

CAPITAL STRUCTURE AND FIRM VALUE : A CROSS-COUNTRY ANALYSIS OF INDUSTRIAL COMPANIES

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ABSTRACT

Capital structure and firm value are the variables tested in this study by analyzing cross-country samples from Indonesia, China, and Thailand. This study uses data from the S&P Capital IQ database for 2022, consisting of companies from various industrial sectors. This study uses STATA software for data processing and regression analysis to test the effect between the two variables. The results of the study that have been empirically tested find a positive relationship between capital structure and firm value of companies in all three countries. In China, Indonesia, and Thailand, where corporate governance structures and ownership patterns are different, the impact of debt can vary. In markets with weaker governance, higher leverage can be beneficial to limit managerial opportunism. However, excessive debt can lead to financial distress, increasing the likelihood of value destruction rather than value enhancement. Therefore, companies must balance debt financing to minimize agency costs while maximizing firm value. This study contributes to stakeholders, investors, and policymakers in making strategic financing decisions. Further research is recommended to explore firm-specific and macroeconomic factors that are closely related to capital and firm value in different economic conditions.

Keywords : Capital Structure; Firm Value; Agency Theory

ABSTRAK

Struktur modal dan nilai perusahaan menjadi variabel yang diuji dalam penelitian ini dengan menganalisis sampel lintas negara dari Indonesia, Cina, dan Thailand. Penelitian ini menggunakan data dari database S&P Capital IQ untuk tahun 2022, yang terdiri dari perusahaan-perusahaan dari berbagai sektor industri. Penelitian ini menggunakan perangkat lunak STATA untuk pengolahan data dan analisis regresi untuk menguji pengaruh antara kedua variabel. Hasil penelitian yang telah melalui uji secara empiris menemukan keterkaitan secara positif antara struktur modal dan nilai perusahaan perusahaan di ketiga negara. Di Cina, Indonesia, dan Thailand, di mana struktur tata kelola perusahaan dan pola kepemilikannya berbeda, dampak dari utang dapat bervariasi. Di pasar dengan tata kelola yang lebih lemah, leverage yang lebih tinggi dapat bermanfaat untuk membatasi oportunisme manajerial. Namun, utang yang berlebihan dapat menyebabkan kesulitan keuangan, meningkatkan kemungkinan kerusakan nilai daripada peningkatan nilai. Oleh karena itu, perusahaan harus menyeimbangkan pembiayaan utang untuk meminimalkan biaya keagenan sekaligus memaksimalkan nilai perusahaan. Studi ini memberikan kontribusi bagi para stakeholder, investor, dan pembuat kebijakan dalam membuat keputusan pembiayaan strategis. Penelitian selanjutnya disarankan untuk mengeksplorasi faktor-faktor spesifik perusahaan dan makroekonomi yang terkait erat dengan modal dan nilai perusahaan dalam kondisi ekonomi yang berbeda.

Kata kunci : Struktur Modal; Nilai Perusahaan; Teori Keagenan

INTRODUCTION

Firm value is an important indicator that reflects the performance and future prospects of a company. This value is highly considered by investors and other stakeholders, because it is directly related to investment decisions and corporate strategy. The company's value also reflects a certain state achieved by the company after several years of development and shows public trust in the business. Investors can also utilize company valuation as a foundation for assessing the firm's future growth. A high valuation of the company will boost investor trust in it. Often industrial companies in Indonesia experience fluctuations in their company value due to unstable economic conditions and the less than optimal capital structure that the company sets will affect company performance. While China is known for its rapid industrial growth, but industrial companies in China also face problems such as overleveraging and strict regulations, which can affect financial performance and company value. And if compared also with Thailand which has a growing industrial sector, but on the other hand also faced with issues such as political issues and environmental impacts. This may influence choices related to the company's capital structure and financial outcomes.

The third element influencing firm value is Capital structure. In many cases, the capital structure is typically represented by the Debt to Equity Ratio (DER). The meaning of DER itself is the proportion utilized to compare total debt with equity. Utilizing the DER proxy, the capital structure, encompassing the mix of debt and equity deployed to fund the company's assets, also holds significant importance. Efficient management of capital structure can enhance firm value by reducing the cost of capital. Properly handled debt can enhance shareholder returns. Nonetheless, overusing debt can raise the likelihood of bankruptcy. Consequently, selecting the appropriate capital structure is crucial for promoting the company's growth and stability. As stated by Nurdin, E., & Indah, N. (2023), capital structure refers to the equilibrium or ratio between borrowed funds and ownership equity. Capital structure can likewise be viewed as the proportion of long-term external capital to equity capital. Equity is made up of shares and retained earnings, whereas long-term external capital comprises different kinds of bonds and mortgage liabilities.

