	1668	1.9536	3.2074	1726
Consumer Goods	10630000	1320	0.0286	0.0327	527	1.9568	1.7124	535

Country/Industry	Code	Count	F5: NDTS			F6: LIQ		
			$\bar{x}$	S.D.	N	$\bar{x}$	S.D.	N
Health Care	10640000	252	0.0254	0.0301	84	2.8311	3.2735	88
Consumer Services	10650000	540	0.0236	0.0334	164	3.5083	4.8138	172
Telecommunications	10660000	36	0.0305	0.0050	9	1.7248	0.4191	9
Utilities	10670000	408	0.0478	0.0397	122	4.4522	11.5290	131
Financials	10680000	1392	0.0062	0.0123	428	4.6974	19.3376	388
Technology	10690000	228	0.0145	0.0284	78	2.7211	3.3369	85

Table B.8 shows the summary statistics of cost of debt or interest rate (F7: INTR) and business risk or volatility (F8: VOL). For Indonesia, the Financials industry has the highest cost of debt, but the Utilities industry has the lowest one. The Technology industry has the highest volatility, but the Oil & Gas industry has the lowest one.

For Malaysia, the industry with the highest cost of debt (F7: INTR) is Oil & Gas, but the three industries with the low one are Health Care, Telecommunications and Consumer Services. The industry with the highest volatility (F8: VOL) is Industrials; however, the industry with the lowest one is Utilities.

For the Philippines, the industry with the highest cost of debt (F7: INTR) is Telecommunications, but the industries with the low one are Utilities and Health Care. The industry with the highest volatility (F8: VOL) is Technology; however, the industry with the lowest one is Health Care.

For Singapore, the Technology industry has the highest cost of debt (F7: INTR), but the Oil & Gas industry has the lowest one. The Utilities industry has the highest volatility (F8: VOL), but the Financials industry has the lowest one.

For Thailand, the Financials industry has the highest cost of debt (F7: INTR) but the Utilities industry has the lowest one. The Industrials industry has the highest volatility (F8: VOL), but the Utilities industry has the lowest one.

For Vietnam, the Consumer Services industry has the highest cost of debt (F7: INTR), but the Telecommunications and Oil & Gas industries have the lowest ones. The Financials industry has the highest volatility (F8: VOL), but the Telecommunications industry has the lowest one.

