

Profit and Capital Structure as Positive Signals Against Firm Value

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Abstract

The mining sector on the IDX faces challenges such as commodity price volatility and downstream regulations, which impact firm value through capital structure and profitability decisions. This study aims to analyze the influence of profit and capital structure as positive signals on firm value for the 2022-2024 period, with profitability as a moderating variable. A quantitative causal associative approach was used, using a population of all mining companies on the IDX, and a sample of 54 companies through purposive sampling. Secondary data from financial statements were analyzed using SPSS multiple linear regression after classical assumption testing. The results show a significant negative effect of capital structure ($\beta=-0.776$, $p=0.002$), a significant positive effect of profitability ($\beta=0.511$, $p=0.020$), and a significant negative moderating effect ($\beta=-0.246$, $p=0.048$), with an R^2 of 28.4%. Conclusion: Profitability mitigates the negative impact of capital structure, strengthening signaling theory for optimal investment decisions.

INTRODUCTION

The mining sector is a key sector in the Indonesian economy, contributing significantly to exports, state revenue, and employment. Mining companies listed on the Indonesian Stock Exchange face a number of challenges, such as fluctuating global commodity prices and economic uncertainty, which directly impact financial performance and investor perceptions of firm value. Therefore, understanding the elements that influence firm value is crucial for both academics and investment and finance practitioners.

Firm value reflects the market's view of the company's performance and future and serves as a key indicator of shareholder welfare. (Eugene & Joel, 2013) in the capital market, a company's value is typically linked to its share price, which is determined by investor response to the company's released information. Consequently, the quality of financial information is a critical element in the investment decision-making process.

Based on signaling theory, management has more in-depth information about the company's condition compared to investors, so that financial reports function as a tool to send signals to the market (Spence, 1973). Profit and capital structure information are important signals frequently observed by investors because they reflect a company's operational performance and financing policies. Profit and capital structure are two financial parameters frequently used by investors to evaluate a company's performance and risk. Profit indicates a company's ability to generate consistent profits, while capital structure reflects financing policies related to the use of debt and equity.

High and consistent profits reflect operational efficiency and a company's capacity to generate cash flow, and therefore can be considered a good indicator of business sustainability. Increasing profits or profitability is often seen as a sign of progress and positive expectations for a company, which can drive share prices and firm value upwards. Therefore, profits serve not only as a performance indicator but also as a strategic communication tool between management and investors.

In addition to profit, capital structure also serves as a significant signal to the market. Optimal use of debt can increase firm value through tax shields and reflect management's confidence in the company's capacity to meet long-term obligations. However, an unbalanced capital structure can increase financial risk and reduce firm value. Therefore, capital structure policy reflects management's strategy in balancing risk and return, which will then be responded to by investors.

Stock price fluctuations are driven by various factors, including earnings and capital structure. Companies with significant debt are often associated with large companies, as they are perceived as having substantial assets or equity to back their debt. There are various methods for assessing debt, one indicator being the debt-to-equity ratio (DER). DER represents a company's long-term debt as a percentage of its owners' equity (Vonna, 2021). Profitability serves as a moderating variable to analyze the relationship between capital structure and firm value. Profitability is a ratio that indicates how effective management is in generating profits from sales and investments.

Several empirical studies in the Indonesian mining sector have investigated the relationship between profitability, capital structure, and the value of companies listed on the IDX. The research conducted by Kusumowati & Tere (2025) indicates that capital structure influences firm value in the mining sector, although profitability does not always have a significant impact on all mining companies analyzed. Studies also show that the debt ratio does not always have a significant impact on other financial variables (such as the weighted average cost of capital) in the mining context. Vania et al (2024) said that the debt ratio does not have a significant effect on the weighted average cost of capital in mining sub-sector companies, although stock prices as another variable have an impact. Other Research by Zalfa et al (2023) also shows that profitability and capital structure have a positive impact on firm value in the mining industry on the idx, which indicates that profitability serves as a positive signal for the capital market in this sector.

