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The determinants of capital structure: evidence from selected Indonesian companies that have undergone debt restructuring

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Abstract

The capital structure is one of the reflections of companies that undergo debt restructuring. This study aims to analyze the determination for companies undergoing debt restructuring in Indonesia. The independent variables used in this research are profitability, growth opportunities, collateral, liquidity, and earnings volatility, while the dependent variable is the capital structure. This research used data obtained from 30 selected debt restructuring events in Indonesian companies during the period of 2003-2022. The research was statistically analyzed using the multiple linear regression analysis methods, and the data collected from Refinitiv database. In obtaining the analysis results, the author used IBM SPSS Statistics version 25 to process the data. The findings of this research indicate that profitability, liquidity, and earnings volatility variables have a significant impact on the amount of debt. The results differ for growth opportunities and collaterals, which show no significant influence on the decision to debt restructuring. These findings support the pecking order theory, where companies that restructure debt tend to use internal fund and debt to finance operations rather than using equity. The findings of this research will also help in understanding the determinants of debt restructuring decisions.

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Introduction

According to data from (Bloomberg, 2023), total corporate debt in Indonesia will reach Rp2,709 trillion by the end of 2022. Of this amount, around Rp1,159 trillion or 42.4% is the debt of companies at risk of financial distress. To overcome this problem of financial distress, the company restructures its debt. Based on data from the Financial Services Authority (OJK), in 2021 there were 1,870 companies that carried out debt restructuring. This number increased in 2022 to reach 2,194 companies. As of August 31, 2023, there were also 227 companies that restructured debt in Indonesia. From this data it can be seen that a capital structure that is funded more by debt can raise the risk of company bankruptcy. This is because companies with a capital structure that is funded more by debt have a greater interest burden. If the company is unable to pay the interest and principal charges on its loans, the company may experience financial distress. Debt restructuring can be done to cut short the risk of financial distress or bankruptcy, if the company's problems become more serious. Debt restructuring can be done in various ways, such as extending the tenor, reducing interest rates, or adding credit facilities (Gusti, Fanya and Munandar, 2022).

Debt restructuring is a long-established practice for managing debt problems. In emerging market economies such as Indonesia, this is a common phenomenon due to the development and uncertainty of the Indonesian market movements. Debt restructuring is often carried out by companies to overcome financial problems. While debt restructuring serves as an indicator of a company's financial distress, it also presents a crucial avenue for alleviating these burdens, thereby preserving the possibility of recovery and effectively averting the path towards liquidation or bankruptcy.(Jiang, Liu and Yang, 2019). Although debt restructuring serves as an indication of a company's financial struggles, it simultaneously stands as a primary means of alleviating these financial burdens, thereby preserving the prospect of recovery and effectively steering clear of the path towards liquidation or bankruptcy. If a company does not restructure its debt, the company may experience a decline in financial performance and even go bankrupt.

Capital structure is one of the main factors that also has a significant impact on the company's financial performance. Capital structure encompasses the ideal balance between long-term debt and equity financing, representing a critical corporate strategy that involves establishing the optimal debt-to-equity ratio (Vo, 2017). Increasing funding sources through debt is one way to increase assets in addition to funding through equity. In general, debt restructuring can have a positive impact on the company's capital structure. Debt restructuring can increase the company's equity ratio, so that the company's risk of experiencing financial distress or bankruptcy can be reduced. In addition, debt restructuring can also increase the liquidity of the company, so that the company can more easily meet short-term debt obligations. The extent of this impact is further shaped by various factors that contribute to defining the composition of a company's capital structure.

In theoretical framework, there are two opposing theories regarding capital structure financing choices, namely trade-off theory and pecking order theory. In trade-off theory, there is a debt target that limits the company in funding through external sources of funds and the benefits obtained such as a decrease in tax costs and the cost of capital with certain trade-off measures for example tax rate, liquidity, management quality (Simatupang, Purwanti and Mardiati, 2019). If the company uses external funding, it prioritizes the issuance of debt over equity (Yulianto, Aji Suseno and Widiyanto, 2016). According to trade-off theory, the company will have a safer profitability if funded through debt, because the company has enough funds to fulfill its obligations against the costs arising from funding activities through external sources of funds. Based on the trade-off theory, the company will choose the optimal capital structure by balancing the benefits and costs of using debt. The higher the benefits of using debt, the more debt-funded the capital structure will be. Conversely, the higher the cost of using debt, the less

debt-funded the capital structure will be.

