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The Effect of Environmental Performance and Stock Liquidity on Stock Return in Mining Companies Listed on the Indonesia Stock Exchange

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ABSTRACT

Purpose: This study examines the partial and simultaneous effect of environmental performance and stock liquidity on stock returns in mining sector companies listed on the Indonesia Stock Exchange during the 2020–2024 period, in order to understand how both non-financial and market-based indicators influence investor behavior and equity valuation in emerging markets.

Methodology: The study adopts a quantitative, causal-comparative research design using secondary panel data. Environmental performance is measured using the PROPER rating issued by the Ministry of Environment and Forestry, while stock liquidity is proxied by Trading Volume Activity. Purposive sampling is applied, resulting in 13 mining companies with 65 firm-year observations.

Results: The findings show that environmental performance has a positive and significant effect on stock returns, indicating that better environmental management is rewarded by the market. Conversely, stock liquidity has a negative and significant effect on stock returns, suggesting that excessive trading activity may reflect noise or speculative behavior.

Conclusion: Environmental performance acts as a credible positive signal for investors, while liquidity conditions may introduce return instability in the mining sector.

Limitations: The study is limited by a relatively small number of predictors, a pooled data structure, and a sector-specific sample, which may limit the generalizability of the findings across industries and countries.

Contributions: This study contributes to the literature by extending signaling theory and stakeholder theory in the context of emerging market mining firms, while also providing empirical evidence on how non-financial environmental indicators and liquidity jointly shape stock return behavior.

Keywords: *Environmental Performance, Mining Companies, Stock Liquidity, Stock Return*

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1. Introduction

The capital market functions as a key pillar of national economic growth, acting as an intermediary that channels funds from parties with surplus capital toward parties in need of financing. Through the Indonesia Stock Exchange (IDX), companies raise funds by offering shares to the public, while investors gain an avenue to grow their wealth in exchange for bearing risk. Indonesia is regarded as one of the largest and most dynamic capital markets in Southeast Asia, and it plays a central role in the domestic economy by serving as a fundraising channel for listed firms ([Ismail, Herbenita, Desliniati, & Andriyati, 2024](#)). Although equities are inherently volatile and carry considerable risk relative to other financial instruments, this characteristic has not deterred investors from participating in the market, given the prospect of returns commensurate with the risk undertaken ([Rolando, Al-Amin, Rahmat, Zuwardi, & Izmuddin, 2024](#)).

Stock return, defined as the profit or loss an investor obtains from holding shares over a given period, continues to attract sustained scholarly attention because the determinants of return remain only partially understood ([Jannah, Rahmawati, Amiroh, & Azmi, 2024](#)). Return is shaped by a wide array of internal and external factors ranging from earnings performance and capital structure to macroeconomic conditions and market sentiment. Among the internal factors that have gained increasing prominence in recent years is corporate environmental performance. In an era that increasingly emphasizes sustainable development, companies face growing pressure not only to generate financial profit but also to manage the ecological consequences of their operations responsibly. Alongside environmental performance, stock liquidity represents another factor that investors monitor closely, since it reflects how easily a security can be bought or sold without materially disturbing its price.

The question of environmental performance carries particular weight for mining companies listed on the IDX. The extractive sector is widely recognized as one with substantial potential for environmental harm, including ecosystem degradation, water and air pollution, and social conflict surrounding mining concessions. A mining company that fails to manage these risks adequately can trigger community protest, regulatory sanction, and reputational damage that ultimately translates into losses for shareholders. Over the past decade, capital markets worldwide have witnessed a paradigm shift in which institutional investors increasingly integrate Environmental, Social, and Governance (ESG) considerations into portfolio decisions ([Kirana, Qolbi, Latifah, Ramadhan, Pangestu, & Ikaningtyas, 2025](#)). Firms that maintain strong environmental performance tend to build a favorable reputation and attract socially conscious capital, whereas firms with a poor environmental record risk facing boycotts, sanctions, and stakeholder pressure that erode financial performance and depress stock return ([Farhan, 2024](#); [Lubis et al., 2020](#)). Sustainability disclosure has likewise been shown to interact with financial outcomes in the mining sector, as evidenced by [Rahim et al. \(2023\)](#), who found that environmental components of sustainability reporting significantly influence profitability measured through return on equity in Indonesian mining firms.

At the same time, mining stocks are frequently sought after for their profit potential amid fluctuations in global commodity prices such as coal, gold, and nickel, yet this same volatility makes trading characteristics, including liquidity, an important determinant of investment attractiveness ([Ovami & Pd, 2022](#)). A liquid market lowers transaction costs and enhances fairness for both buyers and sellers, and low liquidity is frequently cited as a persistent structural issue within the IDX ([Nainggolan & Nainggolan, 2023](#)). Recent international evidence reinforces the importance of liquidity as a pricing factor. [Chung and Chuwonganant \(2023\)](#) documented how liquidity conditions shifted materially during periods of market stress, while [Quah et al. \(2021\)](#) showed that stock liquidity affects investment efficiency under conditions of financing constraint and information asymmetry. [Lee and Hooy \(2023\)](#) further demonstrated that ownership structure interacts with liquidity to shape firm-level trading outcomes in Asian emerging markets, a pattern plausibly relevant to Indonesia concentrated-ownership mining sector.

Prior studies have examined the relationship between environmental performance, stock liquidity, and stock return using a variety of research objects, variable definitions, and observation periods.

