

The Effect of CSR Disclosure on the Financial Performance of Mining Companies in the IDX-IC Classification

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ABSTRACT

The mining industry faces high transparency demands because its operational activities are directly related to the use of natural resources and have social and environmental risks. This study aims to examine the effect of Corporate Social Responsibility (CSR) disclosure on financial performance proxied by Return on Assets (ROA) and Return on Equity (ROE). The research uses a quantitative approach with secondary data obtained from the annual reports, sustainability reports, and financial statements of mining companies in the IDX-IC classification for the period 2020–2024. The sample was determined through purposive sampling and produced 30 companies or 150 company–year observations. CSR disclosure was measured using content analysis based on 117 items of the GRI Standards 2021. The results of the multivariate test showed that CSR disclosure had a significant effect on financial performance as measured through ROA and ROE in a single multivariate model. In the testing of each proxy, CSR disclosure had a positive and significant effect on ROA and ROE. These findings show that the wider the CSR disclosure, the better the tendency of the mining company's financial performance, both in asset utilization and return on equity.

Keywords: CSR, IDX-IC, financial performance, mining, ROA and ROE

1. Introduction

The mining industry has a strategic role in the Indonesian economy because it supports the supply of industrial raw materials, state revenue, labor absorption, and investment activities. The mining and quarrying subsector contributes around IDR 2,198 trillion or 10.5% to Indonesia's Gross Domestic Product in 2023. The magnitude of this contribution shows that the sustainability and financial performance of mining companies are relevant to be studied.¹

On the other hand, mining activities are directly related to the use of natural resources and can cause significant social and environmental impacts. Coal mining activities can trigger air and water pollution, topographic changes, land conflicts, and changes in people's livelihoods (Hidayah & Wijaya, 2022). Increased deforestation and decreased environmental welfare of the community are also found in nickel mining in Sulawesi (Lo et al., 2024), while tin mining in Bangka Belitung is associated with ecosystem damage, habitat loss, biodiversity decline, and ecosystem fragmentation (Pratiwi et al., 2025).

¹ Ministry of Energy and Mineral Resources of the Republic of Indonesia, "Mineral and Mineral Contribution to GDP in 2023 Reaches IDR 2,198 Trillion," November 26, 2024, official website of the Ministry of Energy and Mineral Resources

This risk is also seen in the issue of post-mining reclamation. The former coal mine land in South Sempaja, Samarinda, has reportedly been neglected since 2011 and poses a threat to public safety.² A similar problem occurred again in North Samarinda in September 2025 when a resident died after drowning in a pit of a former coal mine that had technically been completed.³ The 2025 event is used as an actual context regarding the social and environmental risks of the mining industry.

The characteristics of mining cause companies to face high demands for transparency and accountability. Mining activities can have a significant impact on the environment, society, and workers, requiring consistent and detailed reporting (Global Reporting Initiative, 2024). These impacts can occur from exploration, construction, operation, closure, to post-closure (International Finance Corporation, 2007). Transparency and accountability are also global standards for the oil, gas, and mining sectors (Extractive Industries Transparency Initiative, 2023).

This condition makes *Corporate Social Responsibility* (CSR) important for mining companies. CSR reflects a company's responsibility for the economic, social, and environmental impacts arising from its operational activities (International Organization for Standardization, 2010). The implementation of CSR needs to be accompanied by adequate disclosure so that it can be assessed by investors, the community, the government, and other stakeholders. The obligation to prepare sustainability reports for issuers and public companies emphasizes the importance of transparent disclosure of economic, social, and environmental aspects.⁴

Although sustainability reporting obligations have been put in place, the level of CSR disclosure in mining companies is still uneven. The average CSR disclosure index of coal mining companies for the 2017-2019 period was recorded at 26.06%, with the lowest value of 5.49% and the highest of 72.53% (Hidayah & Wijaya, 2022). These differences show that companies that face relatively similar social and environmental risks do not yet have the same level of CSR transparency.

