A STUDY ON THE DETERMINANTS OF THAI LISTED FIRMS' CAPITAL STRUCTURE

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ABSTRACT

The study aims to identify the determinants of Thai listed firms' capital structure using the theoretical-based models referred to as CAPM and Hamada equations, which incorporate the control variables, i.e. company's operating performance and capital size, with time-invariant and random effects, for improving the explanatory power of the model. The empirical test employs the quarterly data covering the year 2006 to 2010 from the Stock Exchange of Thailand. The results showed that the tax shield and industry classification explicitly demonstrate material relevance to the alteration of the firm's degree of financial leverage. The results also showed that the fixed assets merely exert moderate influences on the firm's willingness to implement a policy of increasing financial leverage. Conclusively, none other relevant factors possess a significant impact on the choice of capital structure, in the case of Thailand.

KEY WORDS: CAPITAL STRUCTURE/ TAX SHIELD/ INDUTRY/ RISK PREMIUM

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การลงทุนของบริษัทและข้อจำกัดทางการเงิน : กรณีศึกษาบริษัทในประเทศไทย

CORPORATE INVESTMENT AND FINANCIAL CONSTRAINTS:

A CASE OF THAI CORPORATIONS

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บทคัดย่อ

งานวิจัยนี้เป็นการศึกษาเพื่อหาลักษณะชี้เฉพาะในการหาโครงสร้างเงินทุนของบริษัทที่จดทะเบียนในประเทศไทยโดยใช้ทฤษฎี CAPM และสมการฮามาดะ ซึ่งสมการนี้ได้รวมถึงตัวแปรที่ควบคุมได้เป็นต้นว่า ผลประกอบการของบริษัท และขนาดเงินลงทุนที่นำมาลงทุนในสินทรัพย์ถาวร ร่วมด้วยกับผลกระทบที่เกิดจากความผันผวนต่างๆ อาทิเช่น ความผันแปรตามฤดูกาล ทั้งนี้เพื่อเป็นการเพิ่มศักยาภาพในการอธิบายผลการศึกษาของงานต้นแบบนี้ การศึกษางานวิจัยนี้ใช้ข้อมูลในแต่ละไตรมาสของปี 2549 จนถึงปี 2553 ที่ได้มาจากตลาดหลักทรัพย์แห่งประเทศไทย ซึ่งได้ผลลัพธ์ที่พิสูจน์และเห็นได้ชัดว่าประโยชน์ของการลดหย่อนภาษีจากการกู้เงินและประเภทของธุรกิจมีผลกระทบอย่างมีนัยสำคัญต่อการเปลี่ยนแปลงอัตราส่วนของโครงสร้างเงินทุน นอกจากนั้นแล้วทรัพย์สินถาวรก็เป็นอีกหนึ่งปัจจัยที่มีนัยสำคัญในระดับปานกลางในการชักจูงให้บริษัทจัดตั้งนโยบายเพิ่มเงินทุนหมุนเวียนในบริษัทเช่นกันการศึกษานี้ยังได้พบว่าตัวแปรอื่นๆไม่มีผลกระทบต่อการจัดหาโครงสร้างเงินทุนของบริษัทในประเทศไทย

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CHAPTER I
INTRODUCTION

The issue regarding impact of financial policy on firm's value that has been the center of attention for over half a century is the "Capital Structure" theory. The question that many studies tried to answer is whether or not there is an existence of optimal capital structure, and this has extended into many controversies. The argument originates when Modigliani and Miller (1958) states that the firm's value has no result from the firm capital structure, where their later studies, Modigliani and Miller (1963), relaxed some of the assumptions made earlier by allowing the existence of corporate income tax, then it resulted that the use of debt financing benefits the firm in term of tax saving. Subsequently without Modigliani, Miller (1977) introduced personal taxes into his study, yet at the corporate level, the tax benefit from debt financing will eventually offset by the personal tax at personal level. Moreover, the evidence found in the study of Masulis (1982) supported the studies of Modigliani and Miller that the use of debt could add more value to the firm in terms of tax shield.

The two major theories of capital structure that is still competing are the "Pecking Order Theory" and the "Trade off Theory". The core concept of pecking order theory as documented by Myers and Majluf (1984) is that the internal fund would be the first thing in consideration when firm need to raise capital and the last consideration if there is an internal financial deficit will be the use of debt ahead of the equity financing, this theory were supported by many studies; such as Shyam – Sunder and Myers (1999) and Lemmon and Zender (2009). The documentaries by Brounen and Eichholtz (2001) and Myers (1984) claimed that firms should aware of the issuing of the firm's equity and risky debt as it may reduce that price of stocks base on the existence of asymmetric information. In addition, Titman and Wessels (1988) evidenced the inverse relationship between the firm's profitability and the company debt ratio, which also support the Pecking Order hypothesis.

On the other hand, “Trade Off Theory” discuss about the optimal capital structure which determined by the offset between tax-shield benefit and the cost of financial distress from issuing debt, for instance, bankruptcy cost and agency cost as shown by the work of Bradley, Jarrell, Kim (1984). Many other researchers tried to figure out the optimal level of debt-equity ratio by adding up additional factors into the analysis; for example, agency cost of debt by Jensen and Meckling (1976), Hart and Moor (1988), and Myers (1977). Fama and French (2002) and Wang (2006) were emphasized on the impact of firm’s dividend policy on the change of the firm’s capital structure. The studies by DeAngelo and Masulis (1980) claimed that there is linkage between the firm’s leverage ratio and the industry classes of the firm due to the taxes level are different across industries, this findings were also supported by the documentaries of Bradley, Jarrell, Kim (1984) and Hatfield, Cheng, and Davidson (1994). The liquidity of the firm assets and the firm capital structure are also related according to Williamsom (1988), Shleifer and Vishny (1992), and Sibilkov (2007) where it states that the more liquidity of the firm assets, the more likely for the firm to hire more debt. Moreover, Bulan and Sanyal (2009) and Baral (2004) revealed that the firm growth opportunities are also related to the firm financial leverage decisions. In addition, Kochhar (1997) claimed that the firm’s strategy must be consistent with how the firm decided to raise funds in order to gain competitive advantage and earn efficient returns.

As mentioned above, capital structure has impact on Firm’s Value. This study will emphasize on the concept of shareholder’s wealth by using stock valuation as a representative of the value of shareholder, and then find the linkage between the price of stock and the firm leverage ratio by using the theory of capital asset pricing model (CAPM) and Hamada equation. CAPM would enable the replacement of the required rate of return on stock in stock pricing model with the expected return on asset expressing in the term of risk free rate, market risk premium, and systematic risk, which will be replaced by the beta of leverage firm acquired from Hamada equation. Moreover in the analysis, the company profitability, asset tangibility, and industry classification will also be included as they are associated with the firm financial decision.

Research Objective

This study intends to identify the determinants of Thai listed firms' capital structure by setting up a model considering the value of the stockholders which represent by the price of stock, then test whether or not those variables in model have any impact on the firm's leverage decision as suggested by the theory. In addition, an investigation of which variable has the highest impact on the firm capital structure will be conducted, in order to make some financial policy suggestion to the firm.

To conclude, the main objective of this documentary is to establish **"Which variables could be the determinant and have high impact on the firm's financial decision on capital structure?"**

Research Contribution

A long controversial issue on capital structure; whether or not there is an optimal level between the use of debt and equity, have not yet been solved, and there are a number of studies which attempted to investigate this puzzle. Some of the studies claimed that the use of debt financing is acceptable due to the benefit that the borrowers will get from the lower amount of tax; on the other hand, many researchers argue that issuing more debt would create higher risk to the company and its shareholders and may also lead to bankruptcy. Nevertheless, this paper believes that the change in company capital structure could be caused by a combination of factors; for example, the movement of the market, type of business, and also the performance of the company itself.

The main purpose of this paper is to monitor the financial market, create a model that contain a set of variables that contain some explaining power to clarify the variation of the firm's leverage ratio, and then use the result from this model to improve corporate financial policy and to solve the controversy of which type of the external source of fund that the firm should use based on a particular market condition and the operation of the firm.

Research Limitation

The data collection and the assumptions made in this paper might contain some discrepancies, which could mildly affect the accuracy of the outcomes. The data used in this study is based on those company listed in the stock exchange of Thailand; however, some of the companies do not disclose the data that this paper is looking for to the public, and also some companies may report inaccurate data, so the result from the model testing may be biased due to the bad quality of the data. Furthermore, to derive the model this study assumed that all companies and investors are investing in a well diversify portfolio, so the return on equity could be calculated by CAPM approach, however, in reality, not every company are investing in a well-diversify portfolio.

CHAPTER II
LITERATURE REVIEW

A number of studies have been attempting to find out whether or not there is an existence of optimal capital structure. The study by Modigliani-Miller (1958) - well known as the capital structure irrelevant theorem - claims that the firm value is not affected by the financial decision of the company, so the firm can either raise capital by issuing more debt or by issuing more equity. In this study, a set of assumptions have been addressed and the following are the three most important assumptions; firms pay no taxes, no transaction cost, and they must have no asymmetric information.

After this study, they relaxed some of the assumptions in their seminal work by introducing two levels of taxes into their studies. The two levels being corporate tax and personal income tax; and explained in much of their research that the firm could get tax shield benefits if they raise capital by using debt financing, but this benefit would eventually be balanced out by the disadvantages from costs of financial distress from using debt, such as bankruptcy cost and agency costs of debt. Other research has developed models and theories related to capital structure, for instance: market timing theory, pecking order theory, and trade-off theory.

Baker and Wurgler (2001) wanted to examine whether the market timing had any impact on the firm's leverage decision or not, and also wanted to investigate in which period of time. Between low and high market value, the firms normally raise more funds by setting the firm's leverage as a dependent variable and the external financial market to book ratio, which represent the market timing because they believe there should be some linkage with the investment opportunity and market mispricing, as the independent variable and also included three more variables obtained from the study of Rajan and Zingales(1995); which are company net property, plant, equipment, firm's profitability, and the size of the firm. Also, the regression was test with different IPO times to capture the variation of the firms leverage around the IPO

period and to see the development of the leverage. The result from the regression documented that there is a negative relationship between the firm market-to-book ratio and the firm's leverage. The company asset tangibility also has inverse relationships with leverage decisions while the firm's profitability and firm size positively influence higher debt to firm. From this finding, it leads to the question; Does the market valuation (measure by market to book ratio) influence firm capital structure via the net equity issue? And is this effect persistent? According to this curiosity, they divided the variation in firm's leverage decision into three parts; equity issue (represented by the change in equity), retained earnings, and residual change in leverage, they then regressed the model again separately to find the impact of the control variables on each of these three components of the variation of leverage. The result underlines that the market-to-book seems to impact the firm's capital structure via the net equity issue. Furthermore, they also set up three regression models, which differ from each other in terms of timing of both dependent and independent variables in order to find the persistence of the effect of market to book ratio to the firm's leverage, the results revealed that the past market valuation has a robust and persistent impact on the firm's leverage decision. To conclude, this study suggested that market timing opportunities and firm leverage decision are strongly related. This market valuation accumulatively and persistently impacts the firm's capital structure through the issuance of the firm's equity.

Another two classical theories of capital structure is pecking order and trade-off theory. Under pecking order theory, the firm will follow the concept of adverse selection, meaning that the corporation would first raise funds internally, and would use external financing when the firm has financial deficit. The seminal work between Myers and Majluf (1984) is attempted to explain how investors' interpretation about the firm's action on corporate and financial decision could impact which financial decision the firm should make, regarding that investors are rational and aware that the company insiders have superior information. To capture the impact, three main types of the model's were created; one is to see the change in the stock price when firm finances its project by issuing stocks, while another model gives more choices to the firm by introducing debt financing. The last model takes into account the concept of asymmetric information to see its impact on firm's financial

decisions. The result from this study could be summarized by stating that the issuance of stock could cause the fall in the stock price, holding other thing's constant; because investors know that the manager of the firms have superior information. However, the price of the firm's stock remains at the same level if safe and less risky debts are issued. In other words, firms prefer debt financing more than equity financing, and the study suggests that firms should raise their capital by issuing bonds first and try to avoid the issuance of equity if possible.

A more recent study of Ahmed and Hisham (2009) revisits the Malaysian Firm Financial Policy on capital structure to investigate in which of the major competing theories, between pecking order and static trade off, is practiced by Malaysian Firm. The traditional funds have been rising in Malaysia since the Asian crisis has been focus on the long-term liabilities. They then moved toward a more diverse external fund, which began rising in recent years. In this study, two regression models have been set; one to represent the variation in the amount of debt issued from the impact of pecking order theory, which included dividend payment, debt repayment, capital expenditure, change in working capital, and cash flow from operation, and the other extended model included non debt tax shields, size, asset structure, growth of the firm, and the industrial structure to represent the impact from the trade off theory. The result from the model, which supports pecking order theory, shows that the debt repayment has a negative impact on firm's leverage where it shows positive relationships between the change of firm's leverage and operating cash flows, both with the statistically significant level of 5%. On the other hand, the capital expenditure is only significant at a 10% level with inverse relationships on the leverage level. However, the result from the extended model which supports the Static Trade-off-Theory reveals that none of the additional variables that support the trade off theory had any impact on the use of debt of the firm. It could be concluded from this evidence that the internal fund deficiency leads to higher amounts of debt issued by the Malaysian Firm which supports the pecking order theory while the tax shield benefit, size, asset structure, and firm's growth failed to explain it's important on the change of debt.

In contrast, many other researchers claim that there is an existence of optimal capital structure, and it involved with the offsetting of tax saving benefits from

using debt, and the value of all the costs associated with debt financing. Bradley, Jarrell, and Kim (1984) create several models to test the existence of optimal capital structure, by using cross-sectional data instead of time series. They developed the theoretical model that maximizes the firm's value by concerning both stock holders and bond holders, then using simulation and comparative static techniques to test the implication of this theoretical model. They were focusing on two main variables in the model; which are non debt tax shield and the costs of financial distress, to see how it could impact the firm leverage ratio. The simulation results shows that increasing either costs of financial distress or the amount of non-debt tax shield could cause the reduction in the firm leverage ratio. In other words, debt equity ratio has a contrary relationship with the cost of financial distress and non debt tax shield. Moreover, they also found out that the more costs created by the use of debt and the more amount of non-debt tax shields would create the variation in the firm's earnings, resulting in lower levels of debt-equity ratio. Further in this study, they wanted to test whether there is a difference in variance of the firm's capital structure if they are in different types of businesses. The test was done by using the Analysis of Variance (ANOVA) on twenty-four dummy variables, and it revealed that the industrial classification had strong influence on the firm's capital structure.

The analysis of the interaction between capital structure and managerial compensation regarding the impact of debt financing by Berkovitch, Israel, and Spiegel (2000) claims that capital structure could solve some agency problems as it can be used to monitor the mangers, compensate them, and also give them disciplines. The evidence found from this study that "the risky debt" could help the firm generate managers' effort to perform better due to the security of their jobs. In addition, the firm could use debt to control levels of compensation that the manager will get since the amount of free cash flows could be reduced by the use of debt due to the fixed obligation that have to be made to the lender.

