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Capital Structure Determinants in the Mining Sector: The Influence of Profitablility, Likuidity and Asset Structure

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A B S T R A C T

This quantitative research focuses on the impact of asset structure, liquidity, and profitability on the capital structure of mining companies listed on the Indonesia Stock Exchange between 2019 and 2023. Utilizing multiple linear regression to analyze 125 observations, the study provides empirical evidence that profitability, liquidity, and asset structure exert a significant negative influence on capital structure. This correlation aligns with the pecking order theory, which suggests that the availability of internal financial resources diminishes the necessity for external borrowing. These results are particularly relevant for the mining industry, a sector defined by substantial asset values and high financial risks, where firms prioritize internal funding to maintain financial stability and reduce debt dependency.

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INTRODUCTION

Capital is a key element required by companies to conduct operations and ensure business sustainability. Adequate capital enables companies to support production activities, make investments, and expand their businesses sustainably. Capital structure management is a critical aspect of corporate financial decision-making, as it reflects the proportion of funding obtained from internal and external sources (Nuridah et al., 2023). Maintaining a strategic equilibrium between debt and equity is pivotal, as it directly shapes a firm's risk profile and total financial outcome. Consequently, achieving an ideal capital arrangement is vital to curtail financing expenses, boost the company's market worth, and guarantee long-term operational resilience and competitive advantage

This study focuses on the mining sector because it plays a strategic and highly competitive role in the Indonesian economy. However, the sector also faces substantial risks due to commodity price fluctuations and exploration uncertainties. These conditions are reflected in the mining sector's export performance, which declined in 2019, 2020, and 2023. Such financial conditions affect profitability and liquidity and, consequently, influence capital structure decisions.

Profitability is a measure used to assess the amount of profit generated by a company over a specific period. A high profitability ratio reflects a company's ability to generate earnings, thereby enabling it to increase retained earnings as a source of internal financing. This condition can reduce the company's reliance on external financing, particularly debt, which ultimately influences its capital structure decisions (Ekinanda et al., 2021).

Liquidity refers to a company's ability to meet its short-term obligations using its current assets. High liquidity indicates that a company has sufficient funds to finance its operations and fulfill short-term liabilities. Consequently, companies tend to rely more on internal funds rather than external financing, particularly debt. This condition can influence a company's capital structure policies (Wulandari & Artini, 2019).

Asset structure refers to the proportion of fixed assets to total assets owned by a company, reflecting the composition of its assets and how the company allocates its funds among various asset categories. Companies with a high proportion of fixed assets generally possess greater collateral value, making it easier for them to obtain external financing in the form of debt. This condition can ultimately influence a company's capital structure decisions (Novwedayaningayu & Hirawati, 2020).

The studies conducted by Khotimah (2023) and Wulandari and Artini (2019) place greater emphasis on liquidity factors and other financial variables without specifically examining the characteristics of high-risk sectors such as mining. Meanwhile, the studies by Gabriela and Jonnardi (2024) and Laily et al. (2022) report inconsistent findings regarding the effects of profitability, liquidity, and asset structure on capital structure.

Distinct from earlier literature, this inquiry specifically targets the mining industry, a sector marked by heavy fixed-asset reliance and substantial volatility. Furthermore, by extending the observation window to the 2019–2023 period, this research seeks to evaluate how profitability, liquidity, and asset structure collectively and individually influence the capital configurations of mining firms on the Indonesia Stock Exchange

LITERATURE REVIEW

The Impact of Profitability on Capital Structure

Profitability represents a firm's capacity to generate earnings within a designated timeframe. These ratios serve as a benchmark to evaluate management's efficiency in overseeing overall corporate operations. In this research, profitability is quantified through Return on Equity (ROE), calculated by comparing net income against total equity. ROE effectively illustrates how efficiently a company generates returns for its shareholders. A robust ROE suggests that the management is successfully optimizing investments and controlling costs, which ultimately signals superior financial health and operational performance (Poetri et al., 2024).