² Ringga Haryo Handoko, "Reclamation and Post-Mining in Mineral and Coal Mining," *Legal Paper of UJDIH BPK Representative of West Sulawesi Province*, 2024, p. 6

³ Ahmad Rifandi, "East Kalimantan Energy and Mineral Resources Office Urges Closure of Mine Pit After Residents Died on Friday," *ANTARA News East Kalimantan*, September 14, 2025

⁴ Financial Services Authority, *Financial Services Authority Regulation Number 51/POJK.03/2017 concerning the Implementation of Sustainable Finance for Financial Services Institutions, Issuers, and Public Companies* (Jakarta: Financial Services Authority, 2017)

The core of the research problem lies in the gap between the high social and environmental impacts of mining, the obligation to deliver sustainability information, and the varying levels of CSR disclosure between companies. In addition, it is uncertain whether broader CSR disclosure is actually related to improving a company's ability to generate profits. Therefore, CSR disclosure needs to be examined not only in terms of compliance, but also in terms of its relationship with financial performance.

CSR disclosures can explain how companies manage social, environmental, and economic risks. The information has the potential to improve reputation, strengthen relationships with stakeholders, and reduce information asymmetry between management and investors. As many as 71% of investors agree that companies need to integrate ESG or sustainability directly into the company's strategy, demonstrating the importance of sustainability information in assessing the company's strategy, governance, risk, and prospects.⁵

The relationship between CSR disclosure and financial performance can be explained through stakeholder theory. The sustainability of a company is not only determined by the interests of shareholders, but also by the company's ability to manage relationships with parties that influence and are influenced by its activities (Freeman, 1984). For mining companies, good relationships with the community, government, labor, investors, and other stakeholders can reduce conflicts and maintain smooth operations.

Agency theory also explains that the separation between capital owners and management can lead to information asymmetry (Jensen & Meckling, 1976). CSR disclosures provide information on how management manages social, environmental, and business sustainability risks. Such transparency can help investors assess the quality of the company's management and its financial performance prospects.

The financial performance in this study is proxied by *Return on Assets* (ROA) and *Return on Equity* (ROE). ROA measures a company's ability to generate profits through the utilization of total assets, while ROE measures a company's ability to generate profits based on shareholder equity. The use of both proxies provides an overview of performance in terms of the effectiveness of asset use and the rate of return on shareholder capital.

⁵ PricewaterhouseCoopers, "PwC's Global Investor Survey 2024," December 4, 2024. The survey was conducted among 345 investors and analysts from 24 countries and regions in September 2024

The results of previous research still show inconsistencies. CSR disclosure was found to have a positive effect on the financial performance of mining companies in Indonesia (Husnah & Fahlevi, 2023). Significant influence was also found on the ROE of mining companies (Gunawan & Yuanita, 2018) and against the ROA of mining sector companies (Dhirayoga & Aminah, 2025).

On the other hand, CSR disclosure was found to have no significant effect on the ROA or ROE of coal mining companies (Hidayah & Wijaya, 2022) and mining companies listed on the Indonesia Stock Exchange (Radiman, 2019). In the oil and gas subsector, CSR disclosure has a significant effect on ROA, but not on ROE (Lestari & Zulkifli, 2023). These differences suggest that the influence of CSR disclosure on financial performance has not resulted in uniform empirical conclusions.

The research object does not cover all companies in the *Energy* and *Basic Materials* sectors, but is limited to *the Coal Production, Oil & Gas Production & Refinery*, and *Metals & Minerals* groups. Based on the IDX-IC, the grouping of companies is based on the main goods or services and the largest source of income. The selected classification is directly related to the exploration, production, mining, refining, and/or processing of mining resources, so that it is more appropriate and comparable to the focus of the research.⁶

The 2020–2024 period was chosen to provide a more up-to-date five-year picture and include the development of the implementation of sustainability reports in public companies. CSR disclosure is measured using the GRI Standards 2021 checklist of 117 items so that assessments can be carried out consistently between companies and between years. The companies sampled were limited to companies whose sustainability reports refer to the Global Reporting Initiative (GRI) framework. If the company is still using the previous version of GRI, the report can still be used as long as it explicitly refers to the GRI. Furthermore, the information disclosed was mapped into 117 GRI Standards 2021 indicators used in the research, with a score of 1 if the item was disclosed and 0 if it was not disclosed.