[Lubis et al. \(2020\)](#) and [Farhan \(2024\)](#) found that environmental performance positively affects firm value and stock return, while [Widya and Sumiati \(2017\)](#) reported a comparable positive association between environmental performance and stock return in a broader sample of listed firms. [Nasution et al. \(2016\)](#) demonstrated that stock liquidity significantly affects stock return in the food and beverage sector, whereas [Julkismayana and Erawati \(2024\)](#) found that trading volume activity had no significant influence on returns among banking companies, suggesting that the direction and strength of the liquidity-return relationship may be sector dependent. [Prasetyo et al. \(2025\)](#) showed that environmental performance and stock liquidity can jointly affect firm value and stock return in resource-intensive industries. Additional Indonesian evidence from the mining and energy sector, such as the ESG-oriented studies summarized in [Maharani et al. \(2024\)](#) and in the broader carbon-disclosure literature reviewed by [Mi \(2023\)](#), indicates that environmental disclosure quality and firm valuation are increasingly intertwined, although findings across studies remain mixed. Nevertheless, research that specifically tests the simultaneous effect of environmental performance and stock liquidity on stock return among mining-sector companies listed on the IDX during the 2020-2024 period remains limited, and the present study seeks to address that gap.

Building on this background, the study pursues three objectives: analyzing the effect of environmental performance on stock return, analyzing the effect of stock liquidity on stock return, and analyzing the simultaneous effect of environmental performance and stock liquidity on stock return in mining companies listed on the Indonesia Stock Exchange during the 2020-2024 period. The findings are expected to contribute theoretically to the accounting and finance literature on non-financial determinants of stock return, and practically to help investors make investment decisions that account for both sustainability performance and market-liquidity considerations when evaluating mining-sector equities.

2. Literature Review and Hypothesis/es Development

2.1 Signaling Theory

Signaling theory was introduced by [Spence \(1973\)](#) in the seminal work on job market signaling, building on [Akerlof's \(1970\)](#) earlier analysis of information asymmetry in markets characterized by unequal access to information. The theory explains that corporate insiders, who possess more information about firm quality than outside investors, have an incentive to send credible signals to the market in order to reduce information asymmetry. Positive signals sent by a company are expected to attract greater investor interest, which in turn affects stock price and stock return. In the context of the present study, environmental performance and stock liquidity can both be interpreted as signals that a company transmits to capital market participants. A favorable PROPER rating issued by the Ministry of Environment and Forestry signals a firm's commitment to environmental sustainability and social responsibility, while stock liquidity signals the degree of market interest in a given security.

2.2 Stakeholder Theory

Stakeholder theory was proposed by [Freeman \(1984\)](#), who argued that a company's long-term success depends on its ability to balance the interests of a broad set of stakeholders, including shareholders, employees, government, local communities, and the natural environment, rather than shareholders alone. In the context of mining companies, achieving a favorable PROPER rating reflects both regulatory compliance and a genuine commitment to environmental preservation, thereby strengthening a firm's social legitimacy and investor trust. Stock liquidity is likewise connected to stakeholder interests, particularly those of investors, because it reflects transparency and the overall attractiveness of a security as an investment vehicle. [Kabir and Thai \(2021\)](#) similarly argue that the financial payoff of socially responsible behavior is contingent on industry context, a proposition that is especially relevant for an environmentally sensitive sector such as mining.

2.3 Environmental Performance

Environmental performance refers to a company's achievement in managing the environmental consequences of its operations [Prasetyo et al., 2025](#). In Indonesia, corporate environmental performance is assessed through PROPER, the Corporate Performance Rating Assessment Program in Environmental Management, administered by the Ministry of Environment and Forestry.

PROPER assigns color-coded ratings with corresponding numerical scores. A Gold rating, scored 5, denotes excellent performance that consistently exceeds environmental expectations. A Green rating, scored 4, denotes environmental management that goes beyond regulatory compliance. A Blue rating, scored 3, denotes environmental management that meets minimum regulatory requirements. A Red rating, scored 2, denotes management that falls short of regulatory provisions. A Black rating, scored 1, denotes deliberate violation of environmental regulations (Regulation of the State Minister of Environment No. 5 of 2011). [Alkaraan et al. \(2022\)](#) note that environmental disclosure of this kind increasingly functions as a determinant of financial performance in the context of Industry 4.0 transformation, while [Fernando et al. \(2021\)](#) found that ESG-related scores are associated with measurable differences in firm value across global samples, lending broader cross-country support to the relevance of environmental metrics such as PROPER.

2.4 Stock Liquidity

Stock liquidity refers to the ease with which a security can be traded in the capital market without triggering a significant change in price [Amihud & Mendelson, 1986](#). An illiquid stock carries the additional risk of difficulty in resale, which tends to reduce investor interest and raise the required rate of return demanded by investors holding the security. [Wyss \(2004\)](#) identifies four dimensions of liquidity, namely trading time, tightness, depth, and resiliency, each of which captures a distinct aspect of how efficiently a market absorbs trading activity. In the present study, stock liquidity is measured using Trading Volume Activity, defined as the ratio of the number of shares traded to the number of shares outstanding during a given period. [Kornlert and Uachanachit \(2022\)](#) show that total trading volume is closely tied to the degree of information asymmetry present in a market, while [Zhang and Gregoriou \(2020\)](#) find that liquidity conditions shape the speed and completeness of post-announcement price adjustment, both of which suggest that liquidity carries meaningful information content beyond mere transaction convenience.