The analysis by Hamada (1972) and a more recent study by Racelis (2007), using data from the Philippines, have tested whether or not the firms systematic risk (beta) has any impact on the firms leverage decision. According to Hamada, his study was primarily focusing on the linkage between the firm's leverage decision and the systematic risk on the investors as it had been claimed by MM theory

that with the same level of equity, the more debt incurred by the firm, result in the more risk on its stockholders. The models representing the return on common stock of the firm with and without debt had been set, and the time series return for each model were calculated by using the data derived from 304 firms. The calculated returns on common stock for both models (regarding firms with and without debt financing) will be used as the dependent variables in the regression models, while the interaction between market return and firm beta was set to be the independent variable. The regression models were run separately between the firms with no debt and the firms that use debt or preferred stock as sources of funds. The results from the regression over 304 firms revealed that the mean beta of the levered firm is higher than the mean beta of the unlevered firm. This study could conclude that the more fixed obligation that the firms have to pay which incurred by issuing more debt or preferred stock, the more systematic risk imply to the company's common stock.

On the same side, Racelis attempted to explain the linkage between the firm's systematic risk and firm's leverage decision, where the tests were made for both levered betas and unlevered betas. The results show no evidence on the relationship between the levered (equity) beta and firm's capital structure while unlevered (asset) betas reveal that it has the negative impact on firm's leverage. While it could be explained that as the firm's operating risk increases, it is harder for the firm to borrow more from other companies, which contradicts the classical theory that the unlevered beta should have no impact on the firm's leverage. Furthermore, this study was based on the study of Yu (2003), who claimed that the firm's leverage decision could be influenced by profitability of the firm, size of the firm, and both past and future growth opportunity of the firm. From these reasons, more variables had to be added into the model; such as market-to-book value ratio, return on asset, firm's revenue, and proportion of long-term asset to total asset, to capture their impact on the Philippines firm leverage. Moreover, Nguyen and Barnier (1988) documented that the firm's systematic risk(beta) is influenced by the firm's operating leverage, stock's duration, market power, and the total debt to equity ratio, so another model was set according to these findings; eventually the system of two simultaneous equations were tested. The result from this study shows that there is a negative effect between unlevered betas and levered betas where the operating leverage has a relatively inverse relationship with

unlevered betas. In addition, the Philippine firm's leverage decision is negatively related to return on asset but positively related to the firm's growth opportunity. In conclusion, the unleveraged beta is a good determinant variable of the firms leverage decision, and suggests that the firm should not incur more debt when they have higher risk.

CHAPTER III
RESEARCH METHODOLOGY

3.1 Conceptual Framework

The concept used in this paper is derived mainly from the documents of Myers and Majluf (1984) and Bradley, Jarrell, and Kim (1984). According to Myers and Majluf (1984), in the favor of Pecking Order Theory, the company will first use up the internal fund generated from its operation to finance the payments incurred to the company, then move to external financing when they are running a deficit. From this, the internal fund is a key factor for firm leverage decision. On the other hand, Bradley, Jarrell, and Kim (1984) examine the concept of optimal capital structure that maximizes the firm value. Their studies have documented that the tax shield benefits arise when using debt. Moreover, the agency cost of debt and the volatility of the firm earnings also have a strong influence on the firms leverage ratio.

Conceptually, the firms leverage decision could be the result of the impacts from both internal and external factors associated with the firm (depicted in Figure 3.1). Under the theory of Pecking Order where the firm chooses to raise funds internally before considering issuing more debt and equity, the internal fund generated by firm would be one of the causal factors which impact the firm's leverage decision. This generating fund could be viewed in terms of the companies operating profit. In a particular period, if firms generate enough profit to finance its payments, then the firm will not have to search for the external financing. Moreover, to generate this profit, firms need to invest in the fixed assets and use them to run the operation, so the firms' decision on how it would raise more funds to finance these assets will be involved in this investing activity of the company. When this is the case, the operating side of the company would impact the company capital structure in two ways. Firstly, when the firm's profitability is high, the firm is theoretically predicted to have low leverage since it chooses to use the internal fund first when they want to invest or spend on something, according to the mentioned Pecking Theory. Secondly, when the company

invests in fixed assets, more money would be required, resulting in higher debt borrowed to finance this investment, in other words, higher leverage to the firm.

When firm decides to go for external financing, they have two choices of raising money, which are issuing more debt or issuing new stocks to the market to finance the firm's payments. If the firm chooses to issue more debt, they are obligated to pay interest to the lender as a cost of borrowing; nevertheless, when firms pay interest, company pre-tax earnings would be less, resulting in lower tax paid to the government. In this case, the firm will get the benefit from borrowing in terms of debt tax shield. This tax benefit would be yet another driver of the firms leverage.

On the other hand, when the firm decides to issue more stocks to finance their projects, the firm should care about the required return on equity from the investors. The required rate of return on equity determines the price of stock, so it could be another factor that has influence on the capital structure of the firm. The prediction of an impact of higher expected return to equity on a firms leverage decision will lead to higher levels of leverage to the company.

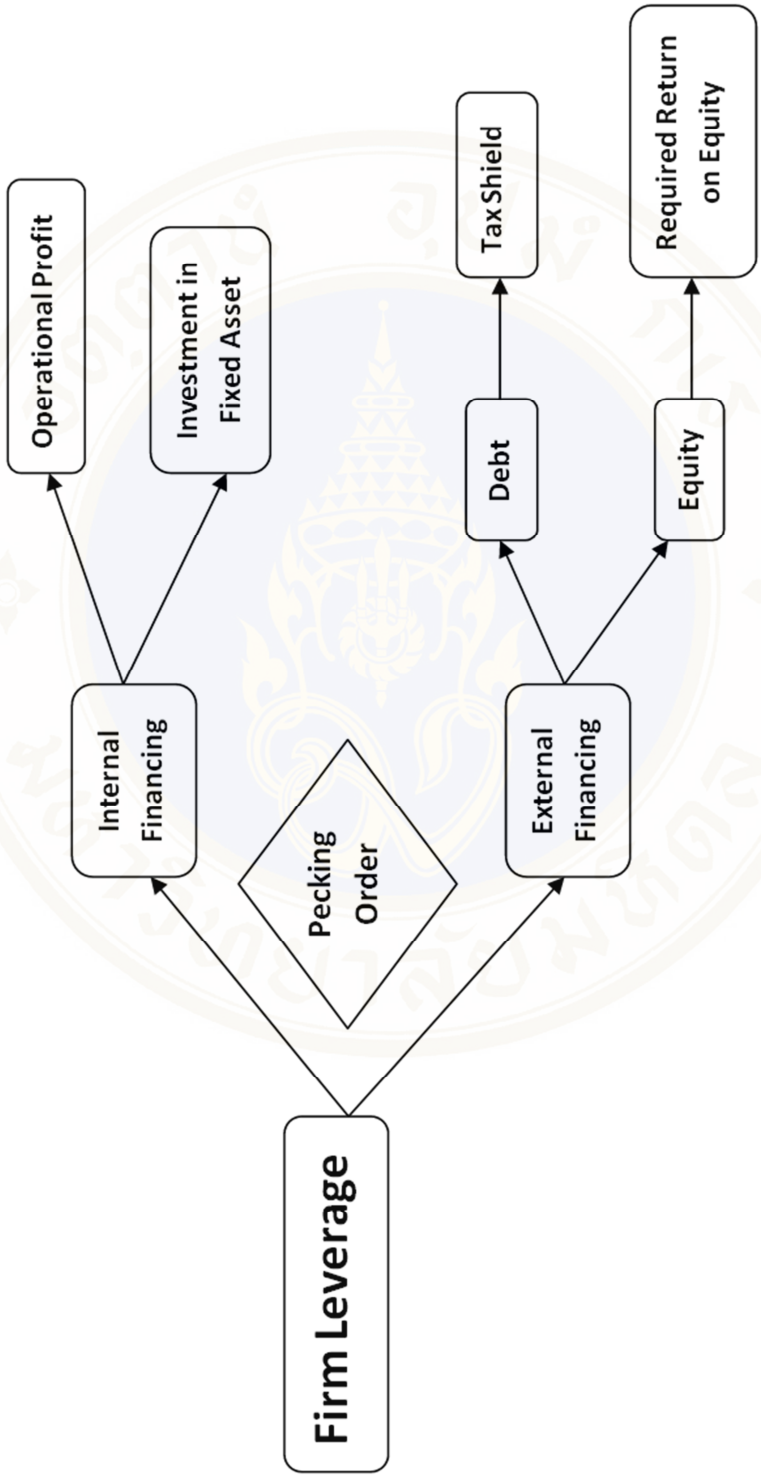

Figure 3.1: Conceptual Framework

In this study, three assumptions would be made. Firstly, all companies and investors are assumed to hold a well-diversified portfolio, so in this case only the systematic risk remains, so the study could use CAPM in the estimation of expected return on equity (Re).

Secondly, to simplify the calculation, this study introduced the Hamada Equation into the model. The Hamada model mentions that the systematic risk or beta of the levered firm is higher than the beta of non-leverage firms; the equation is written as; $B_L = B_{UL}*[1+D/E(1-T)]$. This documentary assumed that the betas of unlevered firms are equal to 1; with this assumption, the levered firm's systematic risk will only account for the capital structure of the company.

Lastly, this study assumed that the growth rate of the company dividend is fixed over time, so the Gordon's model will be used to calculate the price of stock known as the "Dividend Approach". In yet another way, this equation could be re-arranged and calculate for the required return on equity (Re). However, with practice, the required return from the investors would depend on the risk of the company, which is beta, so the Capital Asset Pricing Model is normally use for the calculation of "Re". According to this, the study assumed that the required return on equity calculated from Gordon's Model is closely related to the value of expected return on equity calculated by using CAPM.

3.2 Derivation of the Model

The goal of this study is to find "the determinants of the capital structure" base on Thai market. Referring to the goal of the company which is to "maximize the wealth of its shareholders", this study will be focusing on the shareholder side and derive the equation showing the value of the shareholders in terms of leverage ratio.

The market value of the company shareholders could be represented by the company's current stock price (P_0). This price is calculated by discounting the entire dividend flows in the future back to today's value. According to the assumption on dividend policy, the dividend growth rate is assumed to be fixed along the life of the stock or infinity. In this case, it can apply the concept from the Gordon model into this valuation. As shown in the model, "Div" represent current dividend paid, "g" is the

dividend growth rate, and "Re" is the expected return on stock, from the investors. This model shows the value per share of the company stocks.

$$\boldsymbol{P_0} \quad = \quad \frac{\boldsymbol{Div\,(1+g)}}{\boldsymbol{(Re-g)}} \qquad \_(1)$$

According to another assumption made in this study, the investor is seeking to invest in a well-diversified portfolio. Following this assumption, the expected return on stock or any asset could be calculated by a well known formula called "Capital Asset Pricing Model" or "CAPM". Referring to the stock price model obtained above, the required rate of return on stock will be replaced with the expected return on asset from CAPM (the result of this replacement is shown below). The new terms introduced here is the return on risk free asset (Rf), the market risk premium (RPm), which basically is the difference between market return (Rm), the risk free return (Rf), and the beta coefficient (*b*) which is the market risk of the company stock.

$$\boldsymbol{P_0} \quad = \quad \frac{\boldsymbol{Div(1+g)}}{\boldsymbol{(Rf \;+\; RPm * b - g)}} \qquad \_(2)$$

Under the CAPM theory, the expected required rate of return on stock for investors depend on three things; which are, risk free return, the market risk premium, and the systematic risk of that particular stock (beta coefficient). In order to link the debt-equity ratio with the stock pricing model, the systematic risk in the equation will be replaced with the beta of the leverage firm acquired from the Hamada equation. As mentioned earlier, Hamada has claimed that the systematic risk of the levered firm is associated with the financial risk from using debt financing, thus the systematic risk of a levered-free firm is lower than that of a levered firm since it has to take into account this leverage risk. From the equation below, the study could now relate firm leverage decision with the valuation of the stock price. The term b_0 is the systematic risk of unleveraged firms while $\frac{D}{E}$ represents the firms leverage, and *T* is the relevant tax rate.

$$\boldsymbol{P_0} \quad = \quad \frac{\boldsymbol{Div\,(1+g)}}{\boldsymbol{(Rf + RPm * b0 * [\,1 + \frac{D}{E}(\,1 - T)\,] - g)}} \qquad \_(3)$$

This study is attempted to find the factors that are associated with the leverage decision of the firm, so the equation have to be rearranges by moving leverage ratio or debt-equity ratio to one side and the rest of the factors to the other side.

$$\frac{\boldsymbol{D}}{\boldsymbol{E}} = \frac{\frac{\boldsymbol{Div}\,(\mathbf{1}+\boldsymbol{g})}{\boldsymbol{P0}} + \boldsymbol{g} - (\boldsymbol{Rf} + \boldsymbol{RPm} * \boldsymbol{b0})}{[\boldsymbol{RPm} * \boldsymbol{b0} * (\mathbf{1} - \boldsymbol{T})]} \quad \_(4)$$

According to the model obtained after re-arrangement, the leverage ratio could be expressed in the terms of many variables which are tied together. Therefore, the logarithmic function is used to isolate the equation into separate terms for analytical purposes. The model, post log-function is shown as;

$$\log\left(\frac{\boldsymbol{D}}{\boldsymbol{E}}\right) = \log\left[\frac{\boldsymbol{Div}\,(\mathbf{1}+\boldsymbol{g})}{\boldsymbol{P0}} + \boldsymbol{g} - (\boldsymbol{Rf} + \boldsymbol{RPm} * \boldsymbol{b0})\right] - \log(\boldsymbol{RPm}) - \log(\boldsymbol{b0}) - \log(\mathbf{1} - \boldsymbol{T}) \quad \_(5)$$

Referring to the second assumption on the beta of unlevered firms, where the unlevered beta was assumed to equal to 1, the following parts from equation (5) would have to be modified due to the change in two areas as follows:

1.) $\log(b0) = 0$; since b_0 is equal to 1, so this term in the equation would be eliminate.

2.) $(Rf + RPm * b0) = Rm$, which is the return on market. This is because " $RPm = Rm - Rf$ " and "$b_0 = 1$".

Moreover, when look closely at the first term on the right-hand side of the equation, it shows the combination terms between the company's dividend policy and the return on market as the result of the change made earlier. However, if re-arrange the stock valuation model (in the equation 1) by holding "Re" on one side of the equation and the rest of the variables on the other side, then it results as the Dividend Capitalization Model which is similar to the first part of the combination of the equation (5). This dividend capitalization model is another approach used in order to calculate expected return on equity, meaning that in this case, it could replace the first part of the combination term of the model with the term "Re". From this, the first term of the model would be reduced to "log (Re – Rm)", and it measures the excess return

on stock over the market return, which will be given the name of "The Excess Risk Premium".

$$\log\left(\frac{D}{E}\right) = \log(Re - Rm) - \log(RPm) - \log(1 - T) \quad \text{; or}$$

$$\log\left(\frac{D}{E}\right) = \log(Re - Rm) - \log(Rm - Rf) - \log(1 - T) \quad \text{(6)}$$

The analysis of this equation may be that the leverage decision could be determined by those terms on the right-hand side of the equation. The first term in the model is the excess risk premium, expressing as "Re – Rm", which represents a return that the company's stock provided over the return on market portfolio or the market return. Having this term in the model, this study would be able to observe how the additional expected return from investing in a stock over the overall market could affect the firm's financial decision.