Pecking order theory, on the other hand, supports the assumption that the company will have high profitability if the company finances its activities with internal funds which tends to reduce the level of debt ratio (Jahanzeb et al., 2013). In the pecking order theory, companies are described as using internal funding first, which comes from the company's retained earnings, then using debt and finally using shares. Based on this priority order, the company will choose the funding source that best suits its needs. If the company has sufficient internal funds, then the company does not need to seek external funding.

During the period 2003-2022, according to data from (Suhartono, 2023), there were approximately 2,000 companies in Indonesia that restructured their debt during this period. The purpose of this study is to analyze the determinants of companies that conduct debt restructuring. Capital structure is described as a reflection of companies that restructure debt. The debt ratio in this study is measured by the total debt to total asset ratio. Meanwhile the variables that influence debt restructuring decisions are profitability ratio, growth opportunities ratio, collaterals ratio, liquidity ratio, and earning volatility ratio. Profitability ratios are financial indicators that assess a company's efficiency in converting sales, assets, and equity into profits. Profitability ratio can be measured by the ratio of earnings before interest and taxes (EBIT) to total assets. Growth opportunity ratio is a financial metric that measures a company's ability to generate future growth calculated by dividing the ratio of change in total assets between time t and t-1 by its total assets at time t-1. Collaterals ratio is a ratio that measures the value of collateral available to fulfill obligations. This ratio can be used to assess the risk of creditors in providing loans or credit to debtors. The collateral ratio is calculated by dividing the ratio of tangible assets by total assets. Liquidity ratio is a ratio that measures the company's ability to meet its short-term obligations. Liquidity can be measured by dividing the ratio of current assets by current liabilities. Earning volatility ratio is a financial metric that measures the variability of a company's net income over time. This ratio is the average of the standard deviation (over the past 5 years including the current year) of earning before interest and taxes (EBIT) over total assets. Some of these ratios can provide an overview of what are the determinants of the capital structure of a company that is restructuring debt

RESEARCH METHODS

This research employs a quantitative method focused on analyzing the determinants of capital structure, chosen for its suitability with numerical data. Secondary data is utilized, comprising 30 debt restructuring events from selected companies in Indonesia during the period 2003-2022. The data collection technique in this research is a documentation technique, where data and information are obtained through financial data from Refinitiv databases. For data analysis, the research utilizes the multiple linear regression method, measuring the correlation of several independent variables with the dependent variable. To obtain the results of the regression analysis calculation, the data is processed using IBM SPSS Statistics version 25. The variables influencing the decision for debt restructuring include profitability, growth opportunities, collaterals, liquidity, and earning volatility. Meanwhile, the indicator of debt restructuring is the total debt to total assets ratio.

In order to find out more about the measurement of variables, the following table shows the indicators measured as follows:

Table 1. Variable measurements

Variable	Symbols	Measurements
Dependent variable		
Capital structure measures		
Debt to assets ratio	DTAR	The ratio of total debt to total assets
Independent variables		
Profitability	PROFIT	The ratio of EBIT to total assets
Growth opportunities	GRWT	The ratio obtained by dividing the change in total assets from time *t* to *t-1* by total assets at time *t-1*
Collaterals	COLLA	The proportion of tangible assets in relation to total assets
Liquidity	LIQUID	The ratio between current assets in relation to total assets
Earning volatility	EARNVOL	The standard deviation of EBIT to total assets at time *t-5*

To determine how significant the factors affecting the capital structure, these are following formula is used as the basis for calculation :

$$Y = \propto_0 + \beta_1 X_{PROFIT} + \beta_2 X_{GRWT} + \beta_3 X_{COLLA} + \beta_4 X_{LIQUID} + \beta_5 X_{EARNVOL} + \varepsilon$$

The symbol "Y" in this formula serves as an indicator of the company's debt restructuring decision, represented by the total debt to total assets ratio and influenced by the independent variables: profitability, growth opportunities, collaterals, liquidity, and earning volatility, denoted as "X." Meanwhile, the symbol "α" in this formula represents the intercept or constant coefficient, signifying the value of the dependent variable (Y) when the independent variables (X) are zero. The symbol "β" represents the regression coefficient, illustrating the influence of the independent variables (X) on the dependent variable (Y).