LITERATURE REVIEW

Agency Theory

Agency theory describes the clashes of interest that occur between managers and shareholders, stemming from the division of ownership and control within companies, which arise due to the separation of ownership and control in corporations (Jensen & Meckling, 1976). Managers may engage in opportunistic behavior, prioritizing personal benefits over shareholder value. Capital structure plays a crucial role in mitigating these agency conflicts. Debt financing imposes financial discipline on managers, as they are required to meet fixed interest payments, reducing the likelihood of excessive spending or inefficient investment decisions (Bui et al., 2020). This mechanism aligns managerial actions with shareholder interests, ultimately enhancing firm value.

Empirical research suggests that firms with higher leverage often experience improved governance and higher market valuation, particularly in emerging economies. Nguyen and Tran (2021) found that companies in Asia with moderate debt levels exhibit higher Tobin's Q, indicating that external monitoring by creditors reduces agency costs and increases benefits for business. On the other hand, excessive debt may drive to financial distress, offsetting its positive effects. Consequently, achieving an ideal mix of debt and equity financing is essential to reduce agency costs while enhancing company value. Future research should explore how different corporate governance mechanisms interact with capital structure choices across various economic environments.

Capital Structure and Firm Value

In the industrial sector, the regression analysis of capital structure's effect on firm value shows that capital structure significantly and positively influences firm value. This signifies that the degree of a firm's capital structure relates to its value. The Debt to Equity Ratio reflects a company's capacity to settle its debts using its capital or equity. DER additionally demonstrates how the company's own capital contributes to fulfilling its liabilities. A significant DER indicates the elevated risk taken by investors who allocate their resources to the company in question (Anggraini & Siska, 2019). A greater value suggests the firm's financial risk. Working capital is crucial for businesses to carry out their activities and reach their objectives.

Good capital structure decisions can reduce the cost of capital incurred by businesses. One of the advantages of using debt is that the interest lent can be deducted for tax purposes, lowering the effective cost of debt, and the debt holder, who is the holder of the debt, gets a fixed return. Consequently, shareholders do not need to share any of their earnings when the company is performing well.

Previous research shows that capital structure has a positive impact on firm value, supported by regression analysis examining the link between capital structure and firm. In conclusion there is positive impact of capital structure on firm value within the industrial sector, suggesting that an increase in the capital structure of a company correlates with an increase in firm value (Arridho et al., 2022). According to prior studies, it can be concluded that capital structure has a positive but insignificant influence on company value; if debt levels exceed equity, it will affect investors' perceptions of stock prices that reflect the company's identity (Yulianti & Ramadhan, 2022).

Recent studies have reinforced the positive impact of capital structure on firm value, highlighting that an optimal level of leverage enhances market performance and shareholder wealth. Bui et al. (2020) found that firms with well-managed debt structures in emerging markets, such as Vietnam, exhibit higher Tobin's Q, suggesting that leverage contributes to firm valuation by providing access to growth opportunities. Similarly, Chen and Chen (2021) provided evidence from Chinese listed firms, demonstrating that moderate leverage levels positively affect firm value by reducing the cost of capital and increasing investor confidence. Their findings align with the trade-off theory, which suggests that firms balance the benefits of debt financing with bankruptcy costs to maximize firm value.

Empirical evidence from recent cross-country studies also supports this relationship. Nguyen et al. (2022) examined firms across Southeast Asia and found that firms with higher debt ratios tend to experience greater market valuation, particularly in economies with stable financial markets. Their study highlights that access to external financing allows firms to undertake expansion strategies, ultimately leading to improved firm performance. Additionally, Rahman and Saif (2023) analyzed manufacturing firms in Indonesia and Malaysia, confirming that firms with optimal leverage ratios tend to

achieve better financial outcomes, as debt financing enables investments in productive assets that enhance profitability.

These findings suggest that firms should adopt a strategic approach to capital structure decisions to maximize firm value. While debt financing can be beneficial, excessive leverage may increase financial risk, leading to declining investor confidence. Future studies ought to investigate how factors specific to firms, including corporate governance and industry traits, influence the link between capital structure and firm value. Furthermore, as financial markets develop, the importance of debt financing in evaluating firms may shift, requiring ongoing research into the best capital structure for businesses under varying economic circumstances.