Throughout the year, commodity prices such as coal, nickel, copper, and other minerals experienced significant volatility due to supply chain disruptions, protectionist policies, changes in global demand, and geopolitical tensions. These fluctuations impacted the financial performance of mining companies and the market's outlook for future prospects. In recent years, the Indonesian government has been actively implementing regulations related to the mining industry, including permit reviews, mineral sector taxes, export policies, and incentives for downstream processing. Changes in fiscal and monetary policy can impact interest rates and company cost models, which in turn influence financing decisions (debt) and investor expectations regarding stock prices.

Based on the literature review, several shortcomings underlie the importance of this research. Empirical findings from previous studies in the Indonesian mining industry show inconsistent impacts on profitability and capital structure on firm value (some significant, others insignificant). Various studies refer to the 2022 period, a timeframe that excludes post-pandemic dynamics and global commodity conflicts. To date, several studies have simultaneously explored

the impact of profitability and capital structure on mining firm stock value amid rapidly changing macroeconomic and industry conditions.

This study aims to explain how earnings and capital structure provide positive signals to firm value in a new macro and industry context, and to evaluate whether previous empirical studies are still relevant or have changed in the current economic environment. Therefore, this study seeks to fill this gap by presenting the latest empirical evidence and analyzing how profitability and capital structure affect firm value in mining companies for the period 2022–2024. This study is expected to contribute to understanding the fundamental elements that influence stock prices and provide useful data for investors, company management, and other parties involved in investment decision-making in the mining sector.

LITERATURE STUDY

Signaling Theory

Signaling theory explains how companies communicate information to outside parties, especially investors. According to Spence (1973) signaling theory stems from information asymmetry between company management, an internal party with a clear understanding of the real world, and investors, who only receive limited information. To minimize this information asymmetry, companies convey signals through financial reports, dividend announcements, capital structure policies, and profitability benchmarks.

Connelly et al (2011) He stated that a signal is a step taken by internal parties to demonstrate to external parties the company's fundamental condition. This information is then interpreted by investors as either good or bad news. High profitability indicates a positive signal regarding strong company performance and good prospects for the future. This will increase investor confidence and drive share prices upwards. Conversely, excessive debt can be a negative signal because it indicates increased financial risk for the company, which can undermine investor confidence.

Eugene & Joel (2013) emphasizes that financial information released by companies, whether through income statements or financial ratios, is a key tool for sending signals to the market. This data is then processed by investors to make investment decisions, ultimately reflected in changes in stock prices. In this way, signaling theory can be used to explain the relationship between debt and profitability on stock prices. Increasing profitability is a positive indicator that drives up stock prices, while high debt can be a negative indicator that lowers a company's stock price.

Signaling theory also helps understand the rationale behind a company's decision to provide its financial information to relevant parties. Due to communication barriers between the company and external parties, external parties feel compelled to fill the role of external stakeholders. As a result of information asymmetry, internal stakeholders have more knowledge about the company and its future than external partners (investors and creditors). Third parties with limited information offer very low prices to the company as a form of self-protection, due to their limited understanding of the corporation. A firm value may increase if the information gap is addressed. (Windya Miransa & Sri Yuni, 2023) One method to reduce the effects of information asymmetry is to provide reliable financial signals to investors and other interested parties.

Firm Values

A firm value is closely related to its share price. A higher share price automatically increases the firm value, which in turn generates interest and increases market confidence in both the company's current performance and future prospects. The capital market is a system that bridges

those with surplus funds (investors) and those in need of funds (issuers). In an efficiently functioning capital market, information regarding a company's financial performance, business prospects, risk levels, macroeconomic conditions, and other external factors are readily reflected in the stock price.

The stock price is the amount investors pay to acquire shares in a company on the secondary market. Stock price fluctuations are influenced by internal company factors (fundamentals such as profit, debt, efficiency, growth) and external factors (macroeconomics, government policy, commodity prices, exchange rates, inflation, and interest rates).