RESULT

The statistical output results reveal that profitability has a significance value of 0.009, indicating a significance level of less than 1%. This finding suggests that profitability significantly influences the company's decision-making regarding debt restructuring. Furthermore, the beta value for profitability is -0.623, signifying a negative correlation between the two variables. A decrease in the company's profitability is associated with an increased likelihood of opting for debt restructuring.

In contrast, liquidity was found to have a significance value of 0.027, providing evidence of its significant effect on the company's decision to undergo debt restructuring with a significance level below 5%. The negative beta coefficient underscores a negative relationship between liquidity and the propensity of companies to engage in debt restructuring. In simpler terms, a lower liquidity value corresponds to a higher likelihood of companies pursuing debt restructuring.

Table 2. Result

Variable	Beta (coefficients)	*t*-value	Significant
Constant	0.513	5.368	0.000016***
Profitability	0.623	-2.857	0.009***
Growth Opportunities	-0.003	-0.124	0.903
Collaterals	-0.209	-1.560	0,132
Liquidity	-0.085	-2.355	0.027**
Earning Volatility	2.715	4.854	0.00006***

Total	: 0.658
R	: 0.847
R^2	: 0.717
R^2 adj	: 0.658
F	: 12.179
Sign F	: 0.000006

*** significant at 0,01 level,** significant at 0,05 level

In the statistical output data, earning volatility is found to have a significance value of 0.00006, indicating a significance level below 1%. This supports the notion that earning volatility is a significant determinant of the company's decision-making regarding debt restructuring. The beta value in the statistical output is 0.513, and its positive nature suggests that an increase in earning volatility will motivate companies to engage in debt restructuring, aiming to enhance the composition of the capital structure.

On the other hand, both growth opportunities and collaterals each have a significance value of 0.903 and 0.132, respectively. These values exceed a significance level of 10%, signifying that these variables do not exert a significant influence on the company's decision to undergo debt restructuring.

The R^2 adj, which measures how well independent variables explain the dependent variable, is 0.658 or 65.8% in the statistical output results. This value indicates the ability of profitability, growth opportunities, collaterals, liquidity, and earning volatility variables to explain the company's debt restructuring decision by 65.8%. Meanwhile, 34.2% of the variables influencing debt restructuring decisions are explained by other factors outside the model.

DISCUSSION

The company's financial performance serves as concrete evidence of management's efforts to generate value for all stakeholders. The crucial role of a company's financial standing in shaping perceptions among investors can influence external parties to provide credit facilities, thereby impacting the overall capital structure. To achieve an optimal capital structure, companies must decide on the right funding strategy (Goyal, 2013). From an investor's standpoint, the company's financial performance is a benchmark for assessing its financial condition (Endiana and Suryandari, 2021). Research by Dawar (2014) has revealed that excessive debt usage negatively impacts a company's financial performance, making a capital structure overly reliant on debt more susceptible to bankruptcy (Rahman, Saima and Jahan, 2020). Internally, an excessively large amount of debt has the potential to reduce the net income received by the company. The increasing debt aligns with the rise in interest expenses, especially if the assigned interest is floating, causing fluctuations over time. Companies can mitigate debt liabilities by undertaking debt restructuring, aiming to minimize debt by increasing equity. One practical method involves converting bonds into equity, where a high conversion ratio efficiently addresses the company's debt liabilities (Triki and Abid, 2023), thereby enhancing the debt-to-equity composition.

Companies undergoing debt restructuring typically experience a subsequent decrease in their total debt-to-total assets in the year following these events. The reduction in debt aligns with a decrease in the ratio of total debt to total assets, indicating a reliance on equity for financing assets to reduce debt liabilities. Opting for equity over debt in the capital structure is considered more stable,

eliminating the interest expense, and a higher proportion of equity can increase share value from the perspective of investors.

In this study, it was found that profitability has a significant effect on the capital structure, as measured by the total debt-to-total assets ratio, influencing the company's decision-making on debt restructuring. This result is supported by previous research conducted by Chen, Jiang and Lin (2014) and Agmas (2020). Companies with substantial proportions of debt may trigger costs that interfere with profitability performance. This finding aligns with the pecking order theory, stating that companies with lower profitability face difficulties obtaining internal funding sources, influencing them to rely more on external funding sources, thus impacting the company's decision-making regarding capital structure improvement through debt restructuring.