H1: Profitability influences capital structure.

The Impact of Liquidity on Capital Structure

Liquidity serves as a measure of a firm’s proficiency in fulfilling its immediate financial commitments as they fall due (Khotimah, 2023). In this research, liquidity is evaluated through the current ratio, which compares existing assets against short-term liabilities. Firms maintaining a substantial cushion of current assets typically possess the necessary cash flow to sustain operations and fund investments. This internal financial strength enhances a company's flexibility, thereby decreasing its dependency on external borrowing. Furthermore, a robust liquidity position signifies a reliable capacity to settle obligations, which directly informs strategic management decisions concerning the optimal debt-to-equity mix (Wulandari & Artini, 2019).

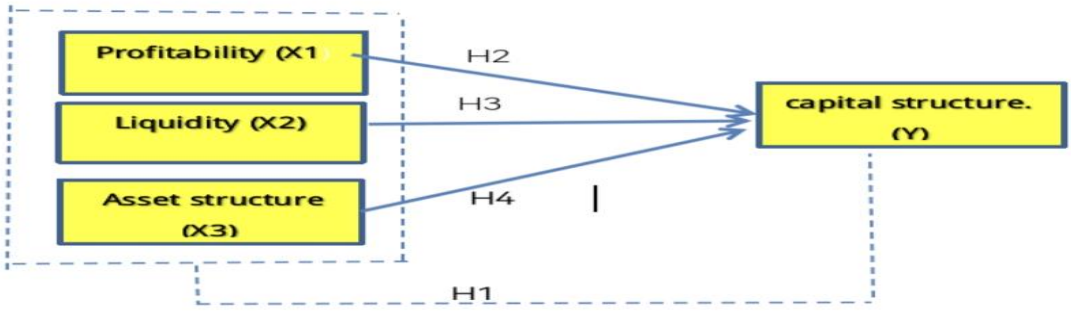
H2: Liquidity influences the capital structure.

The Impact of Asset Structure on Capital Structure

Asset structure represents the distribution of a firm's resources, specifically focusing on the ratio of fixed assets to its total asset base. This metric illustrates how a company allocates capital to sustain its core operational functions (Solihatun et al., 2023). In this research, asset structure is quantified using the fixed asset ratio, derived by dividing long-term physical assets by the total assets owned. This ratio serves as a critical indicator of a company’s capacity to secure debt financing. A larger proportion of fixed assets signifies a higher volume of tangible wealth that can be pledged as collateral, thereby facilitating easier access to external credit

H3: Asset structure a significant effect on s capital structure.

The research design is as follows:



METHODOLOGY

This quantitative inquiry evaluates the influence of profitability, liquidity, and asset structure on corporate capital configurations. The research population encompasses all mining enterprises registered on the Indonesia Stock Exchange (IDX) throughout the 2019–2023 period. To ensure data relevance, the sample was selected using a purposive sampling technique based on specific predefined criteria. Consequently, 25 companies were identified, yielding a robust dataset of 125 total observations for analysis.

This research utilizes secondary data sourced from the audited financial statements of mining firms listed on the Indonesia Stock Exchange, accessed via its official platform. To analyze the relationships between variables, multiple linear regression was employed using SPSS software. Before conducting the primary analysis, a series of classical assumption tests comprising normality, multicollinearity, heteroscedasticity, and autocorrelation were performed to verify that the dataset met all necessary statistical requirements for unbiased estimation. Subsequently, hypothesis testing was carried out to evaluate both the collective and individual impacts of profitability, liquidity, and asset structure on the companies' capital configurations.