Table B.8 Summary Statistics of Independent Variables (Firm-level): F7, F8

Country/Industry	Code	Count	F7: INTR			F8: VOL		
			$\bar{x}$	S.D.	N	$\bar{x}$	S.D.	N
Indonesia								
Oil & Gas	10110001	84	0.1147	0.1384	43	0.0509	0.0386	34
Basic Materials	10110000	876	0.2672	1.8557	583	0.1084	0.1530	609
Industrials	10120000	756	0.2203	1.7174	549	0.0862	0.1052	523
Consumer Goods	10130000	984	0.1205	0.2428	753	0.1014	0.1247	762
Health Care	10140000	144	0.1476	0.1290	99	0.0826	0.0746	125
Consumer Services	10150000	708	0.1759	0.7416	445	0.0997	0.1517	442
Telecommunications	10160000	96	0.0971	0.1001	58	0.0671	0.0422	48
Utilities	10170000	24	0.0526	0.0268	13	0.0852	0.0432	9
Financials	10180000	1404	0.2721	1.1887	611	0.0629	0.1071	882
Technology	10190000	168	0.2661	0.8694	84	0.1793	0.2824	96
Malaysia								
Oil & Gas	10210001	300	0.2095	1.8412	180	0.0525	0.0448	157
Basic Materials	10210000	1008	0.1153	0.9582	733	0.0659	0.0863	703
Industrials	10220000	3612	0.1035	0.6324	2686	0.1579	1.5005	2489
Consumer Goods	10230000	2316	0.1164	0.6433	1677	0.0542	0.0649	1697
Health Care	10240000	276	0.0752	0.1646	178	0.0704	0.0993	165
Consumer Services	10250000	816	0.0949	0.3131	629	0.0663	0.1056	619
Telecommunications	10260000	144	0.0838	0.1661	69	0.0751	0.0496	69
Utilities	10270000	156	0.1470	0.6979	142	0.0419	0.0527	132
Financials	10280000	1560	0.1285	0.7061	1154	0.1263	1.0560	1187
Technology	10290000	1032	0.1251	0.4690	574	0.1177	0.1476	585
Unclassified	10299999	72	0.1591	0.2103	17	0.4324	0.7128	39
Philippines								
Oil & Gas	10310001	120	0.2048	0.5763	54	0.0653	0.0751	99
Basic Materials	10310000	288	0.4486	2.7482	168	0.4046	1.4519	206
Industrials	10320000	372	0.1121	0.1176	263	0.1441	0.3049	314
Consumer Goods	10330000	300	0.0989	0.1493	206	0.0634	0.0590	224
Health Care	10340000	24	0.0920	0.0443	21	0.0433	0.0460	20
Consumer Services	10350000	312	0.1199	0.2892	184	0.0614	0.0936	216
Telecommunications	10360000	48	0.5506	2.2226	40	0.0623	0.0625	45
Utilities	10370000	156	0.0889	0.1203	119	0.3417	1.4053	116
Financials	10380000	1080	0.2121	1.4158	668	0.2241	1.0665	882
Technology	10390000	132	0.1083	0.2487	57	0.8087	4.9659	66
Singapore								
Oil & Gas	10410001	408	0.0538	0.0572	224	0.1274	0.2197	206
Basic Materials	10410000	588	0.1159	0.5054	371	0.0829	0.1100	317
Industrials	10420000	3216	0.1122	0.8232	2377	0.1177	0.4303	2174
Consumer Goods	10430000	1368	0.1116	0.7096	887	0.1442	0.9804	823
Health Care	10440000	252	0.0789	0.1053	153	0.0908	0.1003	139
Consumer Services	10450000	888	0.0866	0.3275	605	0.1077	0.2544	599
Telecommunications	10460000	60	0.0705	0.1497	56	0.1033	0.2205	51

Country/Industry	Code	Count	F7: INTR			F8: VOL		
			$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N
Utilities	10470000	96	0.1138	0.5841	76	0.2210	0.9453	66
Financials	10480000	1224	0.0811	0.7557	668	0.0625	0.1133	722
Technology	10490000	780	0.1368	0.8374	550	0.1845	0.3758	547
Thailand								
Oil & Gas	10510001	144	0.0566	0.0261	104	0.0586	0.0274	85
Basic Materials	10510000	852	0.0843	0.2473	633	0.0730	0.0968	599
Industrials	10520000	1392	0.1083	0.5532	1030	0.1643	0.7538	973
Consumer Goods	10530000	1260	0.1844	1.7095	959	0.0626	0.1123	1040
Health Care	10540000	228	0.1252	0.5673	162	0.0441	0.0349	174
Consumer Services	10550000	792	0.1962	1.1265	535	0.0665	0.0805	565
Telecommunications	10560000	72	0.0907	0.0767	57	0.0659	0.0688	52
Utilities	10570000	84	0.0522	0.0195	74	0.0215	0.0166	66
Financials	10580000	1668	0.2591	1.8981	847	0.0884	0.3147	988
Technology	10590000	288	0.1643	0.9068	214	0.0706	0.0585	200
Unclassified	10599999	24	-	-	0	-	-	0
Vietnam								
Oil & Gas	10610001	180	0.0849	0.0933	68	0.0297	0.0276	44
Basic Materials	10610000	876	0.1532	0.4423	277	0.0543	0.0480	197
Industrials	10620000	4716	0.1174	0.2324	1457	0.0358	0.0361	1078
Consumer Goods	10630000	1320	0.1344	0.3909	472	0.0449	0.0416	356
Health Care	10640000	252	0.1591	0.2461	80	0.0297	0.0254	56
Consumer Services	10650000	540	0.3493	1.6632	115	0.0328	0.0251	109
Telecommunications	10660000	36	0.085	0.0817	9	0.0198	0.0025	5
Utilities	10670000	408	0.0906	0.1171	89	0.0399	0.0380	80
Financials	10680000	1392	0.0907	0.1414	270	0.0710	0.1149	254
Technology	10690000	228	0.1662	0.5300	72	0.0534	0.0448	52