The second term in the equation is the market risk premium, written as "Rm – Rf", which is the excess of the return that compensates for higher risk investment in the overall stock market.

The last term in the model that is predicted to have an impact on firm leverage is the company's tax shield. When debt is used, the firm will have to pay more interest, but lower tax due to the lower taxable income, so the amount of tax saved should have some impact on the firm's capital structure.

3.3 The Sensitivity Analysis of Excess Risk Premium on Firm's Leverage Decision

Many researchers and modelers have claimed that the company's leverage decision is related to the amount of tax saving or tax shield and the movement of the market; however, according to the equation obtained in the previous section, this study has introduced a new term which is the excess risk premium. In order to predict and monitor the impact of the excess risk premium on a firms leverage decision, this paper will use a simulation technique to generate the sensitivity analysis. To do this simulation, it has to use the assumed values of each variable, but these values will be closely related to the real value in Thailand. The assumed values of this simulation are tax=30% according to the tax rate in Thailand, where the risk free return (Rf) is fixed at 3%.

To capture the impact of excess risk premium (Re-Rm) on firm capital structure from the simulation, this paper will be focusing on the systematic risk (Beta) because it has direct impact on Re (expected return on equity), and it is known that the higher risk, the higher expected return, hence the higher excess return on stocks over the market. In this case, the study assumed that the beta is varied as 1.5, 2, 3, 4 and 10. The assumed value of the market return will be increasing from 8% to 16% with incremental of 2%. The results from this simulation are as follows:

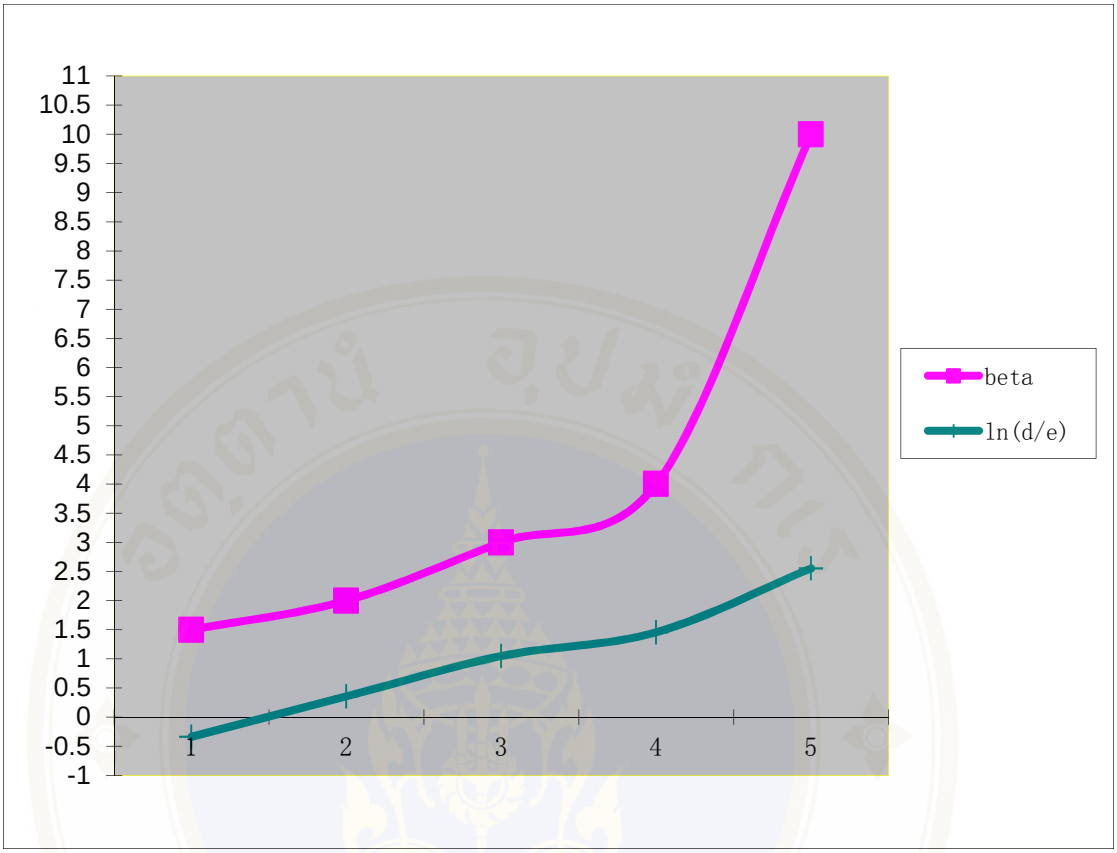

Figure 3.2: Sensitivity Analysis

Generally, the beta or firm's systematic risk is used to calculate the expected return on equity (Re) according to CAPM approach and it has been proved by Hamada that as this systematic risk has positive relationship with the expected return on stocks, in other words; as the firms systematic risk increases, it would results in higher levels of Re, hence; the gap between the company's return on stock over the market return is also higher.

According to Figure 3.2, there are two lines where the top line represents different level of beta and the bottom line shows the outcome from each of the assumed value of beta on leverage decision of the firm. From the result, the firm's leverage tends to increase with the beta, so it could predict that the leverage decision of the firm has a positive relationship with the excess risk premium since the beta and the excess risk premium are also positively related to each other. However, from this figure, it could be assumed that the beta and the firm's leverage ratio are not linearly related. As shown by the first half of the graph, these two lines are increasing almost

parallel to each other up to a certain level, and then the slope of the beta becomes higher than the slope of debt-equity ratio. In other words, the beta increases at the increasing rate while the leverage ratio is increasing at an almost constant rate. To conclude, as the firm's leverage increases, it causes the firms risk to increase but at a higher rate.

3.4 Empirical Model

According to the model developed earlier, this paper theoretically predicted that the excess risk premium, the market risk premium, and the firm's tax shield would have some impact on firms leverage ratio. In addition, this documentary would like to include a few more control variables into the analysis; which are, operating assets and company pre-tax operating profits since these two items represent the efficiency of the company. Furthermore, this study also wants to examine whether the industrial classification has any impact on the firms leverage decision or not. In this case, these top thirty-two companies would be classified into 5 different categories:(1) Services, (2) Resources, (3) Agro &Food Industry, (4) Property &Construction, and (5) Others Industries. According to this, 4 dummy variables would be added into the econometric model to capture the effect of the industry on capital structure. Moreover, to control the unobserved time-invariant effect and other seasonal effect, this paper will also have to add dummy variables for firm, year, quarter, and also add the trend variable into the model. From this, the model will be modified and the final econometric model is:

$$\log\left(\frac{D}{E}\right)_{it} = \alpha_1 + \alpha_2 Firm_{2i} + \alpha_3 Firm_{3i} + \ldots + \alpha_{32} Firm_{32i} + \alpha_{33} Year_{2i} + \alpha_{34} Year_{3i} + \ldots + \alpha_{36} Year_{5i} + \alpha_{37} Quarter_{2i} + \ldots + \alpha_{39} Quarter_{4i} + \alpha_{40} Industry_{2i} + \alpha_{41} Industry_{3i} + \ldots + \alpha_{43} Industry_{5i} + B_1 \log(ExRM)_{it} + B_2 \log(RP_m)_{it} + B_3 \log(TaxS)_{it} + B_4 PPE_{it} + B_5 EBITDA_{it} + B_6 Trend_{it} + u_{it}$$

According to the econometric model stated above, the left-hand side is the dependent variable of the model (which is the firm leverage ratio). In order to

investigate which factors have significant impact on company capital structure, the data use for this variable will be calculated by total debt divided by total equity of the firm.

After adding all these variables in the econometric model, in all there will have forty-eight variables; which are 6 explanatory variables including trend, thirty-one firm dummy variables, four years dummies, three quarter dummies, and four industries dummies. All the dummy variables are placed at the beginning of the econometric model leading by thirty one firm dummies which helps to control the fixed effect of the model, then following by four years dummies to make this model become the "two-way fixed effect model". This study is also concerned about the seasonal effect, so the addition of the three quarter dummy variables will be added into the model as well. Never the less, there are several studies that examine the effect of industry on the firms leverage decision, and most of the studies claimed that the industry classification has high significant impact on the firms' capital structure. According to this theory, the study will also show that the industry classification has some influence on the firms leverage ratio, so the addition of four dummy variables to represent five industries to capture the impact was included.

The first control variable in the model is "log (ExRM)" or in this case it is called the "excess risk premium", which refers to the excess of return the investors get when they invest in company's stocks rather than investing in the market portfolio (Re-Rm). To obtain the data for this variable, this study simply subtract the return from the firm's stock with the return from the overall market (use the return from the SET50 Index); The analysis from the previous section explains that the higher the gap between the expected return on equity and the market return, the higher leverage ratio, or in other words, when investors require more return, the company will need to borrow more money. The second term in this model is "log (RPm)" or the "market risk premium" which could be calculated by the return on market portfolio (Rm) minus the risk free rate (Rf). In this model, the risk free rate will be acquired from the 3-month T-Bill rate.

The third term is "log(TaxS)" which is the tax shield from using debt. Theoretically, this tax shield would have a positive relationship with the firms leverage. The more debt that the firm uses, the more tax benefit will be received. In

this study, the company's tax saving would be calculated by the company's interest expense multiply with the tax rate.

The company's operating asset could be used as collateral when the firm wants to borrow more money to finance the company's projects and payments, and in order to acquire those long-term assets, the firm must borrow more money; in this case, the operating asset is included into the model written as "log (PPE)". For the analysis, PPE is defined as: company net property, plant, and equipment and it could represent the size of the firm. Then, a theoretical prediction states that the net property, plant, and equipment would have positive impact on a firms leverage decision.

Next, the term "log (EBITDA)" in this model is referred to as, "the company's operating profit before the deduction of interest, tax, and depreciation." The more profit the firms have, the more internal funds will be available, resulting in a less external fund in which the firm will desire, according to the Pecking Order Theory. Thus, pre-tax profitability is theoretically and negatively associated with the firms leverage decision.

3.5 Data

This study will be based on the data in Thailand using the quarterly historical data over the past five years, beginning from the 1st quarter, 2006 to the 3rd quarter, 2010, which included the companies currently listed in the SET 50 index. The quarterly information of these firms will be extracted from Bloomberg. The data validation is the next concern, and it will be done by eliminating the company's with incomplete data during the period of this study. Eventually, thirty-two companies with the complete data will be all that is left.

CHAPTER IV
EMPIRICAL TEST AND RESULT

In this paper, the determinants of capital structure in Thailand's market will be investigated. According to the theoretical model, there are three factors that could have some influence on firm's capital structure decision; which are "the excess risk premium", "the market risk premium", and "the tax shield benefit". A simple regression of the model to find the relationship between the debt-equity ratio and these three variables will be needed.

Table 4.1 shows that this model has the R-square value of 0.1547 and the adjusted R-square of 0.1505, which means that the model could explain about 15.05% after taking into account numbers of regresses with the p-value (F) of 0.0000, so the model is statistically significant at 5%; meaning that at least some of the control variables could explain the variation of the firm's leverage decision. Then, if look closely at the coefficient of each variable, it pictures that the excess risk premium has the highest impact value to this model following by the tax shield from using debt, then the market risk premium respectively. However, only the excess risk premium and the tax shield from this model are significant at 10%

After the first regression, an improvement to the model by adding two more control variables will be done. The improvements are the firm's pre-tax operating profit (EBITDA), and the fixed asset, which many studies have claimed that these factors have some influence on the firm's Debt-Equity ratio.

According to table 4.2, the results reveals that the R-square and adjusted R-square have improved by a few percentages, which means that the explanatory power also improved from the previous model. Moreover, it could be seen that the significant level of the three explanatory variables from the previous model has improved as the p-value of each coefficient decreased. However, the two variables that were just added into the model (EBITDA and fixed asset) and the market risk premium (Rm – Rf) are still not significant at a 10% level, while the ranking of the impact of each variables to the leverage ratio still remain at the same rank with the

same positive impact, except for the EBITDA and fixed asset, where the result shows that they have a negative relationship with Debt-Equity ratio.

After adding two more variables into the model, this study also wants to account for the "fixed effect" by adding firm dummy variables into the model in order to take control of the time-invariant effect, which may be caused by different features of each firm; such as different management styles and different firm policy.

As predicted, the R-square and the adjusted R-square have increased by huge amounts to 90.02% and 89.39% which could be the result of adding more variables into the model while most of the coefficient of each control variables decrease after taking this fixed effect into account. As taking a look closely at each of the explanatory variable's coefficient, the coefficient of excess risk premium and market risk premium have a large decrease relatively compared to the tax shield. As the result, tax shields become the variables which have the highest impact to Debt-Equity ratio. There is also a slight change in EBITDA's coefficient with negative relationship between EBITDA and leverage ratio; however, this variable is still not significant. Nevertheless, the big difference in terms of interpretation after adding firm dummy variables into the model is the relationship between company's fixed asset and its leverage decision. Before taking the action of the fixed effect, the result from the regression shows that the company's fixed asset is negatively related to Debt-equity ratio; however, the coefficient becomes positive after the firms dummy variables were added into the model, which means that this control variable, fixed asset, could have positive impact on the level of the firm's Debt-Equity ratio.

Moreover, the study also believes that the leverage function could change over time; leads to the creation of an extended model, called "Two-Way Fixed Effect Model" by taking time and seasonal effect into account. In this case, this extended model will add four years dummies and three quarters dummies plus the trend variable to capture the movement of firm's leverage decision overtime. The result of the extension is reported in table 4.4 which shows the increase in both R-square and adjusted R-square from 90.02% to 90.58% and from 89.39% to 89.86% respectively. The slope coefficient of the explanatory variables change in the same direction as the previous model, where firm dummy variables are introduced; and also the sign of the coefficient remain unchanged according to the previous model, which means that their

relationship with leverage decision is the same except for the market risk premium which now have a negative relationship with firm's leverage decision, while the rank of the impact of each variable on Debt-Equity ratio remain the same. The result also shows that the significant level of most of the variables also increased as you could see that the p-value has decrease. Moreover, the trend variable have negative slope coefficient and also significant at 5% level (with the P-value of 0.0009), so this could be explained that the leverage ratio would decrease overtime.

The last extended model that becomes the econometric model in this paper is the one that account for both individual firm effect and also the overall market effect. There are many studies showing that the firms that are in different markets also have different capital structure. In this study, the four industry dummy variables are added into the model in order to capture the impact of industry classification on capital structure. It could be seen from the table 4.5 that all the industry dummy variables are significant at 5% level. However, there may be just a slightly decimal change in the R-square, adjusted R-square, the slope coefficient of the other five controlled variables, and its significant level (represented by t-statistic and p-value), so it seems that the result from this model is the same as the result of the previous model.

Table 4.6 reports the summary results from the regressions of the model, in which the implied factors jointly determine the capital structure of the firm in Thailand market. Each column in the table represents the slope-coefficient, R-square, adjusted R-square, t-statistic, and p-value from each model. Starting from the left to the right are the model that are more extended which include more explanatory variables in order to improve the explanatory power of the model. Model 1 and Model 2 show the results of the theoretical model and the extended model from adding EBITDA and fixed asset without taking into account the control of those unobserved time-invariant effect or any seasonal effect; while the next 2 models show the result from the one-way and two-way fixed effect model respectively. Moreover, this study also add several dummy variables and trend variable in order to take the control of seasonal effect into the fourth model, and the result shows that the explanatory power of the model have improved and the significant level is stronger as more variables were added to improve the model.