2.5 Stock Return

Stock return is the level of profit or loss an investor obtains from stock investment activity over a given period, comprising either a realized return that has already occurred or an expected return anticipated for the future [Jogiyanto, 2017](#). Stock return is shaped jointly by internal company factors, including financial and non-financial performance, and external factors such as macroeconomic conditions, global commodity prices, and government policy. For mining companies specifically, stock return tends to be highly volatile because it is affected both by global commodity price dynamics and by the environmental issues inherent to extractive operations [Ovami & Pd, 2022](#). [Wright and Swidler \(2023\)](#) further demonstrate that abnormal trading activity around firm-specific news is closely tied to market efficiency, underscoring that both fundamental and trading-related factors jointly shape realized returns.

2.6 Conceptual Framework

Based on the theoretical review and prior empirical studies, this research examines the effect of environmental performance and stock liquidity on stock return, both partially and simultaneously. Figure 1 depicts the conceptual framework underlying the study. The diagram shows environmental performance and stock liquidity as two independent variables positioned on the left side of the framework, each connected by a separate arrow to stock return, the dependent variable, positioned on the right side, representing the two partial hypotheses. A third arrow encompassing both independent variables jointly connects to stock return, representing the simultaneous hypothesis tested through the F-test.

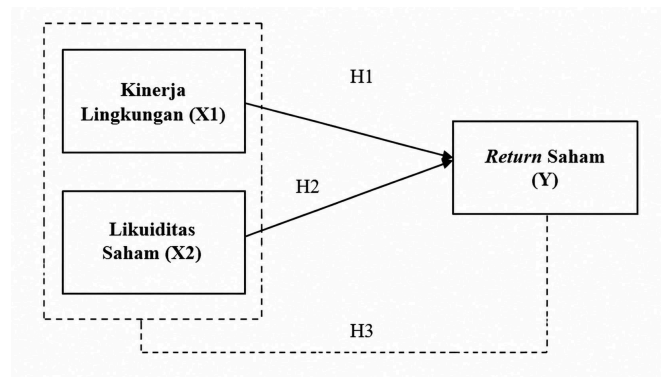


Figure 1. Conceptual framework

Figure 1 the figure illustrates the hypothesized relationships tested in this study. Environmental Performance (X_1) and Stock Liquidity (X_2) are modeled as independent variables that each exert a partial effect on Stock Return (Y), while a combined pathway captures their simultaneous effect on the dependent variable.

2.7 Hypothesis Development

Environmental performance is a non-financial indicator that reflects the extent to which a company manages the environmental consequences of its operations. Under stakeholder theory, companies are expected to attend not only to shareholder interests but also to the interests of surrounding communities, government regulators, and the natural environment. A company with strong environmental performance builds social legitimacy, cultivates a positive corporate image, and earns investor trust, a pattern that, consistent with signaling theory, the market is expected to reward because investors tend to view sustainability-conscious companies as having more favorable long-term prospects. Studies by [Lubis et al. \(2020\)](#), and [Farhan \(2024\)](#), show that environmental performance significantly affects firm value and stock return, and this pattern is echoed by the mining-sector sustainability evidence reported by [Rahim et al. \(2023\)](#). Accordingly, the first hypothesis is formulated as follows.

H_1 : Environmental performance has a significant effect on stock return

Highly liquid stocks are generally preferred by investors because liquidity reduces the risk of difficulty in reselling shares within the market. In the mining sector, which is characterized by substantial volatility stemming from fluctuations in global commodity prices, investors tend to favor liquid stocks because liquidity offers flexibility in navigating market uncertainty. [Nasution et al. \(2016\)](#), demonstrate that stock liquidity significantly affects stock return, while contrasting evidence from [Julkismayana and Erawati \(2024\)](#) indicates that the strength of this relationship can vary depending on sector and sampling period. Accordingly, the second hypothesis is formulated as follows.

H_2 : Stock liquidity has a significant effect on stock return

Stock return is fundamentally shaped by a combination of internal and external company factors operating together rather than in isolation. When a mining company demonstrates strong environmental performance while simultaneously maintaining high stock liquidity, the combination of the two characteristics is expected to reinforce investors' positive perception of the firm, consistent with both stakeholder theory and signaling theory. [Prasetyo et al. \(2025\)](#), and [Mahendra \(2024\)](#) support the view that non-financial factors such as environmental performance, combined with market factors such as stock liquidity, can jointly affect firm value and stock return. Accordingly, the third hypothesis is formulated as follows.

H_3 : Environmental performance and stock liquidity simultaneously have a significant effect on stock return

3. Methodology

3.1 Research Design and Data

This study employs a quantitative, causal-comparative design intended to test the effect of environmental performance and stock liquidity on stock return in mining companies listed on the Indonesia Stock Exchange during the 2020-2024 period. The data used are secondary data obtained from companies' annual reports and sustainability reports, official IDX publications, and the results of the Corporate Performance Rating Assessment Program issued by the Ministry of Environment and Forestry.

3.2 Population and Sample

The population comprises all mining-sector companies listed on the IDX during the 2020-2024 period. The sample was determined through purposive sampling based on three criteria. The company had to be consistently listed on the IDX throughout 2020-2024. The company had to consistently participate in the Ministry of Environment and Forestry PROPER program, with results disclosed in its sustainability report throughout that period. The company had to consistently publish annual financial statements throughout the study period. Applying these criteria to the initial population excluded four companies that were not consistently listed on the IDX, fifty-two companies that did not consistently participate in PROPER, and two companies that did not consistently publish financial statements, yielding thirteen companies that satisfied all sample criteria, as presented in Table 1.