Table B.9 shows the summary statistics of industry-level independent variables by industry of each country in ASEAN. There are three variables showed; first, the ratio of the regression slope coefficient to its average sales which is a proxy of the munificence of an industry (I1: MUN); second, the standard error of the munificence regression slope coefficient divided by its average sales which is a proxy of the dynamism of an industry (I2: DYN); third, the sum of the squares of markets shares of firms in an industry which is a proxy of the Herfindahl-Hirschman index (I3: HHI).

For Indonesia, industries with high I1: MUN are Utilities and Oil & Gas, but industries with low one are Financials and Consumer Goods. The industry with the highest I2: DYN is Technology and the industry with the highest I3: HHI is Utilities;

however, an industry of Basic Materials has both the lowest I2: DYN and the lowest I3: HHI.

For Malaysia, the industry with the highest I1: MUN is Health Care, while industries with low one are Consumer Services and Financials. The industry of Health Care has the highest I2: DYN, but the financial industry has the lowest one. The industry with the highest I3: HHI is Utilities, but the industry with the lowest one is Consumer Goods.

For the Philippines, the industry with the highest I1: MUN is Consumer Services, but the Financials industry has the lowest one. The industry with the highest I2: DYN is Technology, but Telecommunications has the lowest one. However, Telecommunications has the highest I3: HHI, but Financials has the lowest one.

For Singapore, the industry with the highest I1: MUN is Consumer Goods, but the industry with the lowest one is Consumer Services. The industry with the highest I2: DYN is Consumer Goods, but the Consumer Services industry has the lowest one. The industry with the highest I3: HHI is Telecommunications, but a Financials industry has the lowest one.

For Thailand, the Oil & Gas industry has both the highest I1: MUN and the highest I3: HHI, but the Financials industry has the lowest ones. According to I2: DYN, the industry of Utilities the highest I2: DYN, while the lowest one is Consumer Goods.

For Vietnam, the industry with the highest I1: MUN and I2: DYN is Consumer Services, but the industry with the highest I3: HHI is Oil & Gas. However, the industry with the lowest I1: MUN is Telecommunications; industries with low I2: DYN are Industrials and Basic Materials; and the industry with the lowest I3: HHI is Industrials.

Table B.9 Summary Statistics of Independent Variables (Industry-level)

