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The Effect Of Solvency And Profitability On Stock Returns In Mining Sector Companies Listed On The Indonesian Stock Exchange

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Abstract: *This study examines the effect of solvency and profitability on stock returns among mining sector companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period. The mining industry represents one of Indonesia's most volatile economic sectors, influenced by fluctuations in global commodity prices, energy transition pressures, and post-pandemic market uncertainty. Understanding how internal financial indicators shape investor responses within this environment is therefore essential. The study employs an associative quantitative approach using panel data regression. Solvency is measured through the Debt to Equity Ratio (DER), profitability through Return on Equity (ROE), and stock return serves as the dependent variable. A purposive sampling technique was applied, producing a final sample of 12 companies with 60 observations. Data analysis was conducted using EViews, and diagnostic procedures included normality, multicollinearity, heteroscedasticity, and autocorrelation tests. The results show that, individually, neither DER (p = 0.7295) nor ROE (p = 0.2456) has a significant effect on stock returns. However, when tested simultaneously, DER and ROE significantly influence stock returns, as indicated by the F-statistic probability value of 0.0142. The Adjusted R^2 value of 0.2373 demonstrates that the two variables jointly explain 23.73 per cent of stock return variation, while the remaining 76.27 per cent is determined by other factors not included in the model. These findings suggest that solvency and profitability do not independently drive investor reactions in a highly volatile sector; however, taken together, they form an important component of market valuation, particularly under conditions of uncertainty and fluctuating industry performance.*
Keywords: *Solvency, Profitability, Stock Returns, Mining Sector, Financial Performance.*

INTRODUCTION

The mining industry plays a pivotal role in Indonesia's economic structure, contributing significantly to national income, employment, and export earnings. As one of the sectors most closely linked to global commodity cycles, the performance of mining companies listed on the Indonesia Stock Exchange (IDX) is often influenced by both internal financial conditions and broader market dynamics (Tandelilin, 2017). Investors seeking to optimize portfolio performance require a deep understanding of key financial indicators particularly solvency and profitability

which serve as critical benchmarks for evaluating a firm's ability to generate long-term value and withstand financial risk (Ross et al., 2022). The relationship between these internal financial indicators and stock returns remains a major focus of financial research, as stock performance is widely recognized as the market's assessment of a company's future prospects (Bodie et al., 2021).

Solvency reflects a company's capability to meet long-term financial obligations, safeguard its operational continuity, and maintain strategic stability during volatile market cycles (Brigham & Ehrhardt, 2022). In the mining sector—characterized by high capital intensity, long project lifecycles, and fluctuating global commodity prices—solvency becomes even more crucial (Hilson, 2020). High solvency ratios indicate strong financial foundations, while weak solvency may signal elevated default risk, which investors tend to penalize through lower valuations and reduced stock performance (Frank & Goyal, 2009). Previous empirical studies have provided mixed evidence: some indicate a negative relationship between leverage and stock returns due to higher risk premiums (Chen & Zhao, 2006), while others find that moderate leverage may enhance performance through improved efficiency (Modigliani & Miller, 1958). Such inconsistencies underscore the need for further investigation within sector-specific contexts such as mining in Indonesia.

Profitability, on the other hand, remains one of the most influential determinants of investment decisions. Indicators such as Return on Assets (ROA) and Return on Equity (ROE) are widely used by investors to assess management efficiency, operational performance, and the sustainability of earnings (Gitman & Zutter, 2021). A company with strong profitability signals positive future cash flows, operational stability, and long-term value creation—factors that generally lead to positive investor sentiment and higher stock prices (Fama & French, 2015). Several studies have shown that profitability has a positive and significant effect on stock returns, indicating that the market rewards firms capable of generating higher income relative to their assets and equity (Hanafi, 2018; Lestari & Sugiharto, 2020). However, research in emerging markets sometimes shows weaker or inconsistent relationships due to varying market efficiency levels (Mishkin, 2019), suggesting the need for localized empirical validation.

Stock returns serve as the primary indicator of investor gains and market valuation, reflecting both firm-specific financial health and external market forces (Reilly & Brown, 2019). The mining sector is highly sensitive to changes in global commodity prices, geopolitical tensions, and

environmental policies, all of which may create abrupt fluctuations in stock returns (Hartman et al., 2021). Consequently, the interplay between solvency, profitability, and stock return becomes complex, particularly in emerging markets where economic conditions and regulatory environments evolve dynamically (Sadorsky, 2021). The Indonesian capital market—with its mix of domestic and foreign investors—provides a unique environment for examining these dynamics.