Liquidity was found to have a significant effect on the decision to undergo debt restructuring, a finding supported by research conducted by (Haron, 2016) and (Chakrabarti and Chakrabarti, 2019). Excessive debt liabilities can disrupt the company's focus on maintaining cash flow, as the company prioritizes paying interest and principal repayments. This result aligns with the trade-off theory,

stating that companies with a large proportion of debt often experience cash shortages, leading to difficulties in meeting short-term liabilities. Therefore, debt restructuring becomes a viable strategy for companies to reduce their debt burden and restore liquidity.

Based on the study results, it has been discovered that earning volatility is a variable significantly affecting the company's decision-making on debt restructuring. The volatility of net income indicates the company's difficulty in paying off its debt. Increasing earning volatility sends signals to investors about the company's uncertainty regarding its ability to distribute dividends (Soukotta et al., 2023). Previous empirical research by (Campbell and Rogers, 2018) demonstrates that companies with fluctuating capital structures produce smaller net income, and the large earning volatility coefficient aligns with substantial debt liabilities. Consequently, decreasing debt liabilities contribute to stabilizing earning volatility. This finding is supported by the research of Saif-Alyousfi et al. (2020), which asserts that earning volatility significantly affects capital structure.

Meanwhile, the study results also reveal that collaterals do not determine debt restructuring decisions made by companies. This is because collaterals, measured using tangible assets, are illiquid and challenging to liquidate into cash when the company in debt must immediately settle its liabilities. Tangible assets involve significant time and cost in the liquidation process, and their market price fluctuates in line with economic conditions, making their value difficult to predict precisely. Therefore, collaterals are not an effective solution for financing company liabilities and ensuring the success of debt restructuring events. This finding is supported by research by Kyissima et al. (2020), stating that the tangibility of assets has no significant effect on capital structure.

The findings indicate that growth opportunities do not have a significant effect on company decision-making regarding debt restructuring, a result supported by previous research conducted by Chakrabarti and Chakrabarti (2019). Companies in debt, opting for debt restructuring, tend to prioritize managing urgent short-term liabilities, potentially overlooking long-term growth opportunities. The decisions made by the company focus more on overcoming immediate financial situations rather than implementing long-term growth, which typically takes considerable time to yield significant results.

Previous studies employed a similar research model but focused more on variables affecting the capital structure. In this study, capital structure serves as an indicator of debt restructuring decisions for companies facing debt problems. The research findings delve more deeply into the factors influencing the company's decision-making regarding debt restructuring.

CONCLUSION

This study sought to identify the variables influencing the decision-making process of Indonesian companies regarding debt restructuring from 2003 to 2022. The empirical data revealed that profitability, liquidity, and earning volatility significantly impact companies' choices in debt restructuring. Conversely, collaterals and growth opportunities were found to lack a substantial influence in motivating companies to pursue debt restructuring. This research contributes to a better understanding of the factors shaping decisions on debt restructuring. Theoretical implications suggest that companies are more likely to consider debt restructuring in situations of unfavorable profitability, reduced liquidity, and heightened earning volatility.

Practically, this study implies that companies engaging in debt restructuring demonstrate proficiency in managing influential variables to minimize the likelihood of such decisions. Future research examining debt restructuring decisions could enrich the model's explanatory capacity by incorporating variables affecting capital structure. Potential additions in subsequent studies may include cash flow volatility, corporate tax, non-debt tax shield, and firm size. Additionally, it is acknowledged that this study has limitations in data analysis techniques, and future researchers may enhance accuracy by employing methodologies such as quadratic nonlinear regression models.

REFERENCE

Bloomberg (2023) *Next Big Debt Wreck Seen Brewing in Indonesia Builder Binge*. Available at: https://www.bloomberg.com/news/articles/2023-02-11/world-s- next-debt-wreck-seen-brewing-in-indonesia-builder-binge (Accessed: 13 November 2023).

Campbell, G. and Rogers, M. (2018) 'Capital structure volatility in Europe', *International Review of Financial Analysis*, 55, pp. 128–139. Available at: https://doi.org/10.1016/j.irfa.2017.11.008.

Chakrabarti, Anindita and Chakrabarti, Ahindra (2019) 'The capital structure puzzle – evidence from Indian energy sector', *International Journal of Energy Sector Management*, 13(1), pp. 2–23. Available at: https://doi.org/10.1108/IJESM- 03-2018-0001.

Chen, J., Jiang, C. and Lin, Y. (2014) 'What determine firms' capital structure in China?', *Managerial Finance*, 40(10), pp. 1024–1039. Available at: https://doi.org/10.1108/MF-06-2013-0163.