Country/ Industry	Code	I1: MUN			I2: DYN			I3: HHI		
		$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N
Indonesia										
Oil & Gas	10110001	0.1762	0.0635	84	0.0355	0.0167	84	0.4450	0.0696	56
Basic Materials	10110000	0.1490	0.0804	876	0.0262	0.0115	876	0.0661	0.0156	876
Industrials	10120000	0.1423	0.1272	756	0.0344	0.0385	756	0.0800	0.0103	756
Consumer Goods	10130000	0.1152	0.0796	984	0.0279	0.0355	984	-	-	984
Health Care	10140000	0.1449	0.0732	144	0.0354	0.0362	144	0.2034	0.0196	144
Consumer Services	10150000	0.1463	0.1233	708	0.0379	0.0458	708	0.0795	0.0133	708
Telecommunications	10160000	0.1479	0.1554	96	0.0500	0.0416	96	0.5368	0.0672	96
Utilities	10170000	0.2283	0.0671	16	0.0356	0.0236	16	0.6686	-	2
Financials	10180000	0.1149	0.1353	1404	0.0592	0.0445	1404	0.1049	0.0326	1404
Technology	10190000	0.1282	0.2555	168	0.0812	0.0577	154	0.3485	0.1291	168
Malaysia										
Oil & Gas	10210001	0.1501	0.0643	300	0.0300	0.0173	300	0.2293	0.0285	300
Basic Materials	10210000	0.1459	0.0998	1008	0.0376	0.0158	1008	0.0519	0.0125	1008
Industrials	10220000	0.1523	0.0673	3612	0.0375	0.0303	3612	0.0611	0.0235	3612
Consumer Goods	10230000	0.0979	0.0564	2316	0.0200	0.0155	2316	0.0506	0.0087	2316
Health Care	10240000	0.2768	0.0510	276	0.0467	0.0302	276	0.1367	0.0281	276
Consumer Services	10250000	0.0675	0.0801	816	0.0209	0.0133	816	0.0765	0.0101	816
Telecommunications	10260000	0.1291	0.0832	144	0.0373	0.0196	144	0.3303	0.0971	84
Utilities	10270000	0.1250	0.0539	156	0.0206	0.0114	156	0.4066	0.1046	156
Financials	10280000	0.0685	0.0620	1560	0.0188	0.0076	1560	0.0737	0.0066	1560
Technology	10290000	0.0793	0.0687	1032	0.0427	0.0121	1032	0.1278	0.0452	1032
Unclassified	10299999	-0.2336	0.0682	24	0.0627	0.0468	30	0.4910	0.1118	24
Philippines										
Oil & Gas	10310001	0.0904	0.0891	120	0.0392	0.0156	120	-	-	-
Basic Materials	10310000	0.1110	0.1924	288	0.0496	0.0243	288	0.2092	0.0337	288
Industrials	10320000	0.0788	0.1128	372	0.0234	0.0080	372	0.1327	0.0134	372
Consumer Goods	10330000	0.0770	0.0913	300	0.0351	0.0134	300	0.2911	0.0597	300
Health Care	10340000	0.1393	0.0591	24	0.0402	0.0264	24	0.5293	0.0257	22
Consumer Services	10350000	0.2199	0.0761	312	0.0321	0.0188	312	0.2302	0.0324	312
Telecommunications	10360000	0.1078	0.0386	48	0.0114	0.0077	48	0.5687	0.0215	48
Utilities	10370000	0.1158	0.0450	156	0.0228	0.0070	156	0.3461	0.0373	130
Financials	10380000	0.0597	0.1224	1080	0.0251	0.0114	1080	0.0833	0.0204	1080
Technology	10390000	0.0613	0.2136	132	0.0871	0.0338	132	0.4172	0.1079	55
Singapore										
Oil & Gas	10410001	0.1518	0.0731	408	0.0342	0.0163	408	0.2710	0.0722	408
Basic Materials	10410000	0.1624	0.1197	588	0.0519	0.0228	588	0.1574	0.1177	588
Industrials	10420000	0.1376	0.0695	3216	0.0245	0.0081	3216	0.1181	0.0298	3216
Consumer Goods	10430000	0.3375	0.1876	1140	0.0567	0.0286	1026	0.2901	0.2744	1368
Health Care	10440000	0.2075	0.0448	252	0.0356	0.0236	252	0.1424	0.0553	252
Consumer Services	10450000	0.0826	0.0834	888	0.0200	0.0070	888	0.2065	0.0161	888
Telecommunications	10460000	0.1267	0.0585	60	0.0263	0.0182	60	0.5862	0.1015	60