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H1 : Capital Structure positively affects on firm value.

RESEARCH METHOD

This research utilizes secondary data sourced from the S&P Capital database in 2022. The object of research is companies operating in Indonesia, China and Thailand. The sample selection criteria are all companies belonging to the type of industry with data available in the S&P Capital database. The total sample that meets all criteria is 200 samples consisting of 18 samples from Indonesia, 169 samples from China and the rest from Thailand. This study applies a statistical analysis approach using multiple linear regression. The process of data processing and analysis is conducted utilizing STATA software version 17 as the analytical tool. This analytical process utilizes various linear regression methods to discern and comprehend the correlation and influence between independent and dependent variables in this research. The dependent variable in the study is firm value. Firm value is an economic concept that describes the value of a company. Company value can be calculated based on how much must be paid to buy assets such as companies. The value of a firm reflects investors' perceptions of the company's effectiveness in executing its operations. Company value is usually shown in the company's stock price (Nurfajri et al., 2022). For the measurement of firm

value, this study uses the formula (Aldi et al., 2020a): $Tobin's Q = (\text{Market value equity} + \text{Total Debt}) / \text{Total Assets}$. The dependent variable of capital structure uses Debt to Equity Ratio which shows how far the company finances its operations with debt compared to its equity, the purpose of this ratio is to measure the ability of a company to pay its debts with existing capital or equity (Wardhani et al., 2021). $DER = \text{Total Debt} / \text{Total Equity}$.

RESULT AND DISCUSSION

Picture 1 indicates the largest sample in this study is China with a percentage of 84% of the total sample. This indicates that China has many companies with this type of industry. Then followed by Thailand and Indonesia 9% and 7% respectively. Thailand and Indonesia have the same percentage with the number of industry types that are not too different.

The dataset consists of 200 observations, ensuring a sufficient sample size for statistical inference. Table 1 indicates the mean value of Tobin's Q is 0.1566, with a standard deviation of 0.1253, indicating moderate dispersion around the mean. The minimum and maximum values of Tobin's Q range from 0.0068 to 0.587, suggesting considerable variation in firm value across the sample. This dispersion reflects differences in market valuation and firm performance within the industrial sector across the selected countries.

Similarly, the descriptive statistics for DER reveal a mean value of 0.3274 with a standard deviation of 0.3583. The minimum and maximum values of DER are 0.01 and 1.81, respectively, demonstrating significant variation in capital structure among firms. A higher standard deviation relative to the mean suggests that firms exhibit heterogeneous financing strategies, possibly influenced by country-specific financial regulations, industry dynamics, or firm-level risk preferences. These variations highlight the importance of examining the relationship between capital structure and firm value in a cross-country context.

The relatively low average Tobin's Q suggests that industrial firms in the sample may face limitations in generating market-based value relative to their assets. In contrast, the distribution of DER indicates that some firms rely more heavily on debt financing than others. This variability underscores the necessity of further empirical analysis to determine the extent to which capital structure decisions influence firm value, taking

into account economic conditions, governance mechanisms, and financial market characteristics across different countries.

Table 2 indicate that the average Tobin's Q is highest among companies in Thailand (0.2207), compared to Indonesia (0.1590) and China (0.1562). The standard deviation is also highest in Thailand, suggesting greater variation in firm value among Thai companies. Meanwhile, firms in China exhibit a more concentrated distribution, with the lowest minimum value (0.0046) and the highest maximum value (0.5870). This suggests the presence of firms with both very low and very high firm value within the Chinese sample.

Regarding DER (Debt to Equity Ratio), the highest mean is observed in Thailand (0.4991), indicating that firms in this country tend to rely more on debt financing compared to Indonesia (0.2943) and China (0.3272). However, Thailand also has the highest standard deviation (0.5987), reflecting a wider variation in leverage levels. On the other hand, Chinese firms have the lowest minimum DER value (0.0060), suggesting the existence of companies with almost no debt. The tests carried out have gone through classical assumption tests, namely the normality test, multicollinearity test, heteroscedasticity test, and autocorrelation test. This study uses control variables : Probability, Liquidity, Leverage and Capital Expenditure.

The results of the F-test presented in Table 3 indicate that the overall regression model is statistically significant. The F-statistic value of 77.44, with a p-value of 0.0000, suggests that the independent variables jointly have a significant impact on the dependent variable. Since the p-value is well below the conventional significance levels of 0.05 or 0.01, we dismiss the null hypothesis, which asserts that all independent variables do not simultaneously influence the dependent variable. This suggests that the capital structure factors present in the model together account for differences in firm value.