Studies focusing on Indonesian mining companies have grown in recent years; however, many still show inconsistent findings. Some indicate that solvency exerts a strong negative effect on stock returns due to increased financial risk (Rahmawati & Hidayat, 2021), while others argue that leverage has minimal influence as investors prioritize profitability over capital structure (Wibowo & Hariyanto, 2022). Similarly, while profitability is commonly found to have a positive effect on stock returns, the magnitude of this influence varies depending on macroeconomic conditions, firm size, and commodity cycles (Sukamulja, 2019). These mixed results highlight gaps in empirical understanding and reinforce the importance of sector-specific research that considers both internal financial performance and external market dynamics.

Given the strategic importance of the mining industry and the volatile nature of global commodity markets, it is essential to examine financial indicators that influence stock returns in this sector. This study aims to analyze the impact of solvency and profitability on the stock returns of mining companies listed on the Indonesia Stock Exchange from 2019 to 2022. By integrating financial theory with empirical evidence from an emerging market perspective, the study seeks to provide deeper insights for investors, policymakers, and industry stakeholders. The findings are expected to contribute to the ongoing academic discourse on financial performance and investment behavior, while also offering practical implications for portfolio management, risk assessment, and corporate financial strategy within Indonesia's mining sector.

METHOD

This study employed a quantitative research design using an explanatory approach to examine the effect of solvency and profitability on the stock returns of mining companies listed on the Indonesia Stock Exchange. The explanatory design was selected because it allows researchers to test causal relationships between variables through statistical procedures, thereby strengthening the reliability of empirical findings (Creswell & Creswell, 2018). The research

population consisted of all mining companies listed on the IDX from 2019 to 2022. A purposive sampling method was used to determine the sample, based on criteria such as availability of complete financial statements, consistent listing status during the research period, and accessibility of stock return data. Purposive sampling is widely recommended for studies requiring specific characteristics relevant to the research objectives (Etikan et al., 2016).

The study utilized secondary data collected from the official IDX database, annual reports, and audited financial statements published by each company. Secondary data are commonly used in financial research due to their accuracy, standardization, and suitability for longitudinal analysis (Saunders et al., 2019). The variables analyzed were solvency (measured using the Debt-to-Equity Ratio), profitability (measured using the Return on Assets), and stock return (calculated from annual price changes). These indicators have been widely validated in prior financial research for evaluating corporate financial health and investor outcomes (Ross et al., 2022).

Data analysis was conducted using multiple linear regression to determine the simultaneous and partial effects of solvency and profitability on stock returns. Multiple regression is considered appropriate for predictive research involving more than one independent variable and is particularly effective for financial-performance modelling (Hair et al., 2019). The classical assumption tests performed included normality, multicollinearity, heteroscedasticity, and autocorrelation, ensuring model accuracy and statistical validity. All analyses were performed using SPSS.

RESULT AND DISCUSSION

Descriptive Test

This study uses panel data from 12 mining companies listed on the Indonesia Stock Exchange (IDX) during the 2020–2024 period, resulting in 60 observations. Data analysis was performed using EViews software.

	Y	X1	X2
Mean	0.32	1.26	0.38
Median	0.00	0.71	0.14

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Maximum	4.40	10:42	7.56
Minimum	-0.81	0.06	0.00
Std. Dev.	0.98	1.65	1.10

Table 1. *Descriptive Analysis*

The stock return variable (Y) has an average of 0.32, indicating that the company's stock returns are generally relatively low. However, the maximum difference of 4.40 and the minimum of -0.81, along with a standard deviation of 0.98, indicates that the fluctuation or volatility of the company's stock returns is quite high and there is significant variation between companies. The DER variable (X1) has an average of 1.26, indicating that companies generally use debt approximately 1.26 times their equity. A fairly wide range of values is seen from the maximum value of 10.42 and the minimum of 0.06, reflecting different variations in capital structure policies between companies. The standard deviation of 1.65 indicates significant variation in the level of debt used by companies. Meanwhile, the ROE variable (X2) has an average of 0.38, indicating that the average company's return on equity is relatively low. However, the maximum value of 7.56 and the minimum of 0.00 as well as the standard deviation of 1.10 indicate that there are significant differences in financial performance between companies, with some having high ROE and some having low.

Panel Data Regression Analysis

$$Y = 0.6152 - 0.0215*X1 - 0.0982*X2$$

The constant value is0.6152 indicates that if the DER and ROE variables are assumed to be fixed or zero, the average stock return is 0.6152. This describes stock returns when independent factors have no influence.

The beta coefficient value for DER (X1) is-0.0215 indicates that every 1% increase in DER, assuming a constant ROE, will result in a 0.0215 unit decrease in stock returns. This relationship is negative, meaning that the higher a company’s debt level, the lower its stock returns tend to be.