Country/ Industry	Code	I1: MUN			I2: DYN			I3: HHI		
		$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	N
Utilities	10470000	0.2242	0.1684	72	0.0548	0.0418	80	0.2651	0.0951	96
Financials	10480000	0.0909	0.0487	1224	0.0240	0.0091	1224	0.1038	0.0161	1224
Technology	10490000	0.1366	0.0641	780	0.0298	0.0172	780	0.1106	0.0240	780
Thailand										
Oil & Gas	10510001	0.3215	0.1424	144	0.0515	0.0205	120	0.4482	0.0375	120
Basic Materials	10510000	0.1791	0.0857	852	0.0416	0.0143	852	0.1383	0.0392	852
Industrials	10520000	0.0971	0.0891	1392	0.0318	0.0104	1392	0.1284	0.0107	1392
Consumer Goods	10530000	0.0967	0.0382	1260	0.0219	0.0076	1260	0.0891	0.0167	1260
Health Care	10540000	0.1841	0.1057	228	0.0374	0.0115	228	0.1827	0.0392	228
Consumer Services	10550000	0.1116	0.0604	792	0.0283	0.0115	792	0.1779	0.0415	792
Telecommunications	10560000	0.1525	0.0678	72	0.0349	0.0195	72	0.3705	0.0343	72
Utilities	10570000	0.1998	0.1675	84	0.0574	0.0339	84	0.3535	0.0876	84
Financials	10580000	0.0448	0.1508	1668	0.0372	0.0098	1668	0.0825	0.0177	1668
Technology	10590000	0.1015	0.1724	288	0.0514	0.0210	288	0.1066	0.0265	288
Unclassified	10599999	-	-	-	-	-	-	-	-	-
Vietnam										
Oil & Gas	10610001	0.3772	0.0681	75	0.0655	0.0512	75	0.2604	0.0605	105
Basic Materials	10610000	0.3558	0.1219	365	0.0357	0.0169	365	0.0664	0.0246	511
Industrials	10620000	0.3726	0.1613	1965	0.0349	0.0187	1965	0.0192	0.0023	2751
Consumer Goods	10630000	0.3754	0.2086	660	0.0447	0.0468	660	0.0451	0.0137	770
Health Care	10640000	0.3669	0.0846	105	0.0520	0.0327	105	0.1933	0.0444	147
Consumer Services	10650000	0.4048	0.1028	225	0.1055	0.0119	135	0.2440	0.0458	315
Telecommunications	10660000	-0.0072	0.0452	15	0.0701	0.0430	12	-	-	-
Utilities	10670000	0.2611	0.1273	170	0.0500	0.0426	170	0.2428	0.0995	238
Financials	10680000	0.3926	0.1208	464	0.0461	0.0160	580	0.1854	0.1161	812
Technology	10690000	0.3165	0.2082	76	0.0866	0.0405	76	0.2118	0.0518	133

Table B.10 provides the average ratio of market capitalization of listed firms to gross domestic product (GDP) which is a proxy of the stock market development (C1: SMD) for ASEAN is 92.36% with standard deviation of 69.31. Singapore has the highest stock market development with 179.27%, followed by Malaysia (136.02%), Thailand (60.19%), the Philippines (49.02%), Indonesia (30.22%), and Vietnam (12.29%). Moreover, the average ratio of domestic credit provided by banking sector to GDP which is a proxy of the bank development (C2: BANK) for ASEAN is 93.62% with standard deviation of 36.32. Thailand has the highest bank development with 131.60%, followed by Malaysia (127.96%), Vietnam (79.16%), Singapore (79.02%), the Philippines (51.57%), and Indonesia (45.28%)

Table B.10 Summary Statistics of Independent Variables (Country-level): C1, C2

Country/	C1: SMD			C2: BANK		
Industry	$\bar{X}(\%)$	S.D.	N	$\bar{X}(\%)$	S.D.	N
ASEAN	92.3562	69.3052	42513	93.6246	36.3153	45000
Indonesia	30.2196	12.7961	84	45.2816	7.7297	84
Malaysia	136.0181	22.6603	300	127.9633	12.1748	300
Philippines	49.0209	17.0651	120	51.5720	3.6964	120
Singapore	179.2691	51.9073	408	79.0240	11.0488	408
Thailand	60.1930	21.6859	144	131.5962	21.6859	144
Vietnam	12.2851	9.4398	135	79.1638	33.2221	180