Tabel Reseach Variabel Operationalization

Variable	Definition	Measurement	scale
Capital Structure (Y)	Capital structure is essentially the permanent financing mix of an enterprise, representing the balance between long-term liabilities and owner's equity used to fund ongoing business operations (Kasmir 2019)	Debt to Equity Ratio (DER) = Total Debt / Total Equity	Ratio
Profitability (X_1)	Profitability represents a firm's capacity to yield earnings through its sales activities, asset	Return on Equity (ROE) = Net	Ratio

	utilization, and total equity investments (Kasmir, 2019)	Income / Total Equity	
Liquidity (X_2)	Liquidity is a company's ability to meet its short-term financial obligations in a timely and accurate manner (Kasmir 2019)	Current Ratio (CR) = Current Assets / Current Liabilities	Ratio
Asset Structure (X_3)	Asset structure reflects the allocation and composition of a firm's wealth, specifically identifying the proportion of fixed assets in comparison to the total assets owned by the organization (Kasmir, 2019)	Fixed Assets / Total Assets	Ratio

RESEARCH RESULT

Descriptive Statistics

Descriptive statistics provide an overview of the profitability, liquidity, asset structure, and capital configurations of the sampled firms. The analysis reveals that the companies generally exhibited constrained profitability, whereas liquidity positions remained relatively robust, and asset structures stayed at a moderate level. Furthermore, the capital structure data indicates significant disparity in debt utilization across the observed entities. The substantial standard deviation across all variables further underscores the diverse financial health and operational profiles of the companies within the research sample. A detailed summary of these descriptive findings is provided in the table below.

Tabel Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Profitability (X1)	125	.000	1.247	.20942	.244723
Liquidity (X2)	125	.231	10.074	2.02876	1.573907
Asset Structure (X3)	125	.006	.894	.35754	.275592
Capital Structure (Y)	125	.097	3.050	.92357	.592847
Valid N (listwise)	125				

Tests of Classical Assumptions

Normality Test

A normality test was performed to verify that the residuals within the regression framework follow a normal distribution (Muyasaroh et al., 2023). Based on the Kolmogorov Smirnov analysis, the results yielded a significance value of 0.200. Since this figure surpasses the 0.05 alpha level, it is confirmed that the residuals are normally distributed, thereby fulfilling the normality requirement for a valid regression model (Ghozali, 2021).

Multicollinearity Test

Multicollinearity test was executed to ensure the absence of strong inter-correlations among the independent variables, as an ideal regression model must remain free from such redundancies (Ghozali, 2021). The diagnostic results show that all predictor variables-maintained tolerance values exceeding 0.10 and Variance Inflation Factor (VIF) values well below the 10.0 threshold. These findings demonstrate that the model is devoid of multicollinearity issues. The detailed statistical outputs are summarized in the table below.

Tabel Uji Multikoliniearitas

Model		Collinearity Statistics	
		Tolerance	VIF
1	(Constant)		
	Profitability (X1)	.803	1.245
	Liquidity (X2)	.971	1.030
	Asset Structure (X3)	.786	1.273

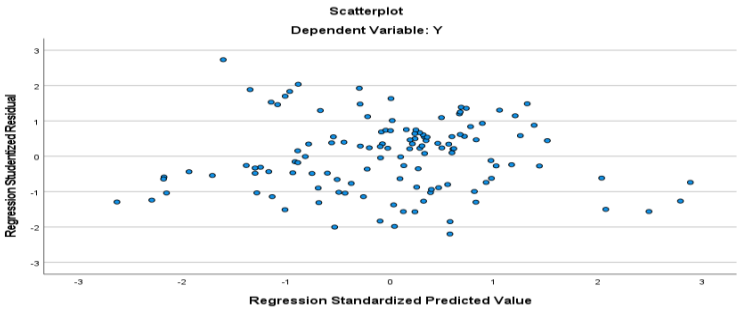
Autocorrelation Test

The autocorrelation test was administered to evaluate the presence of correlations between residuals in the current timeframe (t) and those from previous observations (t-1) (Ghozali, 2021). The Durbin Watson diagnostic yielded a value of 0.786. Given that this result resides within the established threshold of 2 to 2, it is concluded that the regression model is free from autocorrelation issues.