Table 1. List of selected sample companies

No.	Code	Company Name
1	ADRO	PT Adaro Energy Tbk
2	PTBA	PT Bukit Asam Tbk
3	MEDC	PT Medco Energi Internasional Tbk
4	CTBN	PT Citra Tubindo Tbk
5	GDST	PT Gunawan Dianjaya Steel Tbk
6	GGRP	PT Gunung Raja Paksi Tbk
7	KRAS	PT Krakatau Steel (Persero) Tbk
8	ANTM	PT Aneka Tambang Tbk
9	IFSH	PT Ifishdeco Tbk
10	INCO	PT Vale Indonesia Tbk
11	INAI	PT Indal Aluminium Industry Tbk
12	TINS	PT Timah Tbk
13	MBAP	PT Mitrabara Adiperdana Tbk

Table 1 lists the thirteen mining-related companies that met the purposive sampling criteria, together with their IDX ticker codes and full corporate names. These firms span coal mining, base metals, and metal processing sub-sectors, providing reasonable within-sector diversity while remaining consistent with the study's focus on extractive and metal-related industries. With thirteen sample companies observed over a five-year period from 2020 to 2024, the study yields sixty-five pooled cross-sectional observations used in the multiple linear regression analysis.

3.3 Operational Definition of Variables

Table 2. Operational definition of variables

Variable	Definition	Indicator/Formula	Scale
Stock Return (Y)	The level of profit an investor obtains from holding shares over a given period Jogiyanto, 2017	$R_i = (P_t - P_{t-1}) / P_{t-1}$	Ratio
Environmental Performance (X_1)	A company's achievement in managing environmental impact, measured through the PROPER rating Prasetyo et al., 2025	PROPER score: Gold=5, Green=4, Blue=3, Red=2, Black=1	Interval
Stock Liquidity (X_2)	The ease with which a stock is traded in the market without significantly affecting its price Amihud & Mendelson, 1986	$TVA = \text{Shares traded} / \text{Shares outstanding}$	Ratio

Table 2 summarizes the operational definitions, formulas, and measurement scales of the three variables examined in this study. Stock return is computed as the percentage change in closing share price between two consecutive periods, environmental performance is captured through the ordinal-to-interval PROPER color scoring scheme, and stock liquidity is captured through Trading Volume Activity, the proportion of outstanding shares that changed hands during the period under observation.

3.4 Data Analysis Technique

Data analysis was conducted using a quantitative approach with multiple linear regression estimated in SPSS software, based on the following general equation.

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e \quad (1)$$

Formula 1 show in this equation, Y denotes stock return, α denotes the constant term, β_1 and β_2 denote the regression coefficients of environmental performance (X_1) and stock liquidity (X_2) respectively, and e denotes the error term capturing variation in stock return not explained by the model. Prior to hypothesis testing, the model was evaluated using classical assumption tests comprising a normality test using the Kolmogorov-Smirnov statistic supplemented by a Monte Carlo simulation, a histogram, and a normal probability plot; a multicollinearity test based on Tolerance and Variance Inflation Factor values; an autocorrelation test using the Runs Test; and a heteroscedasticity test using the Glejser test together with a scatterplot. Hypothesis testing was then carried out through a partial test (t-test), a simultaneous test (F-test), and a coefficient of determination test (R-squared), all evaluated at a significance level of alpha equal to 0.05 ([Ghozali, 2021](#)).

4. Results and Discussion

4.1 Descriptive Statistics

Descriptive statistical analysis provides a general overview of the research data through the minimum, maximum, mean, and standard deviation values calculated across the sixty-five observations, as presented in Table 3.

Table 3. Descriptive statistics

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Environmental Performance	64	1.20	5.64	3.7344	1.07092
Stock Liquidity	64	-1.21	23,266.75	1,141.3055	4,127.15578
Stock Return	64	-0.15	0.19	0.0434	0.08836

Table 3 reports the descriptive profile of the three research variables. The Environmental Performance variable has a mean of 3.7344 with a standard deviation of 1.07092, indicating that, on average, the sample companies' environmental performance falls into a moderately high category approaching the boundary between a Blue and a Green PROPER rating. The Stock Liquidity variable shows a mean of 1,141.3055 accompanied by a very large standard deviation of 4,127.15578, indicating substantial dispersion in trading activity across the sample companies, likely reflecting differences in free float and investor attention among the thirteen firms. The Stock Return variable has a mean of 0.0434 with a comparatively small standard deviation of 0.08836, indicating that stock-return observations tend to cluster relatively close to the mean rather than being widely dispersed.

4.2 Classical Assumption Tests

The normality test using the One-Sample Kolmogorov-Smirnov Test yields a test statistic of 0.114 with a significance level, using Lilliefors Significance Correction, of 0.039, which conventionally falls below the 0.05 threshold and would suggest that the residuals are not normally distributed. A supplementary Monte Carlo simulation, considered more robust for moderate sample sizes, yields a significance value of 0.359 with a 99 percent confidence interval spanning from 0.347 to 0.371, a value above 0.05 suggesting that the residuals are in fact normally distributed. Visual evidence supports this latter conclusion. Figure 2 presents the residual histogram, which appears symmetrically bell-shaped without pronounced skewness, and Figure 3 presents the normal probability plot, in which the plotted data points closely track the diagonal reference line.

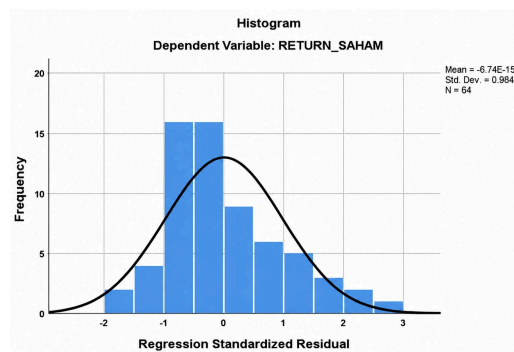


Figure 2. Histogram of the normality test of residuals

Figure 2 show the histogram displays the frequency distribution of standardized regression residuals overlaid with a normal curve, illustrating a roughly bell-shaped and approximately symmetric pattern consistent with the normality assumption.