According to the econometric model 5, will have in all 48 coefficients to estimate including the common intercept, thirty-one firms dummies, four years dummies, three quarters dummies, four industries dummies, and six slope coefficient. Instead of adopting the regression on the firm's specific risks considering stochastic-time variation impacts, the model explicitly incorporates the systematic risks which implied by the overall market trend and type of business, to seek the determinations of Thai firm's leverage decision, from which the four industry dummy variables have been expressed for capturing the industrial classification's impacts.

Furthermore, the contradictory results from the coefficient parameters of fixed assets and market premium holding the time invariant, in the model 3 and the model 4 and 5, without and with trend dummies and industrial categories, respectively, argue the insufficient combination in the model 3 for the lack of systematic risks, which in turn, highlights the importance of the supportive dummy variables added in the model 4 and 5. As a result, it suggests that the model 5 contributes the relatively concrete and irresistible explanation power to the decision model of firms' leverage.

Refer to the empirical results of the econometric model 5; it concludes that the tax shield is statistically significantly relevant to the firm's leverage decision, with confidence level presumed at 5%, according to the relative highest slope coefficient among all other variables. It suggests that, while the level of tax shield increase by 1%, on average given other variables constant, the firm's leverage ratio would goes up by 0.121735%. The crucial exploration drawn from the completed model 5 implies the explicit determination of the industrial categories to the decision models of firm's capital structure. Nevertheless, with or without the completed variables incorporated, it results that excess return on stocks over the market return possesses the weakest-impacting power over the model, on the basis of its lowest significant coefficient parameter to the debt-equity ratio. In addition, although the relevance of EBITDA and the market risk premium has been indicated to be negatively, jointly with the opposite direction of impact from fixed assets, to the firm's leverage, the overall significance is too weak to reject null hypothesis.

Table 4.1: Theoretically Prove: Three Variables Model

Dependent Variable : ln(Debt-Equity Ratio)

Method : Least Square

Number of Observations : 608

Variable	Coefficient	Standard Error	t-Statistic	p-Value
ln(Re-Rm)	0.283709	0.157516	1.8000	0.0720
ln(Rm-Rf)	0.086477	0.176146	0.4900	0.6240
ln(Tax Shield)	0.122737	0.011706	10.4900	0.0000
Constant	-0.452211	0.048067	-9.4100	0.0000
R-Square	0.1547	**F-Statistic**	36.8500	
Adjused R-Square	0.1505	**Prob(F-Statistic)**	0.0000	

Table 4.2: Theoretically Prove: Extended Five Variables Model

Dependent Variable : ln(Debt-Equity Ratio)

Method : Least Square

Number of Observations : 608

Variable	Coefficient	Standard Error	t-Statistic	p-Value
ln(Re-Rm)	0.289936	0.1570201	1.8500	0.0650
ln(Rm-Rf)	0.113937	0.1763485	0.6500	0.5180
ln(Tax Shield)	0.138386	0.0133944	10.3300	0.0000
EBITDA	-1.95E-06	7.71E-06	-0.2500	0.8010
Fixed Asset	-9.14E-07	8.27E-07	-1.1000	0.2700
constant	-0.453734	0.0479037	-9.4100	0.0000
R-Square	0.1634	**F-Statistic**	23.5100	
Adjused R-Square	0.1564	**Prob(F-Statistic)**	0.0000	

Table 4.3: One-Way Fixed Effect Model (Five Control Variables)

Dependent Variable : ln(Debt-Equity Ratio)

Method : Least Square

Number of Observations : 608

Variable	Coefficient	Standard Error	t-Statistic	p-Value
ln(Re-Rm)	0.029589	0.057247	0.5200	0.6050
ln(Rm-Rf)	0.030503	0.064083	0.4800	0.6340
ln(Tax Shield)	0.122634	0.009594	12.7800	0.0000
EBITDA	-3.09E-06	4.07E-06	-0.7600	0.4480
Fixed Asset	4.86E-07	5.57E-07	0.8700	0.3830
_Firm2	2.89E-01	9.23E-02	3.1300	0.0020
_Firm3	6.28E-01	9.61E-02	6.5300	0.0000
:	:	:	:	:
:	:	:	:	:
constant	-0.878964	0.092414	-9.5100	0.0000
R-Square	0.9002	**F-Statistic**	143.0800	
Adjused R-Square	0.8939	**Prob(F-Statistic)**	0.0000	

Table 4.4: Two-Way Fixed Effect Model (Five Control Variables)

Dependent Variable : ln(Debt-Equity Ratio)

Method : Least Square

Number of Observations : 608

Variable	Coefficient	Standard Error	t-Statistic	p-Value
ln(Re-Rm)	0.021312	0.058618	0.3600	0.7160
ln(Rm-Rf)	-0.074925	0.101989	-0.7300	0.4630
ln(Tax Shield)	0.121735	0.009659	12.6000	0.0000
EBITDA	-3.45E-06	4.05E-06	-0.8500	0.3940
Fixed Asset	9.24E-07	5.71E-07	1.6200	0.1060
Trend	-0.006049	0.002310	-2.6200	0.0090
_Firm2	2.72E-01	9.08E-02	2.9900	0.0030
_Firm3	6.44E-01	9.43E-02	6.8300	0.0000
:	:	:	:	:
:	:	:	:	:
_Year2007	-0.096320	0.028366	-3.4000	0.0010
_Year2008	-0.118601	0.036476	-3.2500	0.0010
:	:	:	:	:
:	:	:	:	:
_Quarter2	0.012737	0.028780	0.4400	0.6580
_Quarter3	0.037838	0.028320	1.3400	0.1820
:	:	:	:	:
:	:	:	:	:
constant	-0.795522	0.094560	-8.4100	0.0000
R-Square	0.9058	**F-Statistic**	126.0600	
Adjused R-Square	0.8986	**Prob(F-Statistic)**	0.0000	

Table 4.5: Empirical Model

Dependent Variable : ln(Debt-Equity Ratio)

Method : Least Square

Number of Observations : 608

Variable	Coefficient	Standard Error	t-Statistic	p-Value
ln(Re-Rm)	0.021312	0.058618	0.3600	0.7160
ln(Rm-Rf)	-0.074925	0.101989	-0.7300	0.4630
ln(Tax Shield)	0.121735	0.009659	12.6000	0.0000
EBITDA	-3.45E-06	4.05E-06	-0.8500	0.3940
Fixed Asset	9.24E-07	5.71E-07	1.6200	0.1060
Trend	-0.006049	0.002310	-2.6200	0.0090
_Firm3	3.73E-01	9.13E-02	4.0800	0.0000
:	:	:	:	:
_Year2007	-0.096320	0.028366	-3.4000	0.0010
_Year2008	-0.118601	0.036476	-3.2500	0.0010
:	:	:	:	:
_Quarter2	0.012737	0.028780	0.4400	0.6580
_Quarter3	0.037838	0.028320	1.3400	0.1820
:	:	:	:	:
_Industry2	0.497799	0.109769	4.5300	0.0000
_Industry3	0.287259	0.091060	3.1500	0.0000
_Industry4	0.446013	0.089252	5.0000	0.0000
_Industry5	0.271501	0.090827	2.9900	0.0030
constant	-0.795522	0.094560	-8.4100	0.0000
R-Square	0.9058	**F-Statistic**	126.0600	
Adjused R-Square	0.8986	**Prob(F-Statistic)**	0.0000	

Table 4.6: Summary Table

Dependent Variable : ln(Debt-Equity Ratio)

Method : Least Square

Number of Observations : 608

Model :	Model 1		Model 2		Model 3		Model 4		Model 5	
Variable	**Coefficient**	**P-Value**	**Coefficient**	**P-Value**	**Coefficient**	**P-Value**	**Coefficient**	**P-Value**	**Coefficient**	**P-Value**
ln(Re-Rm)	0.283709	0.0720	0.289936	0.0650	0.029589	0.6050	0.021312	0.7160	0.021312	0.7160
ln(Rm-Rf)	0.086477	0.6240	0.113937	0.5180	0.030503	0.6340	-0.074925	0.4630	-0.074925	0.4630
ln(Tax Shield)	0.122737	0.0000	0.138386	0.0000	0.122634	0.0000	0.121735	0.0000	0.121735	0.0000
EBITDA			0.00000195	0.801	-3.09E-06	0.448	-3.45E-06	0.3940	-3.45E-06	0.3940
Fixed Asset			-9.14E-07	0.2700	4.86E-07	0.3830	9.24E-07	0.1060	9.24E-07	0.1060
Trend							-0.006049	0.0090	-0.006049	0.0090
_Industry2									0.497799	0.0000
_Industry3									0.287259	0.0000
_Industry4									0.446013	0.0000
_Industry5									0.271501	0.0030
constant	-0.452211	0.0000	-0.453734	0.0000	-0.878964	0.0000	-0.795522	0.0000	-0.795522	0.0000
R-Square	0.1547		0.1634		0.9002		0.9058		0.9058	
Adjused R-Square	0.1505		0.1564		0.8939		0.8986		0.8986	
Prob(F-Statistic)	0.0000		0.0000		0.0000		0.0000		0.0000	

CHAPTER V
CONCLUSION

The study aims at exploring the determinants of the Thai listed firms' capital structure, covering the year 2006 to 2010 quarterly, by employing discounted dividend model base on the value of the company stockholders as an analysis tool. Moreover, a few more factors that were theoretically suggested by many researchers have also been added into the model, resulting in five control variables in the econometric model which are; excess returns on the firm stocks over the overall market return (excess risk premium), market risk premium, amount of company's tax saving, EBITDA, and the value of company fixed assets.

According to the results, it can be concluded that company tax shield is the most important factor that influences firm's willingness to employ a higher degree of financial leverage and there are several researchers that develop models and theories to support this. For example, the study of Modigliani and Miller in 1963 states that, firm should borrow as much as possible because the more they borrow the less tax they have to pay.

Even though the corporate income tax rate in Thailand is relatively low when compared to other countries, Thai firms are still borrowing more and enjoy the tax shield benefits from incurring debt due to the immaturity of the Thai market. In accordance with the fact that Thailand is a developing country, most companies in developing countries choose debt over equity when they raise more funds to finance the projects. Furthermore, it is possible that Thai companies select a method of raising more capital by relying upon the pecking order theory where they use debt financing ahead of equity financing.

The results also reveal that the type of industry that a firm resides in plays a role in explaining the firm's debt ratio to a certain extent. Normally, different industries have different liquidity levels and require different sizes of the investment; therefore it is probable that the businesses in the industries that require a large amount

of investment may acquire more debt than smaller businesses that require lower investment. For example, Banpu Public Company Limited and Glow Group are in resources industry where their core business is to provide power and energy supplies, so a vast investment is required to finance their projects resulting in the high debt ratio to this type of the firm. Whereas, the investment required by companies; such as BEC World and Bumrungrad Hospital, that operate in the service industry is relatively low when compared to the larger companies mentioned earlier, so most of the firms in this industry show relatively lower leverage ratio.

Unfortunately, the rest of the control variables, which are excess risk premium, market risk premium, the firm's EBITDA, and fixed assets, are not statistically significant. It results in the rejection of the argument that, as relative higher level of excess risk premium are realized so does firm's willingness to increase the degree of financial leverage, which is in inconsistency with the theoretical sensitivity analysis performed by the study in which the instantaneous co-movement exists between the systematic risk beta and excess risk premium. The reason of this contradictory could be that most of the Thai firms are not well-diversify due to the fact that Thailand is still the developing country, so the expected return of the firm's equity is not fully rely on the market risk ; hence, the excess risk premium shows no result on the firm debt-equity ratio as predicted.

In addition, according to the Thai market that has yet to mature, it could be that the firm's systematic risk does not fully depend upon the market, in other words, firms tend to rely more upon their specific risk, and that may be the reason why the relationship between the market risk premium and the firm Debt-Equity ratio are not significant.

The firm's earning and debt ratio that theoretically was supposed to demonstrate correlations between each other within failed to display their relationships which could be due specifically to the lagging effect that the company's earning has on debt ratio; for instance, the firm's earning in this period could have an impact on the firm's financial leverage decision in the future periods. Lastly, the company fixed assets which could implicate the size of the firm failed to show the positive relationship between debt-equity as suggested by many researchers as they claimed that the more a company acquires these fixed asset, the more money the company

needs to borrow and some studies explained that firms could use their fixed asset as a collateral when firm borrow money, hence, fixed asset could be another driver of higher firm's leverage level. The contradict results may arise from the same reason as the failure linkage between the company's operating profits and the firm capital structure, where the company fixed assets in this period may lead to higher leverage to the firm in other periods because firm will have to use the fixed assets that they already have as the collateral when they borrow more money. In other words, the company's fixed assets have lag impact on firm's capital structure.

This study shows that the capital structure of the firm is determined by a concoction of many factors. The use of debt financing could benefit the firm in terms of tax saving, however it also create more risk to the company's shareholders. In addition, the company financial policy makers should be concern about the type of business they are doing and try to compare its debt-equity ratio to the industrial average. Furthermore, the firm's condition such as the firm's operating profit and the level of fixed assets should also be considered when firm decide which type external funds they should utilize.