Heteroscedasticity Test

The Heteroscedasticity test was performed to verify whether the variance of the residuals remains constant across all observations (Nabila & Rahmawati, 2023). This assessment was conducted through scatterplot analysis. The visual output reveals that the data points are dispersed randomly both above and below the zero mark on the Y axis, without forming any discernible or systematic pattern. This random distribution confirms that the regression model does not suffer from heteroscedasticity. These visual findings are illustrated in the following graph.

Gambar Grafik Scatterplot



Hypothesis Testing

Simultaneous Hypothesis Testing (F-Test)

The F-test was employed to evaluate whether the collective set of independent variables exerts a significant influence on the dependent variable within the regression framework (Ghozali, 2021). Statistical analysis yielded a calculated F statistic of 50.663, which substantially surpasses the critical F-table value of 2.68. Furthermore, the observed significance level of 0.000 being well below the 0.05 alpha thresholdconfirms that the predictor variables simultaneously and significantly impact the dependent variable. These results validate the overall fit and robustness of the proposed research model.

Tabel Uji Simultan (F)

ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	36.362	3	12.121	50.663	.000[b]
	Residual	28.949	121	.239		
	Total	65.311	124			

a. Dependent Variable: Y

b. Predictors: (Constant), X3, X2, X1

Individual Hypothesis Testing (t-Test)

The partial test was administered to evaluate the unique contribution of each independent variable toward the dependent variable (Ghozali, 2021). The analytical results reveal that all predictors yielded a significance value of 0.000. Since these values are consistently below the 0.05 threshold, it is confirmed that each variable's t-statistic exceeds the critical t-table value of 1.98. These findings demonstrate that profitability, liquidity, and asset structure exert a significant influence on capital structure, leading to the acceptance of H2, H3, and H4. Furthermore, the negative coefficients suggest an inverse relationship; specifically, an increase in these financial metrics tends to diminish the reliance on debt within the firm's capital configuration. Detailed t-test outputs are summarized in the following table.

Tabel Uji Parsial (t)

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	td. Error	Beta	t	Sig.
1	(Constant)	-.555	S.142		-3.913	.000
	Profitability(X1)	-.162	.041	-.269	-3.986	.000
	Liability (X2)	-.854	.074	-.708	-11.525	.000
	Asset Structure (X3)	-.234	.048	-.333	-4.879	.000

a. Dependent Variable: Y

Coefficient of Determination Analysis

The coefficient of determination test evaluates the capacity of the independent variables to explain fluctuations within the dependent variable (Ghozali, 2021). The analysis produced an Adjusted R-Square value of 0.557, demonstrating that profitability, liquidity, and asset structure collectively account for 55.7% of the variance in the company's capital structure. Meanwhile, the remaining 44.3% is attributed to other external factors not encompassed within this research framework. The comprehensive results of this analysis are summarized in the table below

Tabel Uji Koefisien Determinasi

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.746[a]	.557	.546	.489126

a. Predictors: (Constant), X3, X2, X1

b. Dependent Variable: Y

DISCUSSION

Analysis of the Impact of Profitability, Liquidity, and Asset Structure on Capital Structure

The empirical findings of this research demonstrate that profitability, liquidity, and asset structure collectively exert a significant influence on the capital configurations of the firms (Ghozali, 2021). This conclusion is substantiated by the calculated F statistic, which achieved a significance level below the 0.05 threshold. These results indicate that capital structure decisions are not driven by isolated factors but are instead the product of the integrated effects of profitability, liquidity capacity, and asset allocation. Consequently, corporations must comprehensively evaluate their internal financial health when formulating financing strategies and debt utilization policies.