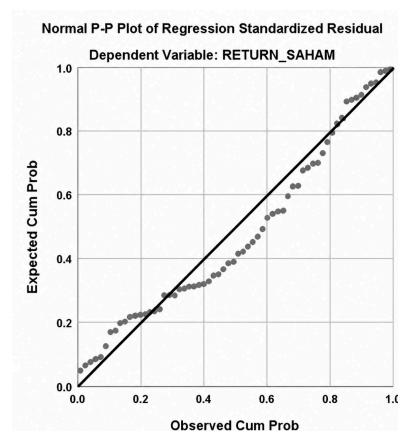


Figure 3. Normal probability plot (P-P Plot) of residuals

Figure 3 show the plot compares the observed cumulative probability of the standardized residuals against the expected cumulative probability under normality; the close alignment of the plotted

points with the 45-degree diagonal line indicates that the residual distribution does not depart substantially from normality.

Taken together, the Monte Carlo evidence and the two graphical diagnostics indicate that the regression model reasonably satisfies the normality assumption, although the discrepancy with the conventional Kolmogorov-Smirnov result should be acknowledged as a caveat for interpretation. The multicollinearity test shows that both independent variables have a Tolerance value of 0.978, above the 0.10 threshold, and a Variance Inflation Factor value of 1.023, below the conventional threshold of 10, indicating that the regression model is free of problematic multicollinearity. The autocorrelation test using the Runs Test yields a Z value of -0.252 with an asymptotic two-tailed significance of 0.801, above 0.05, indicating that the residuals are randomly distributed and that the model is free of first-order autocorrelation. The heteroscedasticity test, conducted through the Glejser test together with a scatterplot shown in Figure 4, indicates that the residual data points are scattered randomly above and below the zero axis without forming any discernible funnel or cone pattern, and the independent variables' significance values in the Glejser regression exceed 0.05, indicating that the model is homoscedastic.

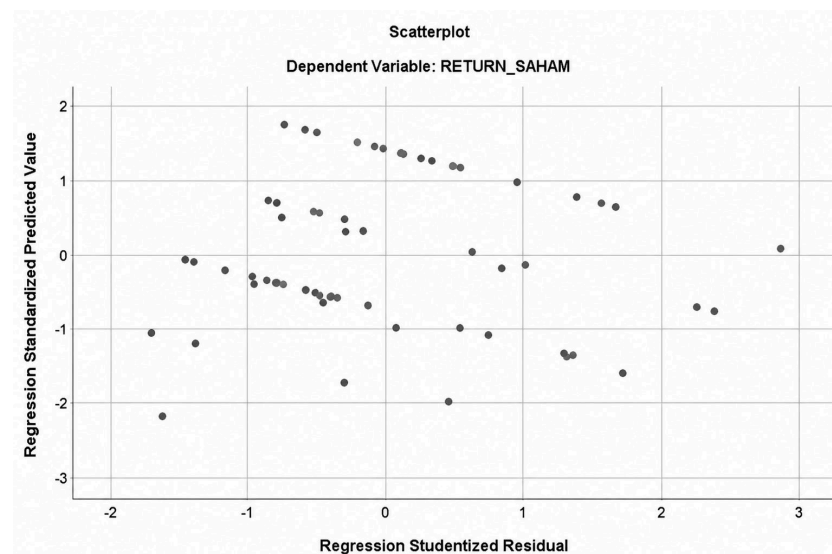


Figure 4. Scatterplot of the heteroscedasticity test

Figure 4 show the scatterplot displays standardized predicted values on the horizontal axis against standardized residuals on the vertical axis; the absence of a systematic funnel-shaped pattern in the point cloud supports the conclusion that residual variance is constant across the range of fitted values. Overall, the regression model satisfies the classical assumptions required for ordinary least squares estimation and is therefore suitable for hypothesis testing.

4.3 Multiple Linear Regression Results and Hypothesis Testing

Table 4. Multiple linear regression and partial test (t) results

Model	B	Std. Error	Beta	t	Sig.
(Constant)	-0.241	0.002	-	-140.912	0.000
Environmental Performance (X_1)	0.078	0.000	0.941	178.480	0.000
Stock Liquidity (X_2)	-4.777×10^{-6}	0.000	-0.223	-42.304	0.000

Table 4 reports the unstandardized coefficients (B), standard errors, standardized coefficients (Beta), t-statistics, and significance levels obtained from the multiple linear regression model. Based on the coefficients reported in Table 4, the following regression equation is obtained.

$$\text{StockReturn} = -0.241 + 0.078(\text{EnvironmentalPerformance}) - 0.000004777(\text{StockLiquidity}) + e \quad (2)$$

Formula 2 show the constant of -0.241 indicates that, if environmental performance and stock liquidity were both equal to zero, stock return would be predicted at -0.241. The regression coefficient for Environmental Performance of 0.078, with a significance of 0.000 below the 0.05 threshold and a t-value of 178.480 exceeding the critical t-table value of 1.999624, indicates that environmental performance has a positive and significant effect on stock return; H_1 is therefore accepted. The regression coefficient for Stock Liquidity of -4.777×10^{-6} , with a significance of 0.000 and a t-value of -42.304, indicates that stock liquidity has a negative and significant effect on stock return; H_2 is therefore accepted.