Dawar, V. (2014) 'Agency theory, capital structure and firm performance: some Indian evidence', *Managerial Finance*, 40(12), pp. 1190–1206. Available at: https://doi.org/10.1108/MF-10-2013-0275.

Endiana, I.D.M. and Suryandari, N.N.A. (2021) 'Perspektif akuntansi manajemen lingkungan dan pengungkapannya pada nilai perusahaan', *Jurnal Akuntansi dan Auditing,* 17(1), pp. 80–89. Available at: https://doi.org/10.14710/jaa.17.1.80-89.

Fekadu Agmas, W. (2020) 'Impacts of capital structure: profitability of construction companies in Ethiopia', *Journal of Financial Management of Property and Construction*, 25(3), pp. 371–386. Available at: https://doi.org/10.1108/JFMPC- 08-2019-0072.

Goyal, A.M. (2013) 'Impact of capital structure on performance of listed public sector banks in India', *International Journal of Business and Management Invention*, 2(10), pp. 35–43.

Gusti, I., Fanya, A. and Munandar, A. (2022) 'Tinjauan yuridis restrukturisasi hutang dalam perjanjian kredit pada masa pandemi covid-19', Studi Di SMS

Finance Cabang Mataram, Available at: http://journal.unram.ac.id/index.php/privatelaw/index.

Haron, R. (2016) 'Do Indonesian firms practice target capital structure? A dynamic approach', *Journal of Asia Business Studies*, 10(3), pp. 318–334. Available at: https://doi.org/10.1108/JABS-07-2015-0100.

Jahanzeb, A. *et al.* (2013) *Trade-Off Theory, Pecking Order Theory and Market Timing Theory: A Comprehensive Review of Capital Structure Theories*, *International Journal of Management and Commerce Innovations (IJMCI)*. Available at: www.researchpublish.com.

Jiang, J., Liu, B. and Yang, J. (2019) 'The impact of debt restructuring on firm investment: evidence from China', *Economic Modelling Journal*, 81, pp. 325– 337.

Kyissima, K.H. *et al.* (2020) 'Analysis of capital structure stability of listed firms in China', *China Finance Review International*, 10(2), pp. 213–228. Available at: https://doi.org/10.1108/CFRI-05-2018-0044.

RAHMAN, Md.M., SAIMA, F.N. and JAHAN, K. (2020) 'The Impact of Financial Leverage on Firm's Profitability: An Empirical Evidence from Listed Textile Firms of Bangladesh', *Journal of Business Economics and Environmental Studies*, 10(2), pp. 23–31. Available at: https://doi.org/10.13106/jbees.2020.vol10.no2.23.

Saif-Alyousfi, A.Y.H. *et al.* (2020) 'Determinants of capital structure: evidence from Malaysian firms', *Asia-Pacific Journal of Business Administration*, 12(3–4), pp. 283–326. Available at: https://doi.org/10.1108/APJBA-09-2019-0202.

Simatupang, H.J., Purwanti, L. and Mardiati, E. (2019) 'Determinants of capital structures based on the Pecking Order Theory and Trade-off Theory', *Jurnal Keuangan dan Perbankan*,23(1). Available at: https://doi.org/10.26905/jkdp.v23i1.2579.

Soukotta, A. *et al.* (2023) 'Corporate Actions, Earning Volatility, And Exchange Rate Influence On Stock Price Stability', 2(2).

Suhartono, H. (2023) *Indonesian debt troubles underscored as state firm seeks help*. Available at: https://www.bloomberg.com/news/articles/2023-05- 17/restructurings-are-spreading-in-indonesia-s-construction-sector#xj4y7vzkg (Accessed: 13 November 2023).

Triki, O. and Abid, F. (2023) 'Firms' financial structure with contingent convertible debt, risky debt and multiple growth options', *China Finance Review International*, 13(2), pp. 230–262. Available at: https://doi.org/10.1108/CFRI-06- 2022-0104. Vo, X.V. (2017) 'Determinants of capital structure in emerging markets: evidence from Vietnam', *Research in International Business and Finance*, 40, pp. 105–113. Available at: https://doi.org/https://doi.org/10.1016/j.ribaf.2016.12.001.

Yulianto, A., Aji Suseno, D. and Widiyanto, W. (2016) *Testing pecking order theory and trade off theory models in public companies in Indonesia*. Available at: https://www.researchgate.net/publication/319304641.