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APPENDIX

Company	ln(D/E)	Firm	Industry	Year	Qtr	Trend	ln(Re-Rm	ln(Rm-Rf)	ln(TaxShield)	EBITDA	FixAssets
ADVANC TB Equity	-0.55	1	1	2006	1	1	-0.3147	0.0693	4.5904	12491.39	83216.63
	-0.49	1	1	2006	2	2	-0.0241	-0.0429	4.5852	10581.26	82478.25
	-0.25	1	1	2006	3	3	0.0953	-0.1617	4.7140	9856.03	87416.85
	-0.31	1	1	2006	4	4	-0.2029	-0.0042	5.0332	14139.35	88893.23
	-0.37	1	1	2007	1	5	-0.0416	-0.1442	4.9002	10518.48	90228.96
	-0.31	1	1	2007	2	6	0.1820	0.0385	4.8296	10303.07	89142.77
	-0.22	1	1	2007	3	7	-0.2017	0.1815	4.8559	17056.71	88151.02
	-0.34	1	1	2007	4	8	0.0340	0.0232	4.8539	7866.02	87088.26
	-0.44	1	1	2008	1	9	0.1541	-0.1801	4.7209	12453.34	84697.53
	-0.41	1	1	2008	2	10	-0.1467	0.0281	4.7735	13990.18	83338.09
	-0.30	1	1	2008	3	11	0.0562	-0.2549	4.8293	11702.46	8018.28
	-0.30	1	1	2008	4	12	0.3161	-0.5193	4.8818	13784.85	81189.12
	-0.27	1	1	2009	1	13	-0.0100	0.0388	5.0258	11692.05	79318.95
	-0.20	1	1	2009	2	14	-0.0302	0.1059	5.0042	11467.76	76898.97
	-0.20	1	1	2009	3	15	-0.2583	0.2286	4.9543	11598.04	8340.30
	-0.30	1	1	2009	4	16	-0.1989	0.0832	4.8923	11389.64	8167.49
	-0.32	1	1	2010	1	17	-0.0196	0.0041	4.8647	12896.09	65773.56
	-0.02	1	1	2010	2	18	-0.0947	0.0807	4.8721	12657.97	62151.93
	0.06	1	1	2010	3	19	-0.0262	0.0991	4.8609	12796.43	7465.29
AOT TB Equity	0.06	2	5	2006	1	1	-0.2208	0.0693	-0.0804	2860.56	10726.06
	0.04	2	5	2006	2	2	0.1425	-0.0429	0.1236	2446.03	10411.58
	0.11	2	5	2006	3	3	0.1272	-0.1617	2.3766	616.57	118748.13
	0.01	2	5	2006	4	4	-0.0368	-0.0042	5.1736	2764.19	117768.02
	0.06	2	5	2007	1	5	0.0826	-0.1442	5.1523	2796.98	116310.28
	0.04	2	5	2007	2	6	-0.0531	0.0385	5.1458	2276.67	112500.84
	0.06	2	5	2007	3	7	-0.1971	0.1815	5.2887	1595.52	117670.92
	0.04	2	5	2007	4	8	-0.1368	0.0232	5.2696	3094.27	110578.08

BGH TB Equity													
-0.04	2	5	2008	1	9	0.1195	-0.1801	5.2637	4742.76	109242.18			
-0.11	2	5	2008	2	10	-0.2310	0.0281	5.2490	5091.70	108097.09			
-0.08	2	5	2008	3	11	-0.1942	-0.2549	5.2629	2937.90	108182.17			
0.05	2	5	2008	4	12	-0.0325	-0.5193	5.2558	3084.93	106703.37			
0.00	2	5	2009	1	13	-0.1825	0.0388	5.2279	3318.09	111145.13			
-0.02	2	5	2009	2	14	0.4373	0.1059	5.2189	2613.06	103239.08			
0.03	2	5	2009	3	15	0.2703	0.2286	5.2222	1848.86	101841.50			
-0.03	2	5	2009	4	16	-0.1924	0.0832	5.2061	3244.24	100072.98			
-0.10	2	5	2010	1	17	-0.0364	0.0041	5.1650	4257.88	98439.96			
-0.06	2	5	2010	2	18	-0.2322	0.0807	5.1535	2533.86	96845.24			
-0.03	2	5	2010	3	19	0.0950	0.0991	5.2282	1992.30	96745.51			
0.32	3	5	2006	1	1	-0.0532	0.0693	3.3420	844.61	15109.48			
0.38	3	5	2006	2	2	0.1745	-0.0429	3.5544	735.75	16771.76			
0.42	3	5	2006	3	3	0.0253	-0.1617	3.8719	1125.39	17354.10			
0.40	3	5	2006	4	4	0.1792	-0.0042	3.9598	971.86	17864.50			
0.37	3	5	2007	1	5	0.1035	-0.1442	4.0704	1199.66	18401.01			
0.41	3	5	2007	2	6	0.1768	0.0385	3.9624	883.18	18527.14			
0.22	3	5	2007	3	7	-0.4101	0.1815	3.8903	1027.51	18734.68			
0.22	3	5	2007	4	8	-0.2389	0.0232	3.8359	1106.25	19296.30			
0.29	3	5	2008	1	9	0.0801	-0.1801	3.9065	1455.94	19294.54			
0.25	3	5	2008	2	10	0.1270	0.0281	3.7800	1181.84	19080.75			
0.22	3	5	2008	3	11	0.0033	-0.2549	3.8646	1048.39	19043.69			
0.14	3	5	2008	4	12	-0.0359	-0.5193	3.9670	1051.46	19824.49			
0.10	3	5	2009	1	13	-0.1124	0.0388	3.8500	1200.54	19794.46			
0.28	3	5	2009	2	14	0.1922	0.1059	3.9039	1133.72	19416.67			
0.14	3	5	2009	3	15	-0.1447	0.2286	3.9008	1270.42	19001.60			
0.06	3	5	2009	4	16	-0.1406	0.0832	3.8367	1269.05	19677.76			
0.02	3	5	2010	1	17	0.0076	0.0041	3.8346	1577.44	19396.81			
0.04	3	5	2010	2	18	0.0497	0.0807	3.8192	1031.15	19136.18			
0.00	3	5	2010	3	19	0.2066	0.0991	3.8303	1524.47	18826.93			

BANPU TB Equity	0.15	4	3	2006	1	1	0.0200	0.0693	4.2333	1266.15	15012.21
	0.09	4	3	2006	2	2	-0.1527	-0.0429	4.2530	2215.01	14127.84
	0.20	4	3	2006	3	3	0.2084	-0.1617	4.4294	1953.42	14265.86
	0.19	4	3	2006	4	4	0.1838	-0.0042	4.9971	9168.54	13444.75
	0.16	4	3	2007	1	5	0.1770	-0.1442	4.4060	1132.13	13534.75
	0.14	4	3	2007	2	6	0.2398	0.0385	4.5049	2663.12	15716.29
	0.09	4	3	2007	3	7	0.0665	0.1815	4.5129	2308.86	16751.08
	-0.37	4	3	2007	4	8	0.0900	0.0232	4.4371	1130.56	15986.63
	-0.59	4	3	2008	1	9	0.1618	-0.1801	4.2137	1339.42	16494.52
	-0.01	4	3	2008	2	10	0.1888	0.0281	4.3598	2614.76	30237.03
	-0.03	4	3	2008	3	11	-0.2952	-0.2549	4.7417	3560.74	31060.55
	-0.04	4	3	2008	4	12	0.1481	-0.5193	4.7140	3782.45	17579.88
	-0.26	4	3	2009	1	13	-0.1141	0.0388	4.7328	4663.32	20297.49
	-0.24	4	3	2009	2	14	0.3610	0.1059	4.7341	3992.44	21079.92
	-0.23	4	3	2009	3	15	0.0144	0.2286	4.6826	4031.77	20928.54
	-0.21	4	3	2009	4	16	0.2162	0.0832	3.8941	3023.74	17792.44
	-0.23	4	3	2010	1	17	0.0416	0.0041	4.5756	3506.93	19648.37
	-0.16	4	3	2010	2	18	-0.1084	0.0807	4.6609	3909.82	19844.95
	0.36	4	3	2010	3	19	0.0588	0.0991	4.9265	2152.42	50249.72
BEC TB Equity	-1.21	5	5	2006	1	1	-0.2032	0.0693	-4.8536	654.69	1857.69
	-1.75	5	5	2006	2	2	0.1681	-0.0429	-4.1997	1060.45	719.65
	-1.66	5	5	2006	3	3	0.2097	-0.1617	-4.1997	963.98	1861.89
	-1.79	5	5	2006	4	4	0.1793	-0.0042	-4.1396	765.73	1903.41
	-1.66	5	5	2007	1	5	0.1203	-0.1442	-4.2831	1078.69	1853.44
	-1.63	5	5	2007	2	6	-0.0140	0.0385	-4.6460	1144.38	1796.35
	-1.58	5	5	2007	3	7	-0.2498	0.1815	-2.0159	1258.26	1750.77
	-1.45	5	5	2007	4	8	0.1689	0.0232	-2.4899	1238.61	628.46
	-0.80	5	5	2008	1	9	0.1195	-0.1801	-4.5854	1329.17	1804.34

BIGCTB Equity														
-1.53	5	2008	5	2008	2	10	-0.2254	0.0281	-4.6152	1472.88	3013.01			
-1.48	5	2008	5	2008	3	11	0.0554	-0.2549	-4.5282	1379.49	1737.89			
-1.59	5	2008	5	2008	4	12	0.2728	-0.5193	-4.2199	1395.59	481.01			
-0.65	5	2009	5	2009	1	13	-0.1181	0.0388	-4.1799	1172.82	2860.35			
-1.49	5	2009	5	2009	2	14	0.0003	0.1059	-4.8536	1324.48	2881.42			
-1.74	5	2009	5	2009	3	15	-0.2080	0.2286	-5.4727	1500.50	2880.26			
-1.63	5	2009	5	2009	4	16	-0.0097	0.0832	-5.5315	1519.20	1557.54			
-0.59	5	2010	5	2010	1	17	-0.0084	0.0041	-6.0323	1483.41	2811.85			
-1.47	5	2010	5	2010	2	18	0.0127	0.0807	-6.0323	1533.68	1447.94			
-1.33	5	2010	5	2010	3	19	0.2532	0.0991	-6.1658	1702.88	1451.26			
-0.02	6		5	2006	1	1	0.1665	0.0693	1.6489	1462.57	20278.85			
0.02	6		5	2006	2	2	-0.0855	-0.0429	1.3507	1206.04	20608.60			
0.00	6		5	2006	3	3	0.1134	-0.1617	1.9087	1139.95	21246.40			
0.06	6		5	2006	4	4	0.1867	-0.0042	2.0797	1384.00	21915.11			
-0.03	6		5	2007	1	5	0.1646	-0.1442	1.8304	1501.82	22628.82			
0.09	6		5	2007	2	6	-0.1141	0.0385	1.6540	1320.74	23393.44			
0.08	6		5	2007	3	7	-0.2676	0.1815	1.8842	1248.01	24309.27			
0.20	6		5	2007	4	8	-0.1121	0.0232	1.9947	2723.60	25808.22			
0.10	6		5	2008	1	9	0.1596	-0.1801	1.9526	1698.35	27090.11			
0.24	6		5	2008	2	10	0.0004	0.0281	2.1939	1481.89	28131.99			
0.18	6		5	2008	3	11	0.0079	-0.2549	2.6405	745.22	24953.05			
0.14	6		5	2008	4	12	0.2542	-0.5193	2.6907	5775.71	28211.61			
0.01	6		5	2009	1	13	0.0336	0.0388	2.4015	1744.83	27772.67			
0.05	6		5	2009	2	14	-0.0847	0.1059	2.1844	-543.01	27127.54			
-0.04	6		5	2009	3	15	-0.2978	0.2286	2.1391	1392.95	23413.18			
-0.06	6		5	2009	4	16	-0.1355	0.0832	1.5544	6019.65	26396.39			
-0.24	6		5	2010	1	17	0.1382	0.0041	-0.2706	1796.71	25915.79			
-0.12	6		5	2010	2	18	0.0149	0.0807	-1.8892	-570.20	25447.28			
-0.31	6		5	2010	3	19	0.0677	0.0991	-0.3508	-666.80	25504.96			

BH TB Equity	0.04	7	5	2006	1	1	-0.0596	0.0693	2.0939	428.56	3370.71
	0.05	7	5	2006	2	2	0.0398	-0.0429	2.2191	423.61	3498.39
	-0.13	7	5	2006	3	3	0.2130	-0.1617	2.0686	454.65	3600.69
	-0.19	7	5	2006	4	4	-0.0529	-0.0042	2.0482	506.14	3751.95
	-0.23	7	5	2007	1	5	0.1562	-0.1442	2.1259	518.66	3820.81
	-0.08	7	5	2007	2	6	0.1242	0.0385	2.0936	505.48	3880.54
	-0.06	7	5	2007	3	7	-0.3461	0.1815	2.1280	532.64	3953.23
	-0.34	7	5	2007	4	8	-0.1628	0.0232	2.1117	307.70	4144.59
	-0.26	7	5	2008	1	9	-0.0252	-0.1801	2.1092	538.08	4846.88
	-0.30	7	5	2008	2	10	-0.0250	0.0281	2.1570	489.86	5101.22
	-0.34	7	5	2008	3	11	0.0911	-0.2549	2.1902	517.38	5242.46
	-0.41	7	5	2008	4	12	0.0456	-0.5193	2.1406	363.72	5373.73
	-0.54	7	5	2009	1	13	-0.2313	0.0388	1.9202	545.21	5415.29
	-0.50	7	5	2009	2	14	0.2845	0.1059	1.7531	501.62	5512.38
	-0.49	7	5	2009	3	15	-0.1669	0.2286	1.7200	520.23	5549.02
	-0.57	7	5	2009	4	16	-0.0844	0.0832	2.2084	423.37	5666.94
	-0.61	7	5	2010	1	17	0.0255	0.0041	1.5499	605.33	5762.71
	-0.55	7	5	2010	2	18	-0.0921	0.0807	1.5729	453.60	5851.96
	-0.56	7	5	2010	3	19	0.0081	0.0991	1.6948	628.73	5848.98
CPN TB Equity	0.53	8	2	2006	1	1	0.1784	0.0693	3.7194	738.75	23095.91
	0.58	8	2	2006	2	2	-0.0021	-0.0429	3.7502	723.31	23818.85
	0.55	8	2	2006	3	3	0.1048	-0.1617	4.0128	725.29	25096.40
	0.55	8	2	2006	4	4	0.1242	-0.0042	3.8553	1094.80	26351.70
	0.50	8	2	2007	1	5	0.1301	-0.1442	3.9004	898.40	26191.90
	0.59	8	2	2007	2	6	0.0625	0.0385	3.8299	830.74	26443.49
	0.55	8	2	2007	3	7	-0.2136	0.1815	3.9698	779.23	27304.34
	0.55	8	2	2007	4	8	-0.1677	0.0232	3.2494	638.51	28987.08
	0.46	8	2	2008	1	9	0.2356	-0.1801	3.6386	1002.59	29396.69
	0.50	8	2	2008	2	10	-0.2655	0.0281	3.6000	900.36	31191.07

	0.54	8	2	2008	3	11	-0.1135	-0.2549	3.6528	958.38	32326.14
	0.63	8	2	2008	4	12	0.2238	-0.5193	3.9080	753.53	34973.05
	0.66	8	2	2009	1	13	-0.1944	0.0388	4.0516	1151.97	38412.49
	0.82	8	2	2009	2	14	0.3678	0.1059	4.1826	1139.18	41523.95
	0.76	8	2	2009	3	15	-0.0837	0.2286	4.0940	1184.30	41877.98
	0.52	8	2	2009	4	16	-0.2573	0.0832	3.7025	798.68	42876.53
	0.46	8	2	2010	1	17	0.0032	0.0041	3.9209	1277.71	42654.65
	0.55	8	2	2010	2	18	-0.1392	0.0807	3.9545	794.15	43229.45
	0.53	8	2	2010	3	19	0.3304	0.0991	3.9705	770.66	44172.88
CPF TB Equity	0.05	9	4	2006	1	1	-0.2533	0.0693	4.8091	1412.02	40639.56
	0.11	9	4	2006	2	2	-0.0167	-0.0429	4.9114	2069.79	41254.82
	0.18	9	4	2006	3	3	-0.0150	-0.1617	5.0493	1680.49	42379.08
	0.22	9	4	2006	4	4	0.0012	-0.0042	5.1774	868.13	43233.20
	0.30	9	4	2007	1	5	0.0264	-0.1442	5.2317	-281.90	43630.90
	0.26	9	4	2007	2	6	0.0458	0.0385	5.1913	1948.02	43967.82
	0.21	9	4	2007	3	7	-0.2486	0.1815	5.1784	2491.57	44666.59
	0.28	9	4	2007	4	8	-0.1973	0.0232	5.0740	1023.21	45594.82
	0.29	9	4	2008	1	9	0.1195	-0.1801	5.1693	1424.76	45110.36
	0.32	9	4	2008	2	10	-0.2704	0.0281	5.1836	2129.51	45416.62
	0.34	9	4	2008	3	11	0.2369	-0.2549	5.2363	2735.18	45349.55
	0.31	9	4	2008	4	12	0.1548	-0.5193	5.2751	1778.03	44706.34
	0.26	9	4	2009	1	13	-0.0325	0.0388	5.3683	2346.70	45121.18
	0.15	9	4	2009	2	14	0.3015	0.1059	4.7671	4701.25	53901.89
	0.08	9	4	2009	3	15	0.3322	0.2286	4.8050	5847.74	46981.87
	0.10	9	4	2009	4	16	0.2895	0.0832	4.8717	3252.12	47543.03
	0.12	9	4	2010	1	17	0.2618	0.0041	4.8999	4544.39	47229.42
	0.04	9	4	2010	2	18	0.2289	0.0807	5.0094	5408.26	47053.54
	0.08	9	4	2010	3	19	0.1159	0.0991	4.7866	5382.86	47151.13
CPALL TB	0.94	10	5	2006	1	1	0.0182	0.0693	2.7753	-274.76	17432.41