These shares or securities reflect the shareholder's ownership share in the company, which is indicated by certain numbers and values listed on the company's shares. (Khasanah & Dedi Suselo, 2022) Shares are a sign of individual ownership of the company that issued them. As a financial instrument, shares indicate that the owner owns a portion of the company's assets. (Aditya Yunanto & Atri Nodi Maiza Putra, 2025). The ownership portion is determined by the total investment deposited into the company. (Sutriyadi, 2023) As a financial instrument, shares indicate that their owners own a portion of the company's assets. In other words, a shareholder is someone who owns a portion of the company. The more shares they own, the greater their influence or control over the company (Zakaria et al., 2024).

Capital Structure

Debt is a crucial element in the capital structure, indicating the extent to which a company finances its assets through borrowed funds compared to its own capital. Debt ratios are generally measured by the Debt to Equity Ratio (DER), the Debt to Asset Ratio (DAR), or other ratios. In this study, the ratio used to measure debt is DER. DER shows how long-term debt relates to owner's equity. The use of debt at a certain level can increase a firm value due to tax savings (tax shields), but at higher debt levels, it can increase the risk of bankruptcy, negatively impacting the firm value and stock price. Therefore, the relationship between debt and stock price is not always linear.

Several empirical studies show varying evidence on the impact of debt on stock values, especially in the mining sector. (Wahyu Umaryadi & S. Jaya, 2024) The results show that DER has no significant impact on stock prices, while profitability does. This suggests that investors in the mining sector focus more on profit than debt ratios when making investment decisions.

Besides that's the research that was done (Vania et al., 2024) shows that the debt ratio is related to the weighted average cost of capital (WACC), which ultimately affects stock prices. High debt increases a company's risk, leading to a decline in investor confidence in the company's stock. An increase in the DER indicates greater financial risk due to a higher proportion of debt compared to equity, while a low DER indicates a company is more dependent on its equity. (Aditya Yunanto & Atri Nodi Maiza Putra, 2025)

An increase in DER indicates greater financial risk because the debt-to-equity ratio is higher, while a low DER indicates the company is more dependent on its own capital.

Companies must evaluate their financing sources, whether from equity, debt, or a combination of the two. A high DER ratio indicates a high level of debt relative to equity, which increases financial risk and can reduce investor interest in the company's stock.

Profitability

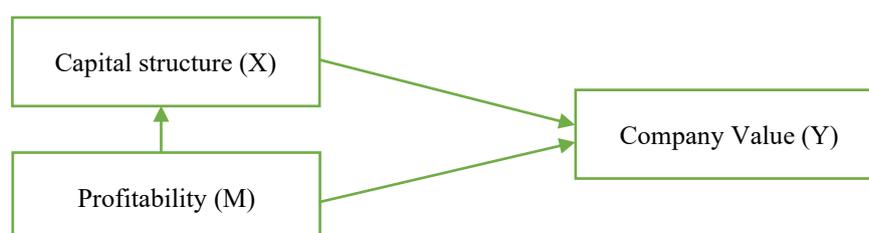
Profitability is one of the main benchmarks for evaluating a company's financial performance. Profitability reflects a company's ability to generate profits over a specific period by utilizing its assets, capital, and sales. Profitability indicates how effectively management manages the company's resources to provide returns to shareholders. Profitability is a ratio used to assess the level of profit or return (return) relative to sales or assets, assessing a company's profit-generating capacity relative to sales, assets, and equity. (Kosim & Safira, 2020) Profitability ratios can be measured by comparing various elements contained in the income statement and/or balance sheet. The goal is to monitor and assess the company's profitability over time.

In the view of signaling theory, high profitability can function as a positive signal for investors that the company has promising business potential for future share prices. (Spence, 1973) This situation typically causes stock prices to rise due to increased investor demand. On the other hand, low profitability signals a lack of management's ability to generate profits, which can reduce investor interest in the company's shares (Eugene & Joel, 2013).

In this study, the profitability ratio used is Return on Equity (ROE). Return on Equity (ROE) describes the ratio between the profit received by capital owners and the amount of capital employed. It also reflects the profitability of equity, or the company's capacity to utilize that capital to generate profits. Return on Equity indicates the extent to which a company generates profits by utilizing all of its available capital. According to available data, despite fluctuations in the company's net profit after tax, earnings per share (EPS) showed a decline, while the company's total capital actually increased (Zakaria et al., 2024).