This study replicates research on coal mining companies for the period 2017–2019 that use GRI G4 (Hidayah & Wijaya, 2022). The differences in the research lie in the expansion of objects based on the IDX-IC classification, the use of the 2020–2024 period, the measurement of CSR with the GRI Standards 2021, and the use of ROA and ROE in multivariate regression. Based on

⁶ PT Indonesia Stock Exchange, *IDX Industrial Classification Guidelines Version 1.1*, IDX Announcement Attachment Number Peng-00007/IDX. POP/01-2021 (Jakarta: PT Indonesia Stock Exchange, January 2021)

this description, this study aims to examine the effect of Corporate Social Responsibility disclosure on the financial performance of mining companies in the IDX-IC classification listed on the Indonesia Stock Exchange in 2020–2024.

2. Literature Review

Stakeholder Theory

Stakeholder theory explains that the sustainability of the company is not only determined by shareholders, but also by parties who influence and are influenced by the company's activities (Freeman, 1984). In the context of mining, stakeholders include the surrounding community, government, labor, investors, suppliers, customers, and the environment affected by resource exploration, production, and processing activities. Therefore, companies need to consider the interests of stakeholders in carrying out operational activities and maintaining the sustainability of their business.

CSR disclosure is a company's communication medium to convey economic, social, and environmental responsibility. Such transparency can increase trust, strengthen reputation, and reduce potential conflicts that disrupt operational activities. A good relationship with stakeholders further has the potential to support the effectiveness of asset use and the company's ability to generate returns on equity.

This view is supported by the finding that CSR has a positive effect on the financial performance of mining companies in Indonesia (Husnah & Fahlevi, 2023). The positive influence of CSR on profitability also suggests that CSR can be part of a company's long-term business strategy (Saeed et al., 2023). Thus, stakeholder theory is used to explain the relationship between CSR disclosure and ROA and ROE.

Agency Theory

Agency theory explains the relationship between the owner of capital as principal and management as agent. Differences in interests and mastery of information can cause information asymmetry because management knows the condition of the company more than the owner of the capital (Jensen & Meckling, 1976). This condition leads to the need for information transparency that can help capital owners in assessing the actions and management of the company by management.

CSR disclosure can serve as a transparency mechanism that complements financial information. Information on environmental management, labor relations, safety, public relations, and sustainability helps capital owners assess management actions and company risks. Such transparency can reduce information gaps and help investors assess asset and equity management.

This view is supported by the finding that CSR disclosure has a positive and significant effect on the ROA of mining companies (Dhirayoga & Aminah, 2025). The positive influence of CSR was also found on ROA and ROE (Dakhli, 2022). Thus, agency theory is used to explain that CSR disclosure is a transparency mechanism related to the company's financial performance.

Corporate Social Responsibility Disclosure

CSR disclosure is the level of disclosure of a company's information regarding economic, social, and environmental responsibilities to stakeholders through annual reports and/or sustainability reports. The disclosure not only shows the programs undertaken, but also the way the company explains its impacts, policies, risks, and sustainability management. Thus, CSR disclosure is a means for stakeholders to obtain information about the implementation of corporate responsibilities and sustainability.

Measurement is carried out through *content analysis* by giving a score of 1 if an item is disclosed and a score of 0 if it is not disclosed. The index is calculated by comparing the number of items disclosed with the entire item used. This approach assesses the breadth of disclosure and allows comparisons between companies and between years (Haniffa & Cooke, 2005; Global Reporting Initiative, 2021).

Financial Performance

Financial performance describes a company's ability to generate profits and manage financial resources over a period. This study uses ROA and ROE because the two ratios provide different perspectives. ROA indicates the effectiveness of asset utilization, while ROE indicates the rate of return on shareholder equity (Kasmir, 2019).

ROA is relevant for mining companies that use large and long-term assets in operational activities. ROE complements the assessment by showing the ability of shareholders' capital to generate profits. The use of both allows for an assessment of financial performance from an asset base and an equity basis.

The Effect of CSR Disclosure on Return on Assets

CSR disclosure can help companies gain stakeholder support, reduce conflicts, and maintain smooth operations. This condition has the potential to support more effective use of assets. From an agency perspective, CSR disclosure also helps investors assess how management manages the company's resources and risks.

Empirical studies show mixed results. CSR disclosure found to have a positive effect on mining company ROA (Husnah & Fahlevi, 2023; Dhirayoga & Aminah, 2025; Suciwati et al., 2016). However, insignificant influences were also found in coal mining companies, mining companies, and banking companies (Hidayah & Wijaya, 2022; Radiman, 2019; Ivena & Mentiana, 2021).