Equity												
1.11	10	5	2006	2	2	0.0650	-0.0429	3.0823	-339.82	17619.31		
1.25	10	5	2006	3	3	-0.0690	-0.1617	3.2046	-349.89	17730.63		
1.47	10	5	2006	4	4	-0.0031	-0.0042	3.4234	1078.30	17866.82		
1.50	10	5	2007	1	5	0.0533	-0.1442	3.7004	1085.71	18154.44		
1.69	10	5	2007	2	6	0.4528	0.0385	3.8541	405.91	17846.18		
1.83	10	5	2007	3	7	-0.0861	0.1815	3.9693	-294.20	18479.31		
1.95	10	5	2007	4	8	-0.0950	0.0232	3.9060	554.72	18898.83		
1.68	10	5	2008	1	9	0.0860	-0.1801	3.7615	813.34	18823.29		
2.00	10	5	2008	2	10	-0.0332	0.0281	3.8376	1437.41	19706.36		
1.97	10	5	2008	3	11	0.1797	-0.2549	3.9049	485.57	20088.76		
0.32	10	5	2008	4	12	0.4207	-0.5193	2.9052	158.05	12994.56		
0.17	10	5	2009	1	13	-0.0268	0.0388	-1.3071	1042.08	13210.44		
0.24	10	5	2009	2	14	0.2101	0.1059	-1.0051	1207.98	13408.28		
0.19	10	5	2009	3	15	-0.0983	0.2286	-2.2653	1315.12	13513.94		
0.30	10	5	2009	4	16	0.1272	0.0832	-6.4070	3770.25	13825.28		
0.21	10	5	2010	1	17	0.0883	0.0041	-4.1997	1606.74	14068.64		
0.38	10	5	2010	2	18	-0.0520	0.0807	-4.0513	1727.07	14144.81		
0.33	10	5	2010	3	19	0.2991	0.0991	-8.1117	1600.82	14711.49		
DELTA TB Equity												
0.09	11	1	2006	1	1	-0.0105	0.0693	2.5216	855.66	3635.15		
-0.30	11	1	2006	2	2	-0.1862	-0.0429	2.3614	935.51	3500.82		
-0.20	11	1	2006	3	3	0.1696	-0.1617	1.7696	845.56	3437.04		
-0.23	11	1	2006	4	4	-0.0815	-0.0042	2.7786	538.59	3600.42		
-0.08	11	1	2007	1	5	-0.0211	-0.1442	2.8246	779.65	3829.86		
-0.38	11	1	2007	2	6	0.3561	0.0385	3.1797	1306.63	3724.19		
-0.38	11	1	2007	3	7	-0.3749	0.1815	1.3508	1215.87	3719.62		
-0.42	11	1	2007	4	8	-0.0173	0.0232	1.9750	1109.85	3643.65		
-0.45	11	1	2008	1	9	0.0985	-0.1801	2.1283	879.94	3568.84		
-0.30	11	1	2008	2	10	-0.0942	0.0281	2.3614	803.74	3866.94		
-0.33	11	1	2008	3	11	-0.0375	-0.2549	2.2101	1086.34	3840.85		

	-0.52	11	1	2008	4	12	0.1410	-0.5193	2.4431	655.94	3869.63
	-0.73	11	1	2009	1	13	-0.3520	0.0388	2.2498	620.10	3695.11
	-0.75	11	1	2009	2	14	0.2374	0.1059	0.9107	529.57	3696.82
	-0.64	11	1	2009	3	15	0.1077	0.2286	1.2164	795.82	3678.75
	-0.63	11	1	2009	4	16	-0.0484	0.0832	0.9695	813.57	3644.14
	-0.62	11	1	2010	1	17	-0.0058	0.0041	1.3023	907.77	3572.81
	-0.51	11	1	2010	2	18	0.1245	0.0807	1.0185	1247.78	3611.52
	-0.53	11	1	2010	3	19	0.0571	0.0991	1.7212	1500.35	3924.24
DCC TB Equity	0.07	12	2	2006	1	1	0.0085	0.0693	1.5780	365.50	2617.25
	0.18	12	2	2006	2	2	-0.2419	-0.0429	1.8026	313.81	2604.41
	0.16	12	2	2006	3	3	0.0580	-0.1617	2.0114	297.97	2603.13
	0.12	12	2	2006	4	4	-0.1540	-0.0042	2.0353	276.76	2569.34
	-0.12	12	2	2007	1	5	0.1456	-0.1442	1.8570	358.33	2509.05
	-0.14	12	2	2007	2	6	0.0256	0.0385	1.3620	345.16	2431.98
	-0.16	12	2	2007	3	7	-0.1237	0.1815	1.1850	296.57	2374.69
	-0.25	12	2	2007	4	8	-0.1360	0.0232	1.1720	270.10	2304.22
	-0.58	12	2	2008	1	9	0.1716	-0.1801	0.8624	409.86	2245.13
	-0.48	12	2	2008	2	10	0.0419	0.0281	0.3952	333.61	2191.68
	-0.47	12	2	2008	3	11	0.0528	-0.2549	0.7273	276.78	2140.65
	-0.53	12	2	2008	4	12	0.0677	-0.5193	0.9812	288.41	2096.53
	-1.06	12	2	2009	1	13	0.1439	0.0388	0.4453	481.84	2032.94
	-1.12	12	2	2009	2	14	0.3168	0.1059	-2.8860	430.86	1979.85
	-1.21	12	2	2009	3	15	-0.1324	0.2286	-3.0058	420.62	1958.79
	-1.08	12	2	2009	4	16	0.2033	0.0832	-5.0864	417.92	1980.88
	-1.01	12	2	2010	1	17	0.2150	0.0041	-8.1117	581.39	1971.85
	-0.98	12	2	2010	2	18	0.0586	0.0807	-7.4186	540.11	2053.71
	-1.17	12	2	2010	3	19	0.0652	0.0991	-8.1117	447.46	2104.69
EGCO TB Equity	-0.06	13	3	2006	1	1	-0.1603	0.0693	4.6149	2662.42	37236.73

GLOW TB Equity														
-0.04	13	3	2006	2	2	-0.0807	-0.0429	4.8341	2893.74	39367.15				
-0.11	13	3	2006	3	3	0.1789	-0.1617	4.4351	2010.92	40168.66				
-0.04	13	3	2006	4	4	0.1389	-0.0042	4.4613	2030.46	41247.18				
-1.02	13	3	2007	1	5	0.1141	-0.1442	4.0468	1695.49	19756.19				
-1.16	13	3	2007	2	6	0.0325	0.0385	4.2018	1491.88	19408.89				
-1.17	13	3	2007	3	7	-0.1692	0.1815	4.1148	2885.42	18962.96				
-1.29	13	3	2007	4	8	-0.0940	0.0232	4.1186	1300.11	18637.63				
-1.36	13	3	2008	1	9	-0.0073	-0.1801	3.9002	1701.48	18111.00				
-1.51	13	3	2008	2	10	-0.2000	0.0281	3.8859	1454.13	17792.04				
-1.53	13	3	2008	3	11	-0.0692	-0.2549	3.7469	1456.50	17493.00				
-1.27	13	3	2008	4	12	0.3862	-0.5193	3.8821	966.13	17040.71				
-1.33	13	3	2009	1	13	-0.0874	0.0388	3.8105	1388.64	16553.86				
-1.42	13	3	2009	2	14	0.0012	0.1059	3.7707	1219.65	16063.76				
-1.14	13	3	2009	3	15	-0.2730	0.2286	3.6372	1069.94	15588.27				
-1.46	13	3	2009	4	16	-0.0678	0.0832	3.7771	1145.65	15067.99				
-1.52	13	3	2010	1	17	-0.0071	0.0041	3.7976	1148.59	14617.68				
-1.59	13	3	2010	2	18	-0.0738	0.0807	3.7886	1115.52	14079.50				
-1.58	13	3	2010	3	19	0.0191	0.0991	3.7176	982.17	13758.14				
0.12	14	3	2006	1	1	0.1388	0.0693	4.5239	2210.51	42948.01				
0.20	14	3	2006	2	2	-0.1155	-0.0429	4.5628	2199.97	42501.28				
0.25	14	3	2006	3	3	0.1536	-0.1617	4.5994	2207.90	41800.47				
0.06	14	3	2006	4	4	0.1163	-0.0042	4.5871	2117.00	40992.05				
-0.04	14	3	2007	1	5	0.0624	-0.1442	4.4489	2158.83	41284.53				
-0.02	14	3	2007	2	6	-0.1231	0.0385	4.4413	2140.29	41403.82				
0.01	14	3	2007	3	7	-0.0857	0.1815	4.4564	2130.21	41258.83				
-0.15	14	3	2007	4	8	-0.1033	0.0232	4.3463	2026.05	40861.68				
-0.20	14	3	2008	1	9	0.0870	-0.1801	4.1816	1919.86	41257.82				
-0.04	14	3	2008	2	10	-0.1504	0.0281	4.1728	2115.29	43587.55				
0.09	14	3	2008	3	11	0.1281	-0.2549	3.9338	1921.17	49461.52				
0.28	14	3	2008	4	12	0.1720	-0.5193	4.0495	1254.90	54324.60				

	0.35	14	3	2009	1	13	-0.1250	0.0388	4.1415	1489.70	55482.89			
	0.46	14	3	2009	2	14	0.4026	0.1059	4.1967	1980.20	62100.01			
	0.47	14	3	2009	3	15	-0.3651	0.2286	4.5592	2073.70	64133.77			
	0.49	14	3	2009	4	16	-0.0949	0.0832	4.5854	2164.36	67157.54			
	0.49	14	3	2010	1	17	0.1399	0.0041	4.5383	2364.35	69502.94			
	0.77	14	3	2010	2	18	-0.1377	0.0807	4.8171	2363.28	84308.34			
	0.66	14	3	2010	3	19	0.0264	0.0991	4.7529	2128.49	86839.50			
HMPRO TB Equity	1.15	15	5	2006	1	1	0.1192	0.0693	2.2516	114.60	5798.39			
	1.16	15	5	2006	2	2	-0.1092	-0.0429	2.7015	218.84	6721.42			
	1.14	15	5	2006	3	3	-0.0107	-0.1617	2.8204	194.87	7015.57			
	0.73	15	5	2006	4	4	0.2101	-0.0042	2.7893	565.95	8083.37			
	0.74	15	5	2007	1	5	-0.0505	-0.1442	2.6380	293.27	8562.57			
	0.70	15	5	2007	2	6	0.0652	0.0385	2.6481	317.18	8738.91			
	0.66	15	5	2007	3	7	-0.3823	0.1815	2.4836	331.75	8729.96			
	0.61	15	5	2007	4	8	-0.0803	0.0232	2.3634	621.33	8969.17			
	0.54	15	5	2008	1	9	0.1621	-0.1801	2.3108	361.32	8970.02			
	0.58	15	5	2008	2	10	-0.1201	0.0281	2.1890	364.17	8956.12			
	0.54	15	5	2008	3	11	0.0839	-0.2549	2.2452	401.97	8333.21			
	0.53	15	5	2008	4	12	0.0826	-0.5193	2.4741	412.57	8613.17			
	0.51	15	5	2009	1	13	0.2300	0.0388	2.2228	402.37	9554.88			
	0.51	15	5	2009	2	14	0.2145	0.1059	2.1388	426.08	9555.15			
	0.53	15	5	2009	3	15	0.1330	0.2286	2.0806	445.16	8773.81			
	0.49	15	5	2009	4	16	0.0244	0.0832	2.1050	484.13	8710.59			
	0.48	15	5	2010	1	17	0.2135	0.0041	1.9634	488.69	9585.28			
	0.61	15	5	2010	2	18	0.1303	0.0807	1.9847	549.32	8968.82			
	0.58	15	5	2010	3	19	0.3559	0.0991	2.1244	554.77	9403.54			
IRPC TB Equity	-0.69	16	3	2006	1	1	-0.2277	0.0693	5.1594	2796.49	87066.43			
	-0.64	16	3	2006	2	2	-0.0779	-0.0429	5.1352	4369.70	86238.98			

	-0.83	16	3	2006	3	0.0887	-0.1617	5.2906	3433.57	85234.61
	-0.61	16	3	2006	4	-0.1676	-0.0042	4.3997	-2561.30	61387.86
	-0.71	16	3	2007	1	0.0754	-0.1442	4.3616	3279.86	60893.39
	-1.16	16	3	2007	2	-0.0626	0.0385	4.3569	4842.65	60403.98
	-0.84	16	3	2007	3	-0.0934	0.1815	4.5007	5136.87	59971.36
	-0.83	16	3	2007	4	-0.1450	0.0232	4.4465	362.56	62310.71
	-0.88	16	3	2008	1	0.0403	-0.1801	4.5418	1640.37	61779.10
	-0.58	16	3	2008	2	-0.4391	0.0281	4.3821	6339.60	61554.97
	-0.60	16	3	2008	3	0.1719	-0.2549	4.7746	-3883.26	61594.41
	-0.68	16	3	2008	4	-0.0876	-0.5193	4.8447	18608.88	64275.93
	-0.66	16	3	2009	1	-0.1933	0.0388	4.0410	2311.01	64526.96
	-0.59	16	3	2009	2	0.4643	0.1059	4.5604	3483.94	64178.15
	-0.48	16	3	2009	3	0.0680	0.2286	4.2443	3085.44	63752.92
	-0.53	16	3	2009	4	-0.0931	0.0832	4.3180	740.31	64279.96
	-0.48	16	3	2010	1	0.0463	0.0041	3.1436	2525.22	64476.85
	-0.41	16	3	2010	2	-0.2328	0.0807	4.6977	2159.84	65075.48
	-0.45	16	3	2010	3	-0.1234	0.0991	4.9107	544.97	66718.04
LH TB Equity	-0.51	17	2	2006	1	-0.1522	0.0693	2.8606	894.32	5137.01
	-0.32	17	2	2006	2	-0.1536	-0.0429	2.5866	886.17	4792.62
	-0.21	17	2	2006	3	0.1207	-0.1617	2.3500	706.38	5182.04
	-0.25	17	2	2006	4	-0.1686	-0.0042	2.7723	1188.64	6952.91
	-0.36	17	2	2007	1	0.1184	-0.1442	2.5731	600.87	7026.30
	-0.34	17	2	2007	2	-0.0475	0.0385	2.3431	831.87	8024.79
	-0.32	17	2	2007	3	-0.1698	0.1815	2.6502	1178.65	8440.05
	-0.42	17	2	2007	4	-0.0283	0.0232	2.8918	1014.18	4036.28
	-0.57	17	2	2008	1	0.3616	-0.1801	2.5171	656.02	8354.59
	-0.51	17	2	2008	2	-0.4366	0.0281	2.1148	1275.37	8497.29
	-0.35	17	2	2008	3	0.0759	-0.2549	2.9268	870.95	8659.48
	-0.35	17	2	2008	4	-0.0045	-0.5193	3.0684	872.30	8662.47
	-0.39	17	2	2009	1	-0.2987	0.0388	2.8009	689.98	8723.24