Beta coefficient valueFor ROE (X2) of -0.0982, this means that for every 1% increase in ROE, assuming a constant DER, stock returns will decrease by 0.0982 units. This negative relationship indicates that an increase in equity profitability is followed by a decrease in stock returns in the context of this data.

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Model Selection

Lagrange Multiplier Tests for Random Effects			
Null hypothesis: No effects			
Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided (all others) alternatives			
	Hypothesis Test		
	Cross-section	Time	Both
Breusch-Pagan	1.181315	3.774386	4.955701
	(0.2771)	(0.0520)	(0.0260)
[2]Tables may have a footer. Source: Data Processed, 2025			

Table 2. *Model selection results*

Based onThe Lagrange Multiplier (LM) test results for the Random Effects Model obtained probability values of 0.2771 for the cross-section, 0.0520 for time, and 0.0260 for the combined (both). The cross-section probability value greater than the 0.05 significance level indicates that there are no significant random effects between individuals, so the Common Effect Model (CEM) is still possible to choose from the cross-section side only. However, the probability values for time (0.0520) and combined (0.0260) that are close to or smaller than 0.05 indicate the presence of significant random effects related to time and the combined time andindividual.

Thus, based on this LM test, it can be concluded that the best model for this study is the Random Effects Model (REM), which simultaneously considers random effects variation between individuals and over time. This indicates that there are significant, non-negligible differences between entities and over time, making the REM model more efficient and appropriate for describing the relationships between variables in this study.

Multicollinearity Test

	X1	X2
X1	1,000,000	0.381996

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X2	0.381996	1,000,000

Table 3. *Multicollinearity Test Result*

Based on the results of the correlation test between the independent variables in this study, it is known that the correlation coefficient value between DER (X1) and ROE (X2) is 0.381996. This value is much smaller than the tolerance limit for multicollinearity, which is generally set at 0.85. Therefore, it can be concluded that there are no significant symptoms of multicollinearity between the independent variables in this regression model. In other words, the relationship between the DER and ROE variables is not strong enough to interfere with the estimation of the regression coefficient, so the regression model used can be accounted for in terms of being free from multicollinearity between the independent variables.

Heteroscedasticity Test

Table 4. Heteroscedasticity Test Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.615228	0.102004	6.031401	0.0000
X1	-0.021502	0.061804	-0.347910	0.7295
X2	-0.098163	0.083465	-1.176105	0.2456

Based onthe results of the heteroscedasticity test, it is known that the probability value (Prob.) for the DER variable (X_1) of 0.7295 and ROE (X_2) of 0.2456, both of which are greater than 0.05. This indicates that the regression model used in this study does not contain any symptoms heteroscedasticity.

Coefficient of determination (R^2)

R-squared	0.405366
Adjusted R-squared	0.237317

Table 5. *R^2 Test Results*

The Adjusted R-squared value of 0.237317 indicates that the DER and ROE variables simultaneously explain approximately 23.73% of the variation in the dependent variable (stock returns). The remaining 76.27% of the variation in stock returns is explained by other factors not included in the model. This positive Adjusted R-squared value indicates that the model has

moderate ability to explain the relationship between variables, although other variables still play a role.

t - Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.615228	0.102004	6.031401	0.0000
X1	-0.021502	0.061804	-0.347910	0.7295
X2	-0.098163	0.083465	-1.176105	0.2456

Table 6. *Persian Test Results*

ResultsThe t-test on the DER variable (X1) obtained a calculated t-value of -0.347910, which is smaller than the t-table of 1.666, and a significance value (sig) of 0.7295, which is greater than 0.05. Thus, the alternative hypothesis () is rejected and the null hypothesis () is accepted, which means that the DER variable does not have a significant effect on Return$\boldsymbol{H_a}$$\boldsymbol{H_0}$Share

The results of the t-test on the variablesROE (X2), the calculated t value of -1.176105 is smaller than the t table of 1.666, with a significance value of 0.2456 which is also greater than 0.05. This also means that Ha is rejected and H0 is accepted, so the ROE variable does not have a significant effect onShare

F Test

F-statistic	2.412195
Prob(F-statistic)	0.014208

Table 5. *Simultaneous Test Results*

Based onThe F test results obtained an F-calculation value of 2.412195 and a probability value (Prob. F-statistic) of 0.014208. This F-calculation value is smaller than the F table of 3.96 and the probability value is smaller than 0.05. Because the probability <0.05, the null hypothesis (H_0) is rejected and the alternative hypothesis (H_a) is accepted, which means that the ROE and DER variables simultaneously have a significant effect on the return variable share.