Table 5. Simultaneous test (F) and coefficient of determination (R-squared) results

Model	Sum of Squares	df	Mean Square	F	Sig.	R-squared	Adj. R-squared
Regression	0.491	2	0.246	18,351.289	0.000	0.998	0.998
Residual	0.001	61	0.000	-	-	-	-
Total	0.492	63	-	-	-	-	-

Table 5 presents the analysis of variance underlying the simultaneous F-test, along with the resulting coefficient of determination. The simultaneous test yields an F-value of 18,351.289 with a significance of 0.000, indicating that environmental performance and stock liquidity jointly have a significant effect on stock return; H_3 is therefore accepted. The coefficient of determination of 0.998 indicates that 99.8% of the variation in stock return can be explained by the two independent variables included in the model, while the remaining 0.2% is attributable to factors outside the model, such as macroeconomic conditions and global commodity prices.

An R-squared value of 0.998 is exceptionally high for a two-predictor model estimated on sixty-five observations, and this value therefore warrants careful scrutiny during peer review. Several explanations may account for this result. The two independent variables are measured on markedly different scales, an interval scale ranging from 1 to 5 for Environmental Performance versus a ratio scale reaching into the tens of thousands for Stock Liquidity, which can inflate apparent explanatory power in unstandardized regression output. The pooled cross-sectional nature of the data does not explicitly control for firm fixed effects, which may allow persistent between-firm differences to masquerade as explanatory power. A mechanical relationship between the constituent components of the variables cannot be entirely ruled out. Future researchers are encouraged to conduct additional robustness checks, for example by standardizing the variables, examining the correlation matrix among the independent and dependent variables, and applying panel-data approaches with fixed effects, in order to confirm that the model's explanatory power is not driven by such technical artifacts.

4.4 Discussion

Environmental Performance has a positive and significant effect on Stock Return. This result is consistent with signaling theory, whereby strong environmental performance, reflected in a high PROPER score, functions as a positive signal to investors that a company is committed to sustainability, sound risk management, and stable long-term prospects. The finding is also consistent with stakeholder theory, since disclosure of environmental performance through PROPER allows external stakeholders to assess a company's social responsibility, thereby enhancing its legitimacy and market trust. This result aligns with the studies of [Lubis et al. \(2020\)](#), [Farhan \(2024\)](#), and [Widya and Sumiati \(2017\)](#), which found a positive effect of environmental performance on firm value and stock return, and it is broadly consistent with the mining-sector sustainability evidence reported by [Rahim et al. \(2023\)](#) and with the cross-country ESG findings of

[Fernando et al. \(2021\)](#). The result contrasts, however, with the findings of [Machdar \(2017\)](#) and [Alsahlawi et al. \(2021\)](#), who reported a negative effect of environmental or ESG disclosure on stock return in their respective samples. This divergence suggests that the market's response to environmental information is context dependent, varying with capital-market characteristics, industry sector, and investor preferences across different countries. Similarly, carbon-disclosure evidence summarized by [Maharani et al. \(2024\)](#) and [Mi \(2023\)](#) suggests that the financial payoff to environmental transparency can differ depending on regulatory maturity and investor sophistication, a nuance that future Indonesian mining-sector research should continue to probe.

Stock Liquidity has a negative and significant effect on Stock Return, meaning that during the study period, higher stock liquidity among mining companies was associated with lower stock return. This finding can be explained by capital-market dynamics in which high liquidity does not always reflect a company's fundamental quality but may instead be driven by speculative trading activity, which can make stock prices less stable and prompt investors to demand different compensation for the risk they bear. This result is consistent with [Mahendra \(2024\)](#), who asserts that stock liquidity can suppress return when the market is affected by external shocks, and it echoes the finding of [Julkismayana and Erawati \(2024\)](#) that trading volume activity does not always translate into higher returns across Indonesian sectors. The finding contrasts, however, with [Nasution et al. \(2016\)](#), who found a positive effect of liquidity on stock return in the manufacturing sector, suggesting that the direction of the liquidity-return relationship can vary meaningfully across industries. International evidence adds further nuance. [Quah et al. \(2021\)](#) found that liquidity interacts with financing constraints to shape investment efficiency, while [Lee and Hooy \(2023\)](#) showed that ownership concentration moderates the liquidity-performance relationship in Asian markets, both of which imply that the negative liquidity coefficient documented here may partly reflect the concentrated ownership structures characteristic of Indonesian mining firms rather than a universal liquidity-return relationship.

Environmental Performance and Stock Liquidity jointly have a significant effect on Stock Return. This finding confirms that stock return in mining companies is not determined solely by conventional financial factors but is also shaped by the non-financial factor of environmental performance together with the trading characteristic of liquidity. This result is consistent with [Prasetyo et al. \(2025\)](#), who found that mining companies' environmental performance, when combined with market factors such as stock liquidity, jointly affects firm value and stock return. It is also broadly consistent with [Alkaraan et al. \(2022\)](#), who found that environmental and governance disclosure interacts with broader firm transformation processes to shape financial outcomes. Practically, this finding suggests that investors in the mining sector need to consider environmental sustainability and stock-trading characteristics together when formulating investment strategies, rather than treating either dimension in isolation.