	-0.34	17	2	2009	2	14	0.4625	0.1059	2.8644	1204.36	8685.48
	-0.37	17	2	2009	3	15	0.0437	0.2286	3.1298	1313.39	8778.67
	-0.33	17	2	2009	4	16	-0.1718	0.0832	3.1575	1066.18	8983.50
	-0.21	17	2	2010	1	17	-0.0578	0.0041	3.2534	1056.06	9133.28
	-0.26	17	2	2010	2	18	-0.2486	0.0807	2.8451	767.35	9192.92
	-0.07	17	2	2010	3	19	0.2432	0.0991	2.7249	525.68	9814.33
MINT TB Equity	0.15	18	4	2006	1	1	0.1374	0.0693	3.0239	796.36	11087.32
	0.11	18	4	2006	2	2	0.1413	-0.0429	2.9449	487.67	11276.02
	0.12	18	4	2006	3	3	0.1048	-0.1617	2.9565	607.43	11605.59
	0.17	18	4	2006	4	4	0.1838	-0.0042	2.9912	765.99	10411.48
	0.08	18	4	2007	1	5	0.0187	-0.1442	3.0454	915.27	11640.99
	0.13	18	4	2007	2	6	0.1544	0.0385	2.9927	587.89	11623.39
	0.24	18	4	2007	3	7	-0.1021	0.1815	3.1876	772.50	12037.27
	0.18	18	4	2007	4	8	0.1194	0.0232	3.3824	1025.06	12828.42
	-0.05	18	4	2008	1	9	0.0618	-0.1801	3.2660	1197.99	13173.35
	0.11	18	4	2008	2	10	-0.1626	0.0281	3.2156	695.39	13682.22
	-0.06	18	4	2008	3	11	-0.0198	-0.2549	3.1968	875.44	14283.67
	0.02	18	4	2008	4	12	0.0915	-0.5193	3.6363	825.36	14305.80
	0.06	18	4	2009	1	13	-0.2670	0.0388	3.4975	853.32	12958.00
	0.31	18	4	2009	2	14	0.1036	0.1059	3.2977	613.92	13396.75
	0.32	18	4	2009	3	15	0.2552	0.2286	3.5369	528.37	13601.84
	0.30	18	4	2009	4	16	-0.2068	0.0832	3.5314	1065.76	14064.36
	0.20	18	4	2010	1	17	-0.0440	0.0041	3.4169	1060.19	14654.84
	0.31	18	4	2010	2	18	-0.1960	0.0807	3.5275	419.02	15122.48
	0.31	18	4	2010	3	19	0.1953	0.0991	3.6444	435.21	15992.57
PS TB Equity	-0.71	19	2	2006	1	1	0.2800	0.0693	1.6311	488.49	1191.90
	-1.07	19	2	2006	2	2	-0.1713	-0.0429	1.1985	457.90	1197.42
	-1.21	19	2	2006	3	3	0.1830	-0.1617	0.9740	327.23	1192.32
	-1.28	19	2	2006	4	4	-0.1645	-0.0042	1.1301	450.97	1201.58

PTTCH TB Equity													
-1.28	19	2	2007	1	5	0.0588	-0.1442	1.0764	392.14	1214.11			
-1.20	19	2	2007	2	6	0.0450	0.0385	1.1774	449.06	1279.56			
-1.05	19	2	2007	3	7	0.0768	0.1815	1.4104	360.60	1306.52			
-1.05	19	2	2007	4	8	-0.0378	0.0232	1.4067	665.05	1314.14			
-1.00	19	2	2008	1	9	0.2822	-0.1801	1.5391	431.69	1402.73			
-0.72	19	2	2008	2	10	-0.1942	0.0281	1.7381	842.71	1438.26			
-0.58	19	2	2008	3	11	-0.0102	-0.2549	1.0433	753.18	1478.52			
-0.49	19	2	2008	4	12	0.0010	-0.5193	-0.1521	1163.87	1505.91			
-0.50	19	2	2009	1	13	-0.1480	0.0388	1.4935	958.19	1513.65			
-0.57	19	2	2009	2	14	0.6814	0.1059	0.7750	903.31	1485.10			
-0.70	19	2	2009	3	15	0.1167	0.2286	1.2483	908.63	1447.47			
-0.80	19	2	2009	4	16	0.3529	0.0832	1.3884	2224.19	1299.18			
-0.68	19	2	2010	1	17	-0.0339	0.0041	1.5217	1656.66	1337.19			
-0.31	19	2	2010	2	18	-0.0699	0.0807	0.9888	1143.77	1522.13			
0.06	19	2	2010	3	19	0.2063	0.0991	1.4357	519.42	1736.46			
-0.65	20	1	2006	1	1	-0.0441	0.0693	4.3340	5473.50	53038.41			
-0.64	20	1	2006	2	2	-0.0368	-0.0429	4.5170	5865.63	54191.67			
-0.62	20	1	2006	3	3	-0.0066	-0.1617	4.3111	6186.23	54848.72			
-1.01	20	1	2006	4	4	-0.0811	-0.0042	4.5929	6248.29	51791.45			
-1.07	20	1	2007	1	5	0.1512	-0.1442	4.3963	3991.99	72086.42			
-1.01	20	1	2007	2	6	0.0815	0.0385	4.5157	4201.49	77201.61			
-0.96	20	1	2007	3	7	0.1853	0.1815	4.3682	7965.39	82269.00			
-0.88	20	1	2007	4	8	-0.0988	0.0232	4.5378	9809.11	75721.77			
-1.01	20	1	2008	1	9	-0.0178	-0.1801	4.5127	7649.42	80227.70			
-0.99	20	1	2008	2	10	-0.0635	0.0281	4.4777	8152.62	86330.46			
-0.85	20	1	2008	3	11	-0.3012	-0.2549	4.6329	6694.56	91759.85			
-0.54	20	1	2008	4	12	-0.0709	-0.5193	4.8784	-2592.61	100061.28			
-0.48	20	1	2009	1	13	-0.1478	0.0388	5.1579	1902.25	104318.74			
-0.46	20	1	2009	2	14	0.5178	0.1059	5.0783	3928.84	107080.69			
-0.47	20	1	2009	3	15	0.1247	0.2286	5.1536	5020.05	109349.23			

														111063.47
-0.54	20	1	2009	4	16	-0.0920	0.0832	5.1386	4732.72	111063.47				
-0.55	20	1	2010	1	17	0.2369	0.0041	5.0834	4960.89	111507.48				
-0.59	20	1	2010	2	18	0.0091	0.0807	5.0999	4180.97	111412.98				
-0.59	20	1	2010	3	19	0.1525	0.0991	5.1612	3148.95	111377.65				
														103900.81
-0.04	21	3	2006	1	1	0.0510	0.0693	4.5704	15539.58	103900.81				
-0.22	21	3	2006	2	2	-0.0484	-0.0429	4.5475	16850.69	107879.68				
-0.20	21	3	2006	3	3	0.0953	-0.1617	4.5449	16487.98	111167.30				
-0.25	21	3	2006	4	4	-0.1443	-0.0042	3.8954	15040.54	121503.55				
-0.09	21	3	2007	1	5	0.0270	-0.1442	3.9786	15453.11	125932.85				
-0.24	21	3	2007	2	6	0.1231	0.0385	4.1884	16871.33	129690.60				
-0.30	21	3	2007	3	7	0.0291	0.1815	4.5249	17142.73	135058.75				
-0.25	21	3	2007	4	8	0.1403	0.0232	3.9735	18862.39	144089.20				
-0.18	21	3	2008	1	9	0.0548	-0.1801	4.0054	19897.12	147662.55				
-0.38	21	3	2008	2	10	0.1961	0.0281	4.1041	29794.80	151336.19				
-0.33	21	3	2008	3	11	-0.1677	-0.2549	4.2160	32835.34	154514.25				
-0.25	21	3	2008	4	12	0.2043	-0.5193	4.1857	15626.53	167326.09				
0.15	21	3	2009	1	13	-0.1531	0.0388	4.2583	18028.85	190616.42				
0.08	21	3	2009	2	14	0.2226	0.1059	4.8625	22535.28	197413.34				
0.10	21	3	2009	3	15	-0.2066	0.2286	5.1625	17917.01	203977.72				
0.10	21	3	2009	4	16	-0.0843	0.0832	5.2282	13807.84	206705.30				
0.09	21	3	2010	1	17	-0.0063	0.0041	5.0876	24659.95	213329.36				
-0.11	21	3	2010	2	18	-0.1390	0.0807	5.0719	27327.32	217863.00				
0.02	21	3	2010	3	19	-0.0489	0.0991	5.3337	25618.52	219510.60				
														316052.69
0.23	22	3	2006	1	1	-0.0854	0.0693	6.7288	37607.51	316052.69				
0.19	22	3	2006	2	2	-0.0425	-0.0429	6.8598	38646.24	298602.19				
0.15	22	3	2006	3	3	0.0542	-0.1617	6.4347	38909.94	312676.97				
0.11	22	3	2006	4	4	-0.0753	-0.0042	6.5562	29628.32	329609.03				
0.11	22	3	2007	1	5	0.0817	-0.1442	6.5659	33299.43	358676.38				

PTTEP TB Equity

PTT TB Equity

RATCH TB Equity	0.16	22	3	2007	2	6	0.2063	0.0385	6.6165	37121.39	378796.91
	0.20	22	3	2007	3	7	0.0146	0.1815	6.7995	43005.24	394222.22
	0.21	22	3	2007	4	8	0.0618	0.0232	6.5806	34361.89	315143.13
	0.09	22	3	2008	1	9	-0.0242	-0.1801	6.6283	36383.23	324059.66
	0.10	22	3	2008	2	10	-0.1118	0.0281	6.7729	46081.46	332383.00
	0.07	22	3	2008	3	11	-0.0592	-0.2549	6.7937	55795.39	347520.50
	0.05	22	3	2008	4	12	0.1412	-0.5193	6.8253	10727.23	374614.09
	0.15	22	3	2009	1	13	-0.1977	0.0388	6.7994	25616.66	408208.59
	0.24	22	3	2009	2	14	0.3443	0.1059	6.9045	35838.81	453961.53
	0.28	22	3	2009	3	15	-0.1619	0.2286	7.0791	35343.59	460191.33
	0.20	22	3	2009	4	16	-0.1734	0.0832	7.0407	30650.94	474586.63
	0.19	22	3	2010	1	17	0.0474	0.0041	7.0342	43739.47	519906.94
	0.15	22	3	2010	2	18	-0.1710	0.0807	7.0627	44480.79	532973.44
	0.15	22	3	2010	3	19	0.0829	0.0991	7.1522	40935.00	539536.45
	0.07	23	3	2006	1	1	-0.1598	0.0693	4.5880	2623.83	46909.15
	0.05	23	3	2006	2	2	-0.1430	-0.0429	4.7038	2733.83	46750.01
	0.12	23	3	2006	3	3	0.1018	-0.1617	4.7208	3922.32	45867.28
	0.08	23	3	2006	4	4	0.1687	-0.0042	4.7203	1693.68	45233.23
	-0.02	23	3	2007	1	5	0.1422	-0.1442	4.6776	2666.27	44572.13
	-0.04	23	3	2007	2	6	-0.0481	0.0385	4.5956	2336.76	43920.65
	-0.08	23	3	2007	3	7	-0.2403	0.1815	4.6258	1276.96	43561.56
	-0.13	23	3	2007	4	8	-0.0910	0.0232	4.6124	1585.83	42575.47
	-0.20	23	3	2008	1	9	0.1368	-0.1801	4.5766	2152.01	42206.49
	-0.27	23	3	2008	2	10	-0.1665	0.0281	4.5540	2121.34	41552.75
	-0.30	23	3	2008	3	11	0.0207	-0.2549	4.6033	2705.17	41039.93
	-0.36	23	3	2008	4	12	0.4735	-0.5193	4.5643	2348.78	40078.93
	-0.35	23	3	2009	1	13	-0.1628	0.0388	4.3567	2835.51	39721.68
	-0.46	23	3	2009	2	14	-0.1466	0.1059	4.2211	2554.43	39058.00
	-0.51	23	3	2009	3	15	-0.3316	0.2286	4.0636	2294.20	38405.87
	-0.58	23	3	2009	4	16	-0.1721	0.0832	3.9898	1378.61	37761.84

SSI TB Equity	-0.52	23	3	2010	1	17	0.0118	0.0041	3.9288	2069.64	37091.19		
	-0.55	23	3	2010	2	18	-0.1087	0.0807	3.9004	2317.10	36431.49		
	-0.66	23	3	2010	3	19	-0.0676	0.0991	3.9462	1695.73	35807.48		
	0.57	24	1	2006	1	1	-0.0258	0.0693	4.8751	444.12	20702.58		
	0.41	24	1	2006	2	2	0.0501	-0.0429	4.8682	606.26	20560.99		
	0.30	24	1	2006	3	3	-0.0193	-0.1617	4.7873	1130.38	20517.97		
	0.21	24	1	2006	4	4	-0.1243	-0.0042	4.7682	-1408.60	20535.84		
	0.13	24	1	2007	1	5	0.1253	-0.1442	4.6996	510.87	20456.58		
	-0.07	24	1	2007	2	6	-0.1125	0.0385	4.4627	742.10	20353.21		
	-0.23	24	1	2007	3	7	-0.3957	0.1815	4.2204	557.83	20207.45		
	-0.58	24	1	2007	4	8	-0.2170	0.0232	4.0197	643.23	22742.77		
	-0.81	24	1	2008	1	9	0.2316	-0.1801	3.7804	1047.71	22570.33		
	-0.84	24	1	2008	2	10	0.1000	0.0281	3.5174	1057.46	22365.49		
	-0.20	24	1	2008	3	11	-0.1801	-0.2549	3.7742	-1063.55	22165.08		
	0.40	24	1	2008	4	12	0.1387	-0.5193	4.5429	-4669.67	22179.72		
	0.46	24	1	2009	1	13	-0.4439	0.0388	4.5743	-3874.06	21973.87		
	0.30	24	1	2009	2	14	0.5994	0.1059	4.4536	1177.90	21743.17		
	0.18	24	1	2009	3	15	0.1480	0.2286	4.1006	1594.84	21561.04		
	0.34	24	1	2009	4	16	0.0787	0.0832	4.1394	4299.41	21252.01		
	0.11	24	1	2010	1	17	0.2336	0.0041	4.2176	1760.70	20983.92		
	0.12	24	1	2010	2	18	-0.1084	0.0807	4.0818	1229.65	20719.19		
	0.04	24	1	2010	3	19	0.0574	0.0991	4.1719	188.38	20493.26		
SCC TB Equity	0.64	25	2	2006	1	1	-0.1625	0.0693	5.7612	10998.19	91078.18		
	0.49	25	2	2006	2	2	-0.1061	-0.0429	6.0331	10940.57	90265.55		
	0.52	25	2	2006	3	3	0.1924	-0.1617	5.9501	12991.61	91506.56		
	0.35	25	2	2006	4	4	-0.0284	-0.0042	6.0689	11319.79	93004.60		
	0.50	25	2	2007	1	5	0.0676	-0.1442	5.9733	12154.85	94677.88		
	0.31	25	2	2007	2	6	0.0322	0.0385	5.9759	8648.11	97012.42		