Table B.11 provides the average annual GDP growth rate which is a proxy of the economic development or country growth (C3: GDP) for ASEAN is 5.52% with standard deviation of 2.91. Vietnam has the highest country growth with 7.11%, followed by Singapore (5.93%), Indonesia (5.31%), Malaysia (5.01%), the Philippines (4.67%), and Thailand (4.04%). The average consumer price index which is a proxy of the inflation rate (C4: INF) for ASEAN is 3.93% with standard deviation of 3.69. Indonesia has the highest inflation rate with 7.91%, followed by Vietnam (6.48%), the Philippines (4.58%), Thailand (2.63%), Malaysia (2.23%), and Singapore (1.90%). The average ratio of total tax rate to commercial profit which is a proxy of corporate tax rate (C5: TAX) for ASEAN is 35.28% with standard deviation of 5.60. The Philippines has the highest corporate tax rate with 46.63%, followed by Vietnam (38.91%), Thailand (37.21%), Indonesia (36.03%), Malaysia (34.91%), and Singapore (26.13%).

Table B.11 Summary Statistics of Independent Variables (Country-level): C3, C4, C5

Country	C3: GDP			C4: INF			C5: TAX		
	$\bar{X}(\%)$	S.D.	N	$\bar{X}(\%)$	S.D.	N	$\bar{X}(\%)$	S.D.	N
ASEAN	5.5236	2.9115	45000	3.9297	3.6867	44171	35.2797	5.5979	26250
Indonesia	5.3090	0.8345	84	7.9149	3.0979	84	36.0286	2.4486	49
Malaysia	5.0093	2.7152	300	2.2335	1.2954	300	34.9143	0.9685	175
Philippines	4.6749	1.7058	120	4.5796	1.6239	120	46.6286	1.7175	70

Country	C3: GDP			C4: INF			C5: TAX		
	$\bar{X}(\%)$	S.D.	N	$\bar{X}(\%)$	S.D.	N	$\bar{X}(\%)$	S.D.	N
Singapore	5.9329	4.4638	408	1.9045	1.9688	408	26.1286	1.8507	238
Thailand	4.0419	2.8370	144	2.6333	1.7378	144	37.2143	0.2764	84
Vietnam	7.1103	0.9575	180	6.4757	5.2059	165	38.9143	2.4673	105

Without considering regulated industries, namely Financials, Utilities, and Unclassified, Table B.12 indicates the industry of each country in which provides the high and low mean of various leverage ratios including firm-, and industry-specific variables.

Table B.12 Industry Classification by Country with the High and Low Mean ($\bar{X}$)

Variable		Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
Y1	High	Telecommunications	Oil & Gas	Telecommunications	Telecommunications	Telecommunications Oil & Gas	Oil & Gas Industrials
	Low	Health Care Technology	Technology Consumer Goods	Technology	Technology	Technology	Consumer Services Health Care Technology
Y2	High	Oil & Gas Telecommunications	Consumer Services Oil & Gas	Consumer Goods	Consumer Services Telecommunications	Telecommunications	Oil & Gas Industrials
	Low	Health Care	Technology	Technology	Technology	Technology	Telecommunications Technology
Y3	High	Telecommunications Basic Materials Industrials	Health Care	Telecommunications Consumer Goods	Telecommunications	Telecommunications Basic Materials	Telecommunications Oil & Gas
	Low	Health Care	Technology Telecommunications	Oil & Gas	Health Care Technology	Consumer Services	Consumer Services
Y4	High	Industrials Oil & Gas	Basic Materials Consumer Services	Consumer Goods	Basic Materials	Oil & Gas	Oil & Gas Basic Materials Industrials
	Low	Health Care Technology	Telecommunications Technology	Technology	Technology Health Care	Consumer Services Health Care	Consumer Services
Y5	High	Telecommunications	Oil & Gas	Telecommunications Industrials	Telecommunications	Telecommunications Oil & Gas	Oil & Gas
	Low	Health Care	Technology	Technology	Technology	Consumer Services Technology Industrials	Health Care Technology Consumer Services
Y6	High	Oil & Gas	Consumer Services Oil & Gas	Consumer Goods	Consumer Services Telecommunications	Oil & Gas	Oil & Gas
	Low	Health Care	Technology	Technology	Technology	Consumer Services Basic Materials Consumer Goods	Telecommunications
Y7	High	Consumer Services	Health Care Oil & Gas	Industrials Basic Materials	Telecommunications Oil & Gas	Basic Materials	Oil & Gas
	Low	Health Care Technology	Technology	Oil & Gas	Health Care	Health Care	Consumer Services
Y8	High	Industrials Oil & Gas	Consumer Services Basic Materials Industrials	Consumer Goods	Basic Materials Industrials	Technology	Industrials Oil & Gas
	Low	Technology	Telecommunications	Technology	Health Care	Health Care	Telecommunications