The higher the ROE ratio, the better the company's performance, which ultimately increases investor confidence in making investments (Sutriyadi, 2023). An increase in ROE value indicates that the company's performance is increasingly satisfactory, which can ultimately impact its share price (Zakaria et al., 2024).

Conceptual Framework



Development Hypothesis

The Influence of Capital Structure on firm Value

Debt is an element of the capital structure that indicates the extent to which a company manages asset financing through borrowed funds compared to its own capital. Debt is measured using the Debt to Equity Ratio (DER), which is used by companies to assess how much capital they have to cover debt. The higher the Debt to Equity Ratio (DER), the higher the cost of debt the company must pay, thus reducing profitability. Alprida Tandi Ayu et al (2023) This situation could reduce investor interest because it negatively impacts stock prices. High debt creates risks, which can impact stock prices. Vida Mega Pradita & Dedi Suselo (2022) In his research, he showed that the debt to equity ratio has a significant effect on the share prices of mining companies. Indriani et al (2022) and Jamal & Rahmah (2025) shows that capital structure has a

significant effect on firm value. Alief's research shows that capital structure has a significant negative effect on firm value. Based on the above, the following hypothesis can be drawn:

H1: Capital structure has a significant effect on firm value.

The effect of profitability on firm value

Profitability indicates a company's ability to generate profits by using existing assets or equity. The greater the profitability, the better the signal to investors that the company can deliver superior returns. In this study, profitability is measured using Return on Equity (ROE), a ratio that illustrates a company's ability to generate net income as a return for investors who have invested their capital in the company. Kosim & Safira (2020) In his research, he showed that profitability has an influence on stock prices. The research conducted by Sara et al (2023) also shows that profitability has an effect on stock prices. Alamsyah (2019) In his research, he stated that profitability has a significant effect on share prices. Rudi Harianto (2022) This shows that profitability significantly influences firm value. High profits and earnings offer good opportunities for the company and encourage investors to increase demand for shares, thus increasing share prices (Rudi Harianto, 2022). This indicates that higher profits generated by a company will increase the company's stock price. Companies strive to achieve because profit is an indicator that can influence profits stock prices. Based on the above, the following hypothesis is derived:

H2: Profitability has a significant effect on firm value

The Effect of Profitability in Moderating Capital Structure on Firm Value

Capital structure is a strategic financial decision related to the ratio of debt to equity used in a company's financing. This decision not only impacts financial risk but also influences investors' views on the company's future, which is ultimately reflected in the company's value. High profitability is a good sign for investors and increases the firm value in the market. Conversely, a very aggressive capital structure (too much debt) can reduce profitability due to high interest expenses, thus negatively impacting the firm value. Rachmariyani et al., (2026). Therefore, a capital structure involving debt will be more accepted by the market when supported by a high level of profitability. Profitability not only directly impacts firm value but also strengthens or weakens the relationship between capital structure and firm value. In other words, profitability acts as a moderating variable in this relationship.

This research is in line with research (Ramadhani et al., 2021), (Walmaghfiroh, 2019), (Viriany, 2025) And (Yando, 2018) which states that profitability is able to moderate capital structure and firm value. Based on the above, the following hypothesis is obtained:

H3: Profitability is able to moderate the influence of capital structure on firm value.

RESEARCH METHODS

Types and Methods of Research

This study applies a quantitative approach with a causal associative type to examine the influence of independent variables such as capital structure and profitability on the dependent variable, namely firm value, as well as the role of profitability as a moderating variable. This approach is suitable for analyzing cause-and-effect relationships based on secondary data from financial statements of mining sector companies listed on the IDX for the 2022-2024 period. Sugiyono (2022) emphasizes that quantitative methods are effective in hypothesis testing through statistical analysis, while Sudaryono supports their use for large populations in the context of

Indonesian finance. Emzir adds that the post-positivist paradigm in this approach ensures objectivity in the development of knowledge.