5. Conclusions

5.1 Conclusion

This study aimed to analyze the effect of environmental performance and stock liquidity on stock return in mining companies listed on the Indonesia Stock Exchange during the 2020-2024 period. Based on the multiple linear regression analysis of sixty-five observations drawn from thirteen sample companies, several conclusions can be drawn. Environmental performance, proxied by the PROPER score, has a positive and significant effect on stock return, indicating that companies with higher PROPER ratings tend to be perceived favorably by investors as a signal of business sustainability and sound risk management. Stock liquidity, measured through Trading Volume Activity, has a negative and significant effect on stock return, indicating that during the study period, high liquidity in the mining sector was associated with price volatility that affected investors' return expectations. Environmental performance and stock liquidity jointly have a significant effect on stock return, confirming that stock return in this sector is shaped by a combination of non-financial factors related to environmental sustainability and market factors related to liquidity.

5.2 Research Limitations

This study has several limitations that warrant attention in future research. The model includes only two independent variables and is therefore potentially subject to omitted variable bias; the very high coefficient of determination should be interpreted with caution and tested further for robustness, for example through variable standardization or a panel-data approach incorporating firm and time fixed effects. The data are pooled cross-sectionally over five years without explicitly controlling for heterogeneity across companies or across time periods. The sample is limited to thirteen mining-sector companies that satisfied the purposive sampling criteria, so generalizing the results to all mining companies or to other industry sectors should be undertaken cautiously.

5.3 Suggestions and Directions for Future Research

Future research is encouraged to expand the scope of this study by incorporating additional financial and non-financial variables such as profitability ratios, corporate governance mechanisms, ESG disclosure quality, and macroeconomic factors to provide a more comprehensive explanation of stock return behavior. Subsequent studies should also employ more advanced econometric techniques, such as dynamic panel data models or nonlinear approaches, to better capture potential endogeneity issues and complex relationships among variables. In addition, future research may consider cross-sector or cross-country comparisons to improve the generalizability of findings beyond the mining industry in Indonesia. It is also recommended that future studies extend the observation period and include high-frequency data to capture short-term market reactions to environmental performance disclosures. Furthermore, integrating behavioral finance perspectives could provide deeper insights into how investor perception and sentiment mediate the relationship between environmental performance, liquidity, and stock returns in emerging markets.

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References

- Akerlof, G. A. (1970). The market for “lemons”: Quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, 84(3), 488-500..
- Alkaraan, F., Albitar, K., Hussainey, K., & Venkatesh, V. G. (2022). Corporate transformation toward Industry 4.0 and financial performance: The influence of environmental, social, and governance (ESG). *Technological Forecasting and Social Change*, 175, 121423. <https://doi.org/10.1016/j.techfore.2021.121423>
- Alsahlawi, A. M., Chebbi, K., & Ammer, M. A. (2021). The impact of environmental sustainability disclosure on stock return of Saudi listed firms: The moderating role of financial constraints. *International Journal of Financial Studies*, 9(1), 1-17. <https://doi.org/10.3390/ijfs9010004>
- Amihud, Y., & Mendelson, H. (1986). Asset pricing and the bid-ask spread. *Journal of Financial Economics*, 17(2), 223-249..
- Chung, K. H., & Chuwonganant, C. (2023). COVID-19 pandemic and the stock market: Liquidity, price, efficiency, and trading. *Journal of Financial Markets*, 64, 100803. <https://doi.org/10.1016/j.finmar.2023.100803>
- Farhan, M. (2024). Keseimbangan risiko dan imbal hasil dalam strategi investasi berkelanjutan: Pendekatan integratif terhadap faktor lingkungan, sosial, dan tata kelola perusahaan (ESG) [Balancing risk and return in sustainable investment strategy: An integrative approach to environmental, social, and governance factors]. *Currency: Jurnal Ekonomi dan Perbankan Syariah*, 2(2), 243-264. <https://doi.org/10.32806/p53yhw31>
- Fernando, G. D., Jaffar, A., & Seah, M. (2021). Do ESG scores affect firm value? Evidence from global firms. *Journal of Risk and Financial Management*, 14(7), 314. <https://doi.org/10.3390/jrfm14070314>

- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*.
- Ghozali, I. (2021). *Aplikasi analisis multivariate dengan program IBM SPSS [Multivariate analysis applications with the IBM SPSS program]*.
- Ismail, A., Herbenita, H., Desliniati, N., & Andriyati, Y. (2024). Mengenal investasi di pasar modal: Melalui Sekolah Pasar Modal Bursa Efek Indonesia [Understanding capital market investment: Through the Indonesia Stock Exchange Capital Market School]. *Asadel Liamsindo Teknologi*.
- Jannah, M., Rahmawati, J., Amiroh, M., & Azmi, Z. (2024). Return saham: Analisis faktor yang mempengaruhinya pada perusahaan manufaktur di Bursa Efek Indonesia [Stock return: An analysis of its influencing factors in manufacturing companies on the Indonesia Stock Exchange]. *Jurnal Ilmiah Multidisipin*, 2(1), 35-42..
- Jogiyanto, H. (2017). *Teori portofolio dan analisis investasi [Portfolio theory and investment analysis] (11th ed.)*.
- Julkismayana, R., & Erawati, N. M. A. (2024). The effect of trading volume activity, profitability and solvability on stock returns: (Study on banking companies listed on the Indonesia Stock Exchange for the period 2019-2022). *International Journal of Economics, Commerce, and Management*, 2(1), 1-20. <https://doi.org/10.62951/ijecm.v2i1.349>
- Kabir, M. H., & Thai, M. T. T. (2021). Social responsibility and financial performance: The moderating role of industry context. *Journal of Cleaner Production*, 297, 126654. <https://doi.org/10.1016/j.jclepro.2021.126654>
- Kirana, A. E. W., Qolbi, I., Latifah, A., Kusuma S, I., Puri R., N., Ramadhan, B. Z., Pangestu, B. A., & Ikaningtyas, M. (2025). Penilaian investasi dalam perencanaan bisnis: Menimbang aspek non-finansial sebagai faktor strategis [Investment appraisal in business planning: Weighing non-financial aspects as a strategic factor]. *Journal of Economics, Assets, and Evaluation*, 2(4), 9. <https://doi.org/10.47134/jeae.v2i4.776>
- Kornlert, P., & Uachanachit, D. (2022). The factors influencing on information asymmetry estimate by total trading volume. *Cuadernos de Economia*, 45(128), 78-86..
- Lee, A. X., & Hooy, C. W. (2023). Stock liquidity and state ownership: Evidence from the banking industry of selected Asian emerging markets. *Asian Journal of Business and Accounting*, 16(1), 1-30. <https://doi.org/10.22452/ajba.vol16no1.1>
- Lubis, T. A., Yuliusman, Fazri, A., Yohanes, R. A., & Ningsih, M. (2020). *Menggagas masa depan: Meningkatkan nilai perusahaan dengan keuangan hijau dan kinerja lingkungan [Envisioning the future: Enhancing firm value through green finance and environmental performance]*.
- Machdar, N. M. (2017). Corporate financial performance, corporate environmental performance, corporate social performance and stock return. *Jurnal Manajemen dan Kewirausahaan*, 19(2), 118-123. <https://doi.org/10.9744/jmk.19.2.118-124>
- Maharani, D., Puspita, I., Suhaimah, K., & Saadah, K. (2024). Carbon emissions disclosure and firm value: A study of firms in Indonesia. *International Journal of Academe and Industry Research*, 5(3), 1-22. <https://doi.org/10.53378/ijair.353078>
- Mahendra, G. (2024). Strategi sukses bermain saham: Rahasia meraih profit tinggi di pasar modal secara akurat [Successful stock-trading strategy: The secret to achieving high profit in the capital market accurately]. *Anak Hebat Indonesia*.
- Mi, J. (2023). Green investment and sustainable business development: Risks and opportunities for China. *Polish Journal of Environmental Studies*, 32(6), 5273-5282. <https://doi.org/10.15244/pjoes/168905>

- Nainggolan, R., & Nainggolan, R. P. (2023). Trading volume activity surrounding earnings releases: Evidence from Indonesia. *JASF: Journal of Accounting and Strategic Finance*, 6(2), 192-211. <https://doi.org/10.33005/jasf.v6i2.402>
- Nasution, L. Z., Sulisty, S., & Halim, A. (2016). Pengaruh volume perdagangan saham, frekuensi perdagangan saham, volatilitas harga saham, dan kapitalisasi pasar terhadap return saham perusahaan makanan dan minuman yang terdaftar di Bursa Efek Indonesia [The effect of trading volume, trading frequency, price volatility, and market capitalization on the stock return of food and beverage companies listed on the Indonesia Stock Exchange]. *Jurnal Riset Mahasiswa Akuntansi*, 4(2), ..
- Ovami, D. C., & Pd, S. (2022). Pasar modal di era revolusi investasi 4.0 [The capital market in the era of the 4.0 investment revolution] (Vol. 1). *UMSU Press*.
- Prasetyo, M. H., Baderan, D. W. K., & Hamidu, M. S. (2025). Dampak kerusakan lingkungan akibat eksploitasi sumber daya mineral dari kegiatan pertambangan [The impact of environmental damage from mineral resource exploitation in mining activities]. *Hidroponik: Jurnal Ilmu Pertanian dan Teknologi dalam Ilmu Tanaman*, 2(2), 1-11. <https://doi.org/10.62951/hidroponik.v2i2.328>
- Quah, H., Haman, J., & Naidu, D. (2021). The effect of stock liquidity on investment efficiency under financing constraints and asymmetric information: Evidence from the United States. *Accounting & Finance*, 61, 2109-2150. <https://doi.org/10.1111/acfi.12656>
- Rahim, S., Safitra, H., & Putra, A. H. P. K. (2023). Sustainability report and financial performance: Evidence from mining companies in Indonesia. *International Journal of Energy Economics and Policy*, 14(1), 673-685. <https://doi.org/10.32479/ijeep.14994>
- Rolando, B., Al-Amin, A., Rahmat, R., Zuwardi, Z., & Izmuddin, I. (2024). Weighing the benefits and disadvantages of stock and crypto investments for Indonesian market participants. *COSMOS: Jurnal Ilmu Pendidikan, Ekonomi dan Teknologi*, 1(6), 546-559..
- Spence, M. (1973). Job market signaling. *Quarterly Journal of Economics*, 87(3), 355-374..
- Widya, D. H., & Sumiati, A. (2017). Pengaruh kinerja lingkungan terhadap return saham [The effect of environmental performance on stock return]. *Wahana Akuntansi*, 9(2), 171-189..
- Wright, C., & Swidler, S. (2023). Abnormal trading volume, news and market efficiency: Evidence from the Jamaica Stock Exchange. *Research in International Business and Finance*, 64, 101804. <https://doi.org/10.1016/j.ribaf.2022.101804>
- Wyss, R. (2004). *Measuring and predicting liquidity in the stock market (Doctoral dissertation)* (Doctoral dissertation).
- Zhang, S., & Gregoriou, A. (2020). Post earnings announcement drift, liquidity and zero leverage firms: Evidence from the UK stock market. *Journal of Business Research*, 116, 13-26. <https://doi.org/10.1016/j.jbusres.2020.05.005>