Furthermore, the R-squared value of 0.7385 indicates that approximately 73.85% of the variation in firm value (Tobin's Q) can be explained by the independent variables included in the model. The adjusted R-squared, which accounts for the number of predictors in the model, is 0.7289, further confirming the model's explanatory power. A high R-squared value suggests that the regression model provides a good fit for the data, reinforcing the validity of the relationship between capital structure and firm value.

However, while the model exhibits strong explanatory capability, further robustness checks and additional variables may be considered to enhance its predictive accuracy.

The results of the t-test indicate the individual effects of each independent variable on Tobin's Q, which represents firm value. The Debt to Equity Ratio (DER) exhibits a positive and significant effect on Tobin's Q, with a coefficient of 0.3590 and a p-value of 0.000. This finding suggests that a higher level of financial leverage is associated with an increase in firm value. Conversely, the Current Ratio (CR) and Leverage Ratio (LEV) have negative and significant effects on Tobin's Q, with coefficients of -0.0099 and -0.0015, respectively, both at a significance level of 1%. These results imply that firms with higher liquidity and leverage levels tend to have lower market valuations.

On the other hand, Return on Assets (ROA) and Capital Expenditure (CAPEX) do not exhibit a significant impact on Tobin's Q, as indicated by their p-values of 0.162 and 0.569, respectively. The non-significant effect of ROA suggests that profitability alone does not necessarily translate into higher firm value within the observed sample. Similarly, the lack of significance in CAPEX implies that capital investments do not have an immediate or direct impact on market valuation. Overall, these findings highlight the crucial role of capital structure decisions in influencing firm value, particularly through the Debt to Equity Ratio, while liquidity and leverage should be carefully managed to prevent negative market

Furthermore, this study analyzed the results across countries by performing regression tests on their respective samples. The regression analysis of Tobin's Q against DER for each country reveals significant differences in the impact of capital structure on firm value. In Indonesia, the coefficient of DER is the highest, indicating that an increase in financial leverage leads to a greater positive change in firm value compared to the other two countries. This suggests that Indonesian industrial firms may rely more on debt financing to enhance their market valuation, possibly due to limited equity financing options or favorable debt conditions. In China, while the relationship between DER and Tobin's Q remains significant and positive, the coefficient is slightly lower than in Indonesia. This indicates that although leverage contributes to firm value, Chinese firms might have a more balanced capital structure, possibly due to a more developed financial market that provides alternative sources of funding.

In contrast, Thailand exhibits the lowest DER coefficient among the three countries, despite maintaining a significant relationship with Tobin's Q. This suggests that while leverage still influences firm value, the effect is relatively weaker compared to Indonesia and China. The high R-squared value in Thailand indicates that variations in Tobin's Q are better explained by DER and other factors in the model, implying that firms in this market may follow a more conservative financing approach. Overall, the findings suggest that the impact of capital structure on firm value is country-specific, influenced by financial market maturity, regulatory environments, and firm-level financing preferences.

CONCLUSION

This study concludes that capital structure has a positive and significant impact on firm value, as measured by Tobin's Q. The findings indicate that an increase in the Debt to Equity Ratio (DER) enhances firm value across all three countries in the sample—Indonesia, China, and Thailand. This suggests that firms with a well-managed debt structure can leverage external financing to boost their market valuation. In addition, productivity features a noteworthy positive impact on company esteem. Beneficial companies illustrates the capacity to oversee assets productively. Reliable benefits increment speculators certainty, empower them to contribute, and eventually increment the company's showcase esteem (Hakim *et al*, 2025). However, the degree of influence varies among the countries, highlighting the role of country-specific factors such as financial market conditions, regulatory frameworks, and investor perceptions.

Among the three countries, Indonesia exhibits the highest positive impact of DER on firm value, implying that Indonesian firms benefit more from debt financing compared to their counterparts in China and Thailand. In China, while the relationship remains positive and significant, the effect is slightly lower, suggesting a more balanced approach to capital structure management. Meanwhile, Thailand shows the weakest positive impact of DER on Tobin's Q, despite a high explanatory power of the model. This indicates that while leverage is important, other factors may also play a significant role in determining firm value in Thailand.