SCCC TB Equity													
0.34	25	2	2007	3	7	-0.2914	0.1815	6.0085	9469.18	102504.19
0.25	25	2	2007	4	8	-0.1530	0.0232	5.9622	8922.91	108988.03
0.38	25	2	2008	1	9	0.0564	-0.1801	5.7971	9737.93	111876.76
0.29	25	2	2008	2	10	-0.1739	0.0281	6.2171	9930.28	117592.16
0.36	25	2	2008	3	11	-0.1616	-0.2549	5.9850	9852.07	127712.97
0.45	25	2	2008	4	12	0.1730	-0.5193	6.3945	2095.98	137261.00
0.49	25	2	2009	1	13	-0.0993	0.0388	6.1940	10934.01	142376.78
0.39	25	2	2009	2	14	0.3717	0.1059	5.9925	9891.99	146008.17
0.35	25	2	2009	3	15	0.1511	0.2286	6.0046	11283.80	149128.47
0.34	25	2	2009	4	16	-0.0404	0.0832	5.9896	9859.29	151803.69
0.41	25	2	2010	1	17	0.0743	0.0041	5.4571	9492.43	154075.98
0.32	25	2	2010	2	18	-0.0798	0.0807	5.8776	9471.48	151912.88
0.30	25	2	2010	3	19	0.1398	0.0991	6.0068	9483.57	150562.05
-0.94	26	2	2006	1	1	-0.2773	0.0693	1.2182	1722.33	11312.10
-1.36	26	2	2006	2	2	-0.2908	-0.0429	1.8844	1601.43	11425.33
-1.06	26	2	2006	3	3	0.1432	-0.1617	1.8690	1537.98	11596.67
-1.16	26	2	2006	4	4	0.0399	-0.0042	2.1086	1198.76	12088.24
-0.80	26	2	2007	1	5	0.1396	-0.1442	1.9269	1807.90	12332.01
-1.25	26	2	2007	2	6	-0.0399	0.0385	1.9218	1372.03	12087.55
-0.97	26	2	2007	3	7	-0.2423	0.1815	1.9667	1196.67	12380.69
-1.04	26	2	2007	4	8	-0.1437	0.0232	2.2833	835.21	12518.61
-1.18	26	2	2008	1	9	0.0192	-0.1801	2.0044	1547.48	12626.26
-1.05	26	2	2008	2	10	-0.2091	0.0281	2.2350	1303.95	12987.18
-0.66	26	2	2008	3	11	0.0016	-0.2549	2.4947	1111.74	13008.57
-0.73	26	2	2008	4	12	0.1917	-0.5193	3.0549	1091.21	13423.56
-0.94	26	2	2009	1	13	-0.1255	0.0388	2.7259	1533.57	13463.16
-0.66	26	2	2009	2	14	0.1994	0.1059	2.3661	1105.85	13378.14
-0.66	26	2	2009	3	15	0.1220	0.2286	2.8473	1148.17	13772.23
-0.72	26	2	2009	4	16	-0.1033	0.0832	2.7462	1109.02	14240.47
-0.70	26	2	2010	1	17	-0.0385	0.0041	2.6644	1385.86	14199.18

	-0.69	26	2	2010	2	18	-0.1812	0.0807	2.6588	1138.18	14271.28
	-0.67	26	2	2010	3	19	0.0006	0.0991	2.6724	1057.30	14332.45
MAKRO TB											
Equity	-0.02	27	5	2006	1	1	0.0540	0.0693	-1.5838	447.88	9102.89
	-0.02	27	5	2006	2	2	-0.2833	-0.0429	-1.6134	419.46	9042.72
	-0.02	27	5	2006	3	3	0.1863	-0.1617	-1.5649	501.64	8972.05
	0.19	27	5	2006	4	4	0.3263	-0.0042	-0.9602	578.85	9106.20
	0.06	27	5	2007	1	5	-0.0656	-0.1442	-3.0491	512.95	9244.25
	0.07	27	5	2007	2	6	0.0037	0.0385	-3.2139	486.84	10007.72
	0.15	27	5	2007	3	7	-0.1051	0.1815	-1.6550	527.22	11373.96
	0.41	27	5	2007	4	8	-0.0675	0.0232	0.2054	650.39	11913.70
	0.19	27	5	2008	1	9	0.1360	-0.1801	0.3160	679.27	11973.00
	0.16	27	5	2008	2	10	-0.1643	0.0281	0.3344	617.90	11799.65
	0.26	27	5	2008	3	11	0.0849	-0.2549	0.6209	684.15	11548.84
	0.35	27	5	2008	4	12	0.1884	-0.5193	1.6550	686.28	11733.67
	0.26	27	5	2009	1	13	-0.0600	0.0388	1.2955	553.80	11616.69
	0.30	27	5	2009	2	14	-0.0422	0.1059	1.2332	569.20	12141.31
	0.36	27	5	2009	3	15	-0.2856	0.2286	1.5325	747.80	135.50
	0.48	27	5	2009	4	16	0.0809	0.0832	1.1064	934.87	12820.59
	0.37	27	5	2010	1	17	0.0881	0.0041	0.9768	844.24	12979.72
	0.37	27	5	2010	2	18	0.0372	0.0807	0.8471	770.19	13105.94
	0.38	27	5	2010	3	19	0.2173	0.0991	0.8453	874.20	13160.98
STA TB											
Equity	0.91	28	4	2006	1	1	-0.0843	0.0693	3.6618	474.89	2148.13
	0.74	28	4	2006	2	2	0.3523	-0.0429	3.7978	504.75	2245.77
	0.60	28	4	2006	3	3	-0.0614	-0.1617	3.7202	256.23	2329.53
	0.93	28	4	2006	4	4	-0.0690	-0.0042	3.6326	-498.44	2371.40
	1.13	28	4	2007	1	5	0.1940	-0.1442	3.9232	16.89	2415.33
	0.91	28	4	2007	2	6	-0.1613	0.0385	3.7224	742.94	2393.95
	0.95	28	4	2007	3	7	-0.2610	0.1815	3.6282	70.37	2435.33

TOP TB Equity														
1.25	28	4	2007	4	8	-0.1450	0.0232	3.6531	-101.12	2585.02				
1.36	28	4	2008	1	9	0.2007	-0.1801	3.9402	485.33	2630.46				
1.10	28	4	2008	2	10	0.0868	0.0281	3.7788	295.47	2750.08				
0.90	28	4	2008	3	11	-0.0528	-0.2549	3.9391	545.68	3834.12				
0.59	28	4	2008	4	12	0.0906	-0.5193	3.8851	-42.79	3762.94				
0.50	28	4	2009	1	13	-0.1219	0.0388	3.4158	347.79	3850.94				
0.49	28	4	2009	2	14	0.2076	0.1059	2.9789	361.40	3911.20				
0.65	28	4	2009	3	15	0.0419	0.2286	3.2178	200.24	3910.46				
0.76	28	4	2009	4	16	0.3936	0.0832	3.1557	667.94	4245.34				
0.85	28	4	2010	1	17	0.5616	0.0041	3.4831	1101.41	4422.55				
0.43	28	4	2010	2	18	0.7348	0.0807	2.9613	1233.03	4605.99				
0.59	28	4	2010	3	19	0.1106	0.0991	3.1113	302.06	4846.36				
-0.27	29	3	2006	1	1	-0.0810	0.0693	4.9325	5254.80	71731.52				
-0.20	29	3	2006	2	2	-0.0464	-0.0429	4.9630	10241.31	71618.06				
-0.17	29	3	2006	3	3	0.0439	-0.1617	4.9721	5349.79	72098.23				
-0.18	29	3	2006	4	4	-0.1861	-0.0042	5.0036	3548.28	59293.52				
-0.26	29	3	2007	1	5	0.1898	-0.1442	4.9519	8309.16	75641.49				
-0.35	29	3	2007	2	6	0.1276	0.0385	4.9103	9564.24	78609.02				
-0.32	29	3	2007	3	7	-0.0099	0.1815	4.9293	7648.12	81266.23				
-0.10	29	3	2007	4	8	-0.0507	0.0232	4.6300	5482.36	71439.75				
-0.06	29	3	2008	1	9	-0.0567	-0.1801	4.7605	5922.86	73511.63				
0.20	29	3	2008	2	10	-0.3836	0.0281	5.0446	20979.99	73618.23				
0.13	29	3	2008	3	11	-0.0145	-0.2549	5.1601	-5494.80	72217.65				
									-					
0.09	29	3	2008	4	12	-0.0484	-0.5193	5.2405	10920.03	72214.68				
0.13	29	3	2009	1	13	0.0293	0.0388	5.2643	4971.47	71157.09				
0.08	29	3	2009	2	14	0.2381	0.1059	5.0769	8307.04	69988.17				
-0.01	29	3	2009	3	15	0.0055	0.2286	5.0159	3452.70	68797.10				
-0.08	29	3	2009	4	16	-0.1665	0.0832	4.8678	3513.31	67800.70				
-0.06	29	3	2010	1	17	0.1424	0.0041	4.8447	3176.92	66647.48				

													68172.23	
													67612.91	
TUF TB Equity	-0.08	29	3	2010	2	18	-0.2372	0.0807	4.9203	2429.40				
	-0.09	29	3	2010	3	19	0.0688	0.0991	4.9381	3410.56				
	-0.02	30	4	2006	1	1	-0.1341	0.0693	3.7128	828.95	5453.99			
	0.08	30	4	2006	2	2	-0.2284	-0.0429	3.7960	723.67	5524.16			
	0.05	30	4	2006	3	3	0.0766	-0.1617	3.8380	1165.72	5691.99			
	-0.08	30	4	2006	4	4	0.0055	-0.0042	3.8729	840.15	6072.73			
	-0.14	30	4	2007	1	5	-0.0092	-0.1442	3.6471	850.29	6170.35			
	-0.06	30	4	2007	2	6	0.0373	0.0385	3.7033	802.78	6418.09			
	0.18	30	4	2007	3	7	-0.2931	0.1815	3.7769	876.38	7763.26			
	0.27	30	4	2007	4	8	-0.1342	0.0232	3.9388	829.17	7745.42			
	0.11	30	4	2008	1	9	0.0287	-0.1801	3.7606	644.21	7924.34			
	0.19	30	4	2008	2	10	-0.2624	0.0281	3.5766	1197.64	8125.60			
	0.36	30	4	2008	3	11	0.3084	-0.2549	3.8680	1402.98	8305.66			
	0.37	30	4	2008	4	12	0.3142	-0.5193	4.1573	1403.12	8536.49			
	0.16	30	4	2009	1	13	0.0060	0.0388	3.9233	1062.06	8706.60			
	0.06	30	4	2009	2	14	0.0378	0.1059	3.7906	1589.56	8858.37			
	0.10	30	4	2009	3	15	-0.2019	0.2286	3.7568	1563.35	9073.92			
	-0.05	30	4	2009	4	16	0.0739	0.0832	3.7605	1027.87	9299.69			
	-0.08	30	4	2010	1	17	0.2082	0.0041	3.6908	1255.66	9715.05			
	-0.08	30	4	2010	2	18	0.0794	0.0807	3.6561	1754.99	9964.09			
	0.01	30	4	2010	3	19	0.1705	0.0991	3.6654	1030.79	10159.09			
TPIPL TB Equity	-0.09	31	2	2006	1	1	-0.3211	0.0693	4.6123	829.86	55513.05			
	-0.13	31	2	2006	2	2	-0.4557	-0.0429	4.7138	708.77	56029.73			
	-0.90	31	2	2006	3	3	-0.1465	-0.1617	4.3251	858.39	55539.76			
	-0.93	31	2	2006	4	4	0.1317	-0.0042	3.5420	552.87	55088.16			
	-0.97	31	2	2007	1	5	0.1446	-0.1442	3.5504	945.99	54768.08			
	-1.02	31	2	2007	2	6	0.1202	0.0385	3.5097	788.89	54444.27			
	-1.07	31	2	2007	3	7	-0.1280	0.1815	3.8409	819.20	54135.36			

TRUE TB Equity													
-1.18	2.39	32	1	2006	1	1	-0.0696	0.0693	6.0670	4973.79	72703.64	575.36	61229.82
-1.24	3.01	32	1	2006	2	2	-0.2325	-0.0429	6.0623	4078.02	70552.08	1121.97	61256.87
-1.20	4.18	32	1	2006	3	3	0.1980	-0.1617	6.0129	4154.96	74998.32	-6201.04	61106.19
-0.75	2.75	32	1	2006	4	4	-0.5039	-0.0042	6.4337	4454.56	77915.76	1051.97	61021.14
-0.76	2.68	32	1	2007	1	5	-0.0119	-0.1442	6.2673	5504.58	76045.64	679.52	60658.46
-0.78	2.81	32	1	2007	2	6	0.2955	0.0385	6.3349	5160.09	73924.02	782.36	60147.00
-0.81	2.63	32	1	2007	3	7	-0.4456	0.1815	6.2469	4685.32	76293.82	488.17	59716.30
-0.90	2.24	32	1	2007	4	8	-0.2102	0.0232	6.3262	5514.93	74683.16	855.44	59293.23
-1.18	2.08	32	1	2008	1	9	0.0148	-0.1801	6.2238	5659.70	73270.89	782.73	60001.37
-1.19	2.41	32	1	2008	2	10	-0.3246	0.0281	6.2791	4572.79	72185.45	804.93	59620.58
-1.22	2.60	32	1	2008	3	11	-0.0434	-0.2549	6.2560	4707.34	71219.20	278.30	59604.85
-1.24	2.81	32	1	2008	4	12	-0.0353	-0.5193	7.2579	5218.11	71380.08	828.64	59659.55
	2.18	32	1	2009	1	13	-0.3598	0.0388	6.5804	5578.09	70850.84		
	2.34	32	1	2009	2	14	0.4934	0.1059	4.8024	5299.01	69841.36		
	2.36	32	1	2009	3	15	0.1215	0.2286	6.0628	5138.51	69550.52		
	2.30	32	1	2009	4	16	-0.1874	0.0832	6.0392	4950.09	68692.55		
	2.17	32	1	2010	1	17	-0.0166	0.0041	4.8266	5327.79	67440.08		
	2.23	32	1	2010	2	18	-0.0726	0.0807	7.0623	4726.35	66269.59		

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