Data Analysis Instruments and Techniques

The research instruments consisted of secondary data from annual financial reports, audited financial statements, and stock prices obtained from the official IDX website (www.idx.co.id), Yahoo Finance, and IDN Financials. The variables were operationally measured with the Debt to Equity Ratio (DER) for capital structure, Return on Equity (ROE) for profitability, and the stock closing price for firm value.

The data analysis techniques included descriptive statistics, classical assumption tests (Kolmogorov-Smirnov normality, VIF-tolerance multicollinearity, Glejser heteroscedasticity, Durbin-Watson autocorrelation), multiple linear regression, partial t-test, simultaneous F-test, and the coefficient of determination R^2 using SPSS software. These techniques allowed for comprehensive testing of moderating effects.

Creswell (2022) recommends multiple regression for experimental and correlational quantitative designs, while Sugiyono (2022) emphasizes the importance of classical assumption tests for model validity.

Population and Sample

The study population included all mining sector companies listed on the Indonesia Stock Exchange (IDX) during the 2022-2024 period. The sample was determined through purposive sampling with the following criteria: continuously listed companies, providing complete and audited financial reports, and possessing the required research variable data, resulting in 54 companies.

This purposive sampling method is commonly used in BEI financial studies to ensure data relevance, as explained by Sugiyono (2022) for non-probability sample selection based on specific criteria. Sudaryono also supports it for quantitative research in the mining sector.

Research Procedures

The procedure begins with secondary data collection from official sources, followed by data processing using SPSS for descriptive analysis and classical assumption testing to validate the regression model. Next, multiple linear regression analysis is performed to test the direct and moderation hypotheses. The results are then interpreted with t-tests, F-tests, and R^2 , along with a discussion of the implications.

Emzir emphasizes this systematic sequence of procedures to maintain reliability in quantitative research, while Creswell (2022) suggests integrating assumption testing before regression to avoid bias. This procedure ensures that empirical findings can be generalized to the current mining sector context.

RESULTS

Test Results and Data Analysis

1. Descriptive Statistics Test Results

Descriptive statistical analysis was used to provide an overview of the characteristics of the research data, including the minimum, maximum, and average (mean) values and standard

deviations of each research variable. All data used in this study were declared valid, and there was no missing data.

- A. The profitability variable shows a minimum value of -3.91 and a maximum value of 0.43. The average value is -1.7972 with a standard deviation of 1.02648. The negative average value indicates that overall, the companies included in the sample had moderate profitability during the study period. The smaller variation compared to the debt variable indicates that the range of profitability data tends to be more uniform, although differences in profitability performance between companies remain.
- B. The capital structure variable has a minimum value of -3.91 and a maximum value of 2.12, with an average of -0.4644 and a standard deviation of 1.38573. A negative average value indicates that overall, the debt levels of companies in the sample tend to be low. A standard deviation higher than the average indicates significant differences in debt levels between companies during the observed period.
- C. The firm value variable has a minimum value of 3.71 and a maximum value of 11.04, with a mean value of 6.4346 and a standard deviation of 1.68929. This mean value indicates that the stock prices of the companies in the sample are relatively stable. However, the relatively high standard deviation indicates significant differences in stock prices between companies during the study period.

2. Classical Assumption Test

The classical assumption test aims to determine whether the multiple regression model used meets the classical assumptions or not. The classical assumption test is divided into four tests, namely, the normality test, the multicollinearity test, the heteroscedasticity test, and the autocorrelation test.

A. Normality Test

The normality test is used to determine whether the regression model and the residual variables are normally distributed. In this study, the normality test was conducted using a graphical and Kolmogorov approach.

Source:

		Standardized Residual
N		54
Normal	Mean	,0000000
Parameters ^{a,b}	Std. Deviation	1,48711451
Most Extreme	Absolute	,110
Differences	Positive	,110
	Negative	-,048
Test Statistics		,110
Asymp. Sig. (2-tailed)		,098

Secondary data, processed with SPSS

Based on the results of the normality test conducted with the One-Sample Kolmogorov-Smirnov Test, the KS statistical value was obtained, namely 0.110 with an

Asymp. Sig (2-tailed) value of 0.098. A significance value greater than the predetermined significance level of $0.098 > 0.05$. Thus, H_0 which states that the residual data is normally distributed cannot be rejected.