Based on these findings, firms in emerging markets should consider adopting optimal capital structure strategies to maximize firm value. Policymakers should also implement regulatory measures that facilitate efficient debt financing mechanisms,

ensuring that firms can utilize leverage effectively without exposing themselves to excessive financial risk. Additionally, investors should assess capital structure policies when making investment decisions, as financial leverage appears to play a critical role in shaping firm valuation.

Also, the results of this study, which demonstrate a positive effect of capital structure on firm value, align with the agency cost hypothesis that suggests moderate levels of debt help reduce agency costs by enforcing financial discipline. In China, Indonesia, and Thailand, where corporate governance structures and ownership patterns differ, the impact of debt may vary. In markets with weaker governance, higher leverage can be beneficial in curbing managerial opportunism. However, excessive debt could lead to financial distress, increasing the likelihood of value destruction rather than enhancement. Therefore, firms must balance debt financing to minimize agency costs while maximizing firm value.

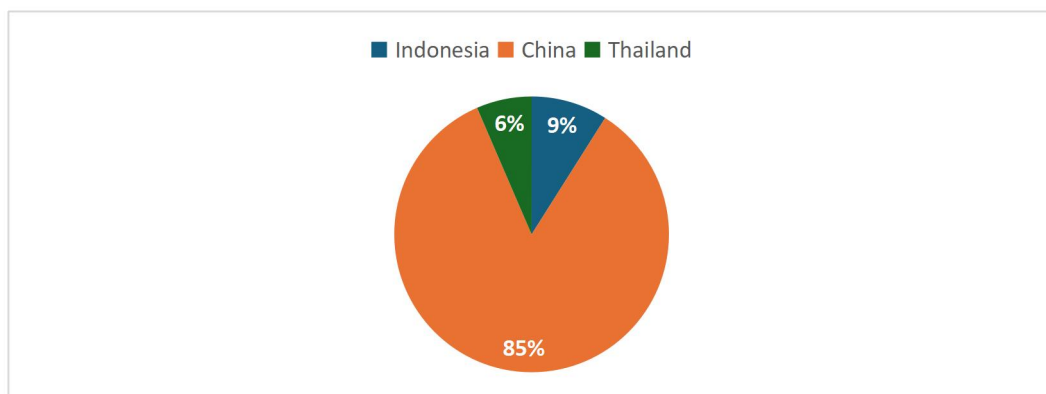
For future research, it is recommended to expand the sample size to include additional countries with different economic and financial environments to enhance the generalizability of the findings. Moreover, incorporating additional variables, such as macroeconomic indicators and corporate governance factors, could provide deeper insights into how external and internal dynamics influence the relationship between capital structure and firm value. Employing alternative methodologies, such as panel data regression or longitudinal analysis, may also help capture the long-term effects of capital structure decisions on firm performance.

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TABLE AND FIGURE



Picture 1: Chart of Sample

Table 1. Descriptive Statistics

Variable	Sample	Mean	Std. Dev	Min	Max
TOBIN'S Q	200	0,156648	0,1252799	0,0068	0,587
DER	200	0,32735	0,3582824	0,01	1,81

Table 2 Descriptive Statistics of 3 countries

Variable	Country	Sample	Mean	Std. Dev	Min	Max
TOBIN'S Q	China	169	0.1562	0.1231	0.0046	0.5870
	Indonesia	18	0.1590	0.1301	0.0186	0.4036
	Thailand	13	0.2207	0.1879	0.0078	0.5573
DER	China	169	0.3272	0.3327	0.0060	1.6510

Indonesia	18	0.2943	0.3130	0.0200	1.1860
Thailand	13	0.4991	0.5987	0.0100	1.8070

Table 3 F Test

Number of obs	200
F(7, 192)	77.44
Prob > F	0.0000
R-Squared	0.7385
Adj R-squared	0.7289
Rood MSE	0.21945

Table 4 T test

TOBINS	Coefficient	Std.Err.	P> t
DER	0.3590404	0.0138108	0.000
ROA	-0.002365	0.0016836	0.162
CR	-0.0098998	0.0026569	0.000
LEV	-0.0014761	0.000392	0.000
CAPEX	-2.52	4.42	0.569

Table 5 Test of 3 countries

	Indonesia	China	Thailand
R-squared	0.893	0.918	0.932
Adj. R-squared	0.886	0.918	0.926
Coef (DER)	0.3926	0.3545	0.3029
P-value (DER)	0.000	0.000	0.000
F-statistic	133.3	1872.0	151.0
Prob > F	3.60	1.18	9.12