Variable		Indonesia	Malaysia	Philippines	Singapore	Thailand	Vietnam
			Technology	Consumer Services Oil & Gas	Telecommunications		
F1	High	Oil & Gas	Telecommunications Oil & Gas Consumer Services	Telecommunications	Telecommunications	Oil & Gas Telecommunications	Telecommunications Oil & Gas
	Low	Technology	Technology	Technology	Health Care Technology	Health Care Consumer Goods Industrials	Consumer Services
F2	High	Health Care	Health Care Oil & Gas Consumer Goods	Consumer Services Health Care Consumer Goods	Telecommunications	Oil & Gas Health Care	Telecommunications
	Low	Technology	Technology	Basic Materials	Technology Oil & Gas Consumer Goods	Industrials Basic Materials	Technology
F3	High	Telecommunications	Health Care Consumer Goods	Telecommunications	Consumer Goods	Health Care	Basic Materials
	Low	Technology	Technology	Technology	Technology	Technology	Technology
F4	High	Consumer Services	Telecommunications	Consumer Services	Telecommunications	Health Care	Oil & Gas
	Low	Oil & Gas Industrials	Consumer Goods	Oil & Gas Consumer Goods	Basic Materials	Telecommunications	Consumer Services
F5	High	Consumer Services	Telecommunications	Telecommunications	Telecommunications	Health Care Telecommunications	Basic Materials
	Low	Basic Materials	Oil & Gas	Oil & Gas	Oil & Gas	Basic Materials	Technology
F6	High	Oil & Gas	Technology	Oil & Gas	Health Care	Consumer Goods	Consumer Services
	Low	Telecommunications Consumer Services	Oil & Gas	Health Care	Telecommunications	Technology	Oil & Gas
F7	High	Basic Materials Technology	Oil & Gas	Telecommunications	Technology	Consumer Services	Consumer Services
	Low	Telecommunications	Health Care	Health Care Consumer Goods	Oil & Gas	Oil & Gas	Oil & Gas Telecommunications
F8	High	Technology	Industrials	Technology	Technology	Industrials	Basic Materials Technology
	Low	Oil & Gas	Oil & Gas Consumer Goods	Health Care	Basic Materials	Health Care	Oil & Gas Health Care
I1	High	Oil & Gas	Health Care	Consumer Services	Consumer Goods	Oil & Gas	Consumer Services
	Low	Consumer Goods	Consumer Services	Technology	Consumer Services	Consumer Goods Industrials	Telecommunications
I2	High	Telecommunications	Health Care	Technology	Consumer Goods	Oil & Gas	Consumer Services
	Low	Basic Materials	Consumer Goods	Telecommunications	Consumer Services	Consumer Goods	Industrials
I3	High	Telecommunications	Telecommunications	Telecommunications	Telecommunications	Oil & Gas	Oil & Gas
	Low	Basic Materials	Consumer Goods Basic Materials	Industrials	Technology	Consumer Goods	Industrials

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