B. Multicollinearity Test

Multicollinearity testing is performed to determine whether there is a strong relationship between the independent variables in a regression model. An effective regression model requires the absence of multicollinearity, allowing each independent variable to explain the dependent variable separately. Multicollinearity testing is performed by examining tolerance values and VIF (Variance Inflation Factor) values. The guidelines for making decisions regarding multicollinearity testing are as follows:

1. If the tolerance value > 0.10 and the VIF value < 10 , then multicollinearity does not occur.
2. If the tolerance value is < 0.10 and the VIF value is > 10 , then multicollinearity occurs.

Table 2. Multicollinearity Test

Model	Tolerance	VIF
1. Capital Structure	,971	1,030
Profitability	,971	1,030

Source: Secondary data, processed with SPSS

Based on the multicollinearity test results table above, the tolerance value for the capital structure variable was recorded at 0.971 and the variance inflation factor (VIF) value reached 1.030. On the other hand, the profitability variable showed a tolerance value of 0.971 and a variance inflation factor (VIF) value of 1.030. A tolerance value > 0.10 and a VIF value < 10 indicate that there is no multicollinearity between the independent variables in the regression model. This indicates that the profitability and capital structure variables do not have a significant linear relationship with each other, so each variable can make a clear contribution in explaining stock price variations.

C. Heteroscedasticity Test

The heteroscedasticity test in this study was conducted using the Glejser test, namely by regressing the absolute value of the residual (ABRESID) as the dependent variable against the independent variables of capital structure and profitability. The regression model is considered not to experience heteroscedasticity if the independent variable does not significantly influence ABRESID. The guidelines for making decisions regarding heteroscedasticity tests using the Glejser test are:

1. If the significance value (sig) > 0.05 , then there are no symptoms of heteroscedasticity.
2. If the significance value (sig) < 0.05 , then heteroscedasticity symptoms occur.

Table 3. Heteroscedasticity Test

Model	B	Std. Error	Beta	t	Sig.
1 (Constanr)	1,530	,253		6,047	<,001
Capital Structure	-,022	,092	-,033	-,241	,811
Profitability	,214	,124	,238	1,725	,091

Source: Secondary data, processed with SPSS

Based on the analysis results, the capital structure variable shows a regression coefficient value of -0.022 with a significance value (Sig) of 0.811. This significance value is >0.05, so it can be concluded that the capital structure variable does not have a significant effect on the absolute value of the residual. Furthermore, the profitability variable shows a regression coefficient value of 0.214 with a significance level of 0.091. This significance value is >0.05, indicating that profitability does not significantly affect the absolute value of the residual.

D. Autocorrelation Test

The autocorrelation test aims to determine whether there is a relationship between the residuals at different observation periods in a regression model. A good regression model requires the absence of autocorrelation, so the residuals must be independent.

Model	R	R Square	Durbin-Watson
1	,474a	,225	1,642

Source: Secondary data, processed with SPSS

The results of the Durbin-Watson autocorrelation test showed a Durbin-Watson value of 1.642. This value lies in the range of 1.5 to 2.5, which is generally used as an indicator of the absence of autocorrelation. Thus, it can be concluded that there is no autocorrelation in the regression model established in this study. This indicates that the residuals between observations are independent and uncorrelated with each other.

E. Multiple linear regression analysis

A multiple linear regression test was conducted to demonstrate that capital structure, profitability, and the interaction between capital structure and profitability significantly influence firm value. This model was used to examine the role of profitability as a moderating variable in the relationship between capital structure and firm value. This analysis was conducted using SPSS, and the results are displayed in the coefficient table.

Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	7,257	,416		17,425	<,001
Capital Structure	-,776	,237	-,637	-3,276	,002
Profitability	,511	,213	,311	2,398	,020
Capital Structure* Profitability	-,246	,121	-,414	-2,026	,048

Source: Secondary data, processed with SPSS

Multiple linear regression equations

Based on the Unstandardized Coefficients (B) value, the following regression equation is obtained:

$$\text{Firm Value} = 7.257 - 0.776 (\text{Capital Structure}) + 0.511 (\text{Profitability}) - 0.246 (\text{Capital Structure*Profitability})$$

The constant value of 7.257 indicates that if the capital structure and profitability are zero, then the firm value is at 7.257 as the basis of the regression model. The capital structure variable shows a regression coefficient of -0.776 with a significance value of $0.002 < 0.05$. This study indicates that capital structure has a negative and significant influence on firm value. The regression coefficient for the profitability variable is 0.511 with a significance value of $0.020 < 0.05$. A positive coefficient indicates that profitability has a positive and significant influence on firm value. Furthermore, the interaction variable between capital structure and profitability shows a regression coefficient of -0.246 with a significance value of $0.048 < 0.05$. These results indicate that profitability substantially moderates the influence of capital structure on firm value. A negative interaction coefficient indicates that profitability reduces the influence of capital structure on firm value.

3. Hypothesis Testing

A. Persian Test (T-test)

The partial test (t-test) is used to identify the effect of each independent variable on the dependent variable separately. The test results are shown in the table below:

Table 6. Periodic Test (T-test)

Model	B	Std. Error	Beta	t	Sig.
1 (Constant)	7,257	,416		17,425	<,001
Capital Structure	-,776	,237	-,637	-3,276	,002
Profitability	,511	,213	,311	2,398	,020
Capital Structure* Profitability	-,246	,121	-,414	-2,026	,048

Source: Secondary data, processed with SPSS

The capital structure variable shows a t-value of -3.276 with a significance level of $0.002 < 0.05$. This study indicates that capital structure has a negative and significant impact on firm value. The profitability variable shows a t-value of 2.398 with a significance value of $0.020 < 0.05$. This study indicates that profitability has a positive and significant impact on firm value. Furthermore, the interaction variable between capital structure and profitability shows a t-value of -2.026 with a significance level of $0.048 < 0.05$. This indicates that the moderating variable has a significant influence on firm value.

Based on the results of the t-test, it can be concluded that partially capital structure and profitability have a significant influence on firm value, and profitability functions as a moderating variable in the relationship between capital structure and firm value.

B. Simultaneous Test (F-test)

The simultaneous test (F test) aims to identify whether independent variables have a joint effect on the dependent variable. This test is performed by examining the calculated F value and significance level in the ANOVA table. The F test results table is as follows:

Table 7. Simultaneous test (F test)

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	42,926	3	14,309	6,605	<,001b
Residual	108,321	50	2,166		
Total	151,247	53			

Source: Secondary data, processed with SPSS

The test results show that the calculated F-value is 6.605 with a significance level of 0.001. The significance value is <0.05. This study indicates that the variables of capital structure, profitability, and the interaction between capital structure and profitability collectively have a significant influence on firm value, thus the regression model meets the statistical feasibility criteria for hypothesis testing.

4. Coefficient of Determination Test (R²)

The Model Summary table is used to measure the extent to which the independent variables can explain the variation in the dependent variable.

Table 8. Test of the Coefficient of Determination (R²)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,533a	,284	,241	1.47187

Source: Secondary data, processed with SPSS

According to the Model Summary table, the R Square value obtained is 0.284 and the Adjusted R Square is 0.241. These results indicate that 28.4% of the variation in firm value can be explained by the variables of capital structure, profitability, and the interaction between capital structure and profitability established in the research model. The Adjusted R Square value of 24.1% indicates how well the model can explain the variation in firm value after considering the number of independent variables and firm size. The correlation coefficient (R = 0.533) indicates a significant relationship between the independent variables simultaneously with firm value. Therefore, the established regression model is declared appropriate and can explain the relationship between capital structure, profitability and the function of profitability as a moderating variable on firm value.