Furthermore, these findings align with the Pecking Order Theory, which posits that firms prioritize internal financing over external funding sources (Myers & Majluf, 1984). The results also resonate with the Trade Off Theory, suggesting that capital structure decisions involve a strategic balance between the tax advantages of debt and the potential costs of financial distress (Kraus & Litzenberger, 1973). This research is consistent with previous studies by Gabriela & Jonnardi (2024); Ekinanda et al. (2021); Restu et al (2022), both of which identified that internal firm factors jointly impact capital structure. However, this study diverges from the findings of Muslimah et al. (2020), who reported that internal variables do not always exhibit a simultaneous significant effect on a company's financing choices

The Influence of Profitability on Capital Structure

The results of this study indicate that profitability exerts a significant and negative influence on capital structure, evidenced by a significance value of 0.000. This inverse relationship suggests that enhanced profitability is associated with a reduction in debt utilization. Firms with robust earnings are better positioned

to fund their operations and strategic investments through internal reserves, thereby diminishing their reliance on external debt financing.

These findings strongly align with the Pecking Order Theory, which posits that enterprises prioritize internal equity over external liabilities. Furthermore, the results resonate with the Trade-Off Theory, suggesting that firms strategically balance the advantages and risks of leverage. As profitability rises, companies often proactively reduce debt to mitigate financial risks, such as interest burdens and potential insolvency. This research is consistent with the findings of Nabila and Rahmawati (2023); Puspita DC, at al (2026), who also identified a negative correlation between profitability and capital structure. Conversely, this study diverges from Laily et al. (2022), who reported a positive effect of profitability on corporate financing choices.

The Impact of Liquidity on Capital Structure

Empirical evidence from this study demonstrates that liquidity exerts a significant and negative influence on capital structure, as indicated by a significance value of 0.000. This relationship implies that higher liquidity levels correspond to reduced debt utilization. Firms possessing robust liquidity are better equipped to satisfy short-term obligations using internal current assets, thereby decreasing their reliance on external debt and favoring internal funding mechanisms.

These results are consistent with recent empirical research by Chadra and Fortuna (2024) as well as Gabriela and Jonnardi (2024), both of which emphasize the significance of internal resources in financing decisions. Similarly, this negative correlation is supported by the study conducted by ZA et al (2021). Collectively, these studies reinforce the notion that robust liquidity positions allow firms to maintain lower debt-to-equity configurations

The Influence of Asset Structure on Capital Structure

Empirical analysis reveals that asset structure exerts a significant and negative influence on capital structure, as evidenced by a significance value of 0.000. This finding implies that firms with a substantial proportion of fixed assets tend to maintain lower debt levels within their financial configurations. Although tangible assets can theoretically serve as collateral for credit, enterprises remain cautious regarding debt-related risks, particularly when facing cash flow volatility.

These findings align with both the Pecking Order Theory and the Trade-Off Theory, which highlight how organizations strategically navigate between internal funding and external liabilities (Myers & Majluf, 1984). The observed negative correlation is consistent with previous research conducted by Gabriela and Jonnardi (2024). However, these results contrast with the findings of Laily et al. (2023), who identified a positive relationship between asset composition and corporate leverage.

CONCLUSIONS AND RECOMMENDATIONS

The empirical results of this research demonstrate that profitability, liquidity, and asset structure collectively exert a significant influence on the capital structure of the firms. On an individual basis, all three variables exhibit a

consistent negative correlation with the debt-to-equity configuration. These findings imply that a more robust financial position is associated with diminished reliance on external leverage. Consequently, firms characterized by superior financial performance prioritize internal reserves to sustain their operational requirements and investment initiatives over external borrowing.

Theoretical analysis confirms that these results align with the Packing Order Theory, which suggests a hierarchical preference for internal financing when internal resources are sufficient (Myers & Majluf, 1984). Furthermore, the findings resonate with the Trade-Off Theory, highlighting the strategic equilibrium firms maintain between the tax advantages of debt and the inherent risks of financial distress.

From a managerial standpoint, these conclusions suggest that corporate executives must meticulously evaluate internal financial health when formulating capital structure strategies. Optimization of internal funds derived from strong financial performance is essential to mitigate financial risks and ensure long-term business resilience and stability.

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