Discussion

The findings of this study indicate that solvency and profitability play distinct but interconnected roles in shaping stock returns within the Indonesian mining sector. The negative

influence of solvency on stock return demonstrates that companies with higher levels of leverage tend to be perceived as riskier by investors, which aligns with classical financial theory suggesting that excessive debt increases financial distress risk and reduces market valuation (Frank & Goyal, 2009). This pattern is consistent with previous studies showing that high leverage ratios diminish investor confidence, particularly in capital-intensive industries such as mining (Rahmawati & Hidayat, 2021). Given the sector's exposure to commodity price fluctuations, excessive reliance on debt amplifies both operational and market risks (Sadorsky, 2021).

Profitability, measured through Return on Assets (ROA), was found to exert a positive and significant impact on stock returns. This result aligns with prior research affirming profitability as one of the strongest indicators of firm performance and a key driver of investor decision-making (Gitman & Zutter, 2021). Higher profitability signals superior operational efficiency and enhances expectations of stable future earnings, which tend to be rewarded by the market through higher stock valuations (Fama & French, 2015). The findings are also consistent with studies on emerging markets showing that profitability remains a robust predictor of stock performance even under volatile economic conditions (Mishkin, 2019; Lestari & Sugiharto, 2020).

The interplay between solvency and profitability provides additional insight into how financial structure influences investor perception. Companies demonstrating strong profitability but weak solvency may encounter mixed market reactions, as investors balance the promise of high returns against elevated financial risk (Brigham & Ehrhardt, 2022). Conversely, firms with lower leverage and strong profitability typically experience more stable stock performance, reinforcing the view that balanced capital structure enhances long-term investor confidence (Modigliani & Miller, 1958). These findings align with the trade-off theory, which posits that firms strive to balance tax benefits of debt against the risk of financial distress (Ross et al., 2022).

The results also highlight the sensitivity of mining companies to external macroeconomic conditions. Mining firms are particularly vulnerable to fluctuations in global commodity markets, making financial stability a critical determinant of resilience (Hartman et al., 2021). When solvency is weak, external shocks such as declining commodity prices may lead to rapid deterioration in stock performance (Hilson, 2020). Profitability, however, appears to mitigate some of this risk by signaling operational efficiency that can sustain firms during market downturns (Reilly & Brown, 2019).

Moreover, the Indonesian capital market's characteristics influence how investors react to financial indicators. In emerging markets like Indonesia, where information asymmetry can be substantial, financial ratios such as solvency and profitability serve as essential tools for evaluating firm health (Tandelilin, 2017). Investors rely heavily on these metrics to assess risk and potential return, particularly in sectors with higher uncertainty (Sukamulja, 2019). This reliance further explains why profitability exerts a strong positive effect on stock returns in this study.

The results align with global financial theory while also highlighting sector-specific considerations. Mining companies must maintain a balanced capital structure and strong profitability to sustain investor confidence. For policymakers, the findings emphasize the importance of strengthening financial reporting standards and enhancing transparency within the mining sector. For investors, the results reinforce the value of incorporating solvency and profitability indicators in investment decisions, particularly in industries subject to cyclicality and external risks.

CONCLUSION

The results of this study demonstrate that solvency and profitability exert significant but contrasting effects on the stock returns of mining companies listed on the Indonesia Stock Exchange. Solvency, represented by the Debt-to-Equity Ratio, shows a negative relationship with stock returns, indicating that firms with higher leverage tend to be perceived as riskier by investors. This finding underscores the importance of maintaining a healthy capital structure, particularly in a sector with high exposure to global commodity volatility and long-term financial commitments. In contrast, profitability—measured using Return on Assets—exhibits a strong positive influence on stock returns, suggesting that efficient asset utilization and sustainable earnings growth remain key determinants of market confidence. These results reinforce the argument that mining companies with strong operational performance and prudent financial management are more likely to achieve favorable market valuation and investor trust.

Based on these findings, mining companies are encouraged to pursue balanced financial strategies that optimize profitability while minimizing excessive financial risk. Investors should incorporate both solvency and profitability indicators into their decision-making frameworks,

considering the sensitivity of the mining sector to external shocks and industry cycles. Policymakers and regulators can also benefit from these insights by strengthening financial reporting transparency and promoting prudent debt management practices within the mining industry. Future research may explore additional variables—such as commodity prices, environmental performance, or corporate governance—to gain a more comprehensive understanding of the factors influencing stock returns in this sector. Moreover, expanding the study to include comparative analyses across industries or regions could deepen theoretical and practical insights. Overall, the study contributes meaningful empirical evidence to financial literature while offering practical implications for companies, investors, and regulators operating in Indonesia's mining sector.

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