DISCUSSION

The Influence of Capital Structure on Firm Value

The research results indicate that capital structure has a negative and significant impact on firm value in the mining sector. Empirically, this study shows that increasing corporate debt levels are often negatively responded to by the market. High debt levels indicate an increasing financial burden on the company, particularly in the form of interest and principal payments. This situation can reduce the company's financial flexibility and increase the risk of default (financial distress), which in turn lowers investor confidence. According to signaling theory, high debt can be perceived as a negative signal by investors, especially if it is not supported by solid financial performance. This negative indication encourages investors to lower their expectations for the company's future, ultimately reducing the company's valuation, which is manifested in a decline in the firm value.

This research is in line with research conducted by Vonna (2021) which states that debt has a negative and significant effect on stock prices. In this study, debt and stock prices are used as ratios to measure capital structure and firm value. The research was conducted by (Kusumowati & Tere, 2025), (Jamal & Rahmah, 2025), (Rohmawati & Tjahjono, 2024) and (Freza & Amanda, nd) said that capital structure influences firm value.

The Influence of Profitability on Firm Value

These results indicate that profitability has a positive and significant impact on firm value. In the mining sector, profitability indicates a company's success in managing exploration costs, production efficiency, and its ability to capitalize on commodity price fluctuations. Profitability is a company's ability to generate profits and measures its operational efficiency and the efficiency with which it utilizes its assets. (Rudi Harianto, 2022) Companies that demonstrate high profitability are considered to have good financial performance and brighter business prospects, thus attracting investor interest. High profitability indicates a positive signal to the market regarding the stability of cash flow and the company's capability to generate sustainable value. This finding is consistent with signaling theory, which states that profit serves as a signal to investors about the credibility of management performance (Spence, 1973).

The results of this study are in line with research conducted by (Rohmawati & Tjahjono 2024) that profitability has a positive and significant effect on firm value. The research (Setyani et al., 2024) and (Gamaliel Arta Prima Sinurat, 2024) shows that profitability has an effect on firm value.

The Effect of Profitability in Moderating Capital Structure on Firm Value

The analysis results indicate that profitability significantly influences the influence of capital structure on firm value, with a negative moderating effect. This indicates that profitability mitigates the negative impact of capital structure on the value of mining companies. Mining companies with high profitability are considered better able to manage debt risk because they have sufficient cash flow to meet interest and principal obligations. From a signaling theory perspective, profitability acts as a balancing signal that can alter investors' understanding of capital structure signals. When a company experiences high profitability, the negative signal from large debt is reduced because investors perceive the company as having sufficient financial capacity to meet its debt obligations. In other words, the positive signal from profitability can offset the negative signal from capital structure, thus reducing the negative effect of debt on firm value. Conversely, in companies with low profitability, the negative signal from debt is exacerbated because investors perceive the company as lacking the ability to manage financial risks. This situation results in a more impactful decline in firm value.

This research is in line with research (Ramadhani et al., 2021), (Walmaghfiroh, 2019), (Viriany, 2025) and (Yando, 2018) which states that profitability can moderate the effect of capital structure on firm value. The company has successfully managed capital and debt to create firm value, supported by non-equity returns derived from management performance and attracting the interest of potential investors (Yando, 2018). Increased profitability is often accompanied by a decrease in the use of debt, which can result in a more conservative capital structure (Viriany, 2025).

CONCLUSION

This study found that capital structure had a negative and significant effect on the value

of mining sector firms listed on the Indonesia Stock Exchange (IDX) for the 2022-2024 period, while profitability had a positive and significant effect, with profitability effectively moderating this relationship by reducing the negative impact of debt. The regression model explained 28.4% of the variation in firm value, supported by the qualified classical assumption test, thus strengthening the signaling theory, where earnings serve as a buffer for financial risk.

However, limitations of this study include the use of secondary data over a limited period that may not capture long-term fluctuations, and the absence of control variables such as firm size or capital intensity. Suggestions for future research include expanding the analysis period to 2025-2026, cross-sector testing, and the integration of additional moderating variables such as dividend policy. Practically, these results suggest that company management should optimize a conservative capital structure supported by high profitability to boost investor confidence, and that the IDX regulator should design tax incentives to stabilize the mining sector.

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