Based on the theory and inconsistency of previous research results, CSR disclosure is suspected to affect the company's ability to generate profits through its assets. Broader CSR disclosure is expected to be related to the management of stakeholder relationships and the sustainability of operations that can support the effectiveness of asset use. Based on this reasoning, the first hypothesis is formulated as follows:

H1a: *Corporate Social Responsibility Disclosure has an effect on Return on Assets.*

The Effect of CSR Disclosure on Return on Equity

CSR disclosure provides information on the company's ability to manage social, environmental, and business sustainability risks. This information can increase shareholder confidence and help investors assess the company's management more completely. Stakeholder support and reduced information asymmetry have the potential to be related to the company's ability to generate a return on equity.

The positive effect of CSR disclosure on ROE was found in mining companies (Gunawan & Yuanita, 2018; Suciwati et al., 2016). However, insignificant influences were also found in coal mining companies, mining companies, and Indonesian and Malaysian manufacturing companies (Hidayah & Wijaya, 2022; Radiman, 2019; Cahyono & Rachmaniyah, 2020). The difference in findings suggests that the relationship between CSR disclosure and the rate of return on equity still needs to be further tested.

These differences in results suggest that the relationship between CSR disclosure and ROE has not resulted in uniform empirical conclusions. Based on the theory and reasoning of the research, CSR disclosure is suspected to affect the company's ability to generate a return on

shareholder equity. This relationship is the basis for examining the influence of CSR disclosure on ROE on mining companies in this study. Based on this reasoning, the second hypothesis is formulated as follows:

H1b: *Corporate Social Responsibility Disclosure has an effect on Return on Equity.*

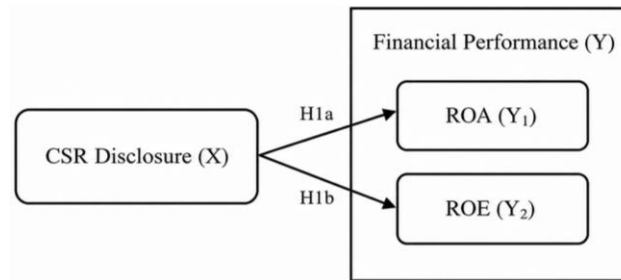


Figure 1. Research Model
Source: Data processed by researchers (2026).

3. Research Methods

This study uses a quantitative approach with secondary data. The data is sourced from the annual reports, sustainability reports, and annual financial statements of mining companies in the IDX-IC classification listed on the Indonesia Stock Exchange for the 2020–2024 period. The research objects include the Coal Production, Oil & Gas Production & Refinery, and Metals & Minerals groups. The research variables consist of CSR, ROA, and ROE disclosure indices.

The research population consists of 68 companies, namely 31 companies in the Energy sector and 37 companies in the Basic Materials sector. Samples were determined using non-probability sampling with purposive sampling techniques. The sample criteria include companies listed on the Indonesia Stock Exchange during the entire observation period 2020–2024, have complete research reports and data, and use the Global Reporting Initiative (GRI) Standards as a reference in sustainability disclosures. Based on the selection process, 30 companies or 150 company observations were obtained.

Data collection uses documentation and content analysis. CSR disclosures were identified from the annual report and/or sustainability report using the GRI Standards 2021 checklist as many as 117 items. Each item is given a score of 1 when disclosed and 0 if not disclosed. Companies using different versions of GRI can still be used as long as their sustainability reports refer to the GRI framework, then the available information is mapped into the GRI Standards 2021 indicators

used in the research. ROA and ROE are calculated based on net profit after tax, total assets, and total equity.

The data was recapitulated using Microsoft Excel and processed with IBM SPSS Statistics 25. Analysis includes descriptive statistics, classical assumption tests, and hypothesis testing with the General Linear Model Multivariate. Normality was tested individually against the residual ROA and ROE models using Kolmogorov–Smirnov and Shapiro–Wilk. If the residual does not meet the normality assumption, the ROA and ROE are transformed using the Normal Score with the Blom formula, then the residual normality of the transformation model is retested. Heteroscedasticity was tested using the Glejser test, multicollinearity using tolerance and VIF values, and autocorrelation using Durbin–Watson. If an indication of autocorrelation is found, correction is made using the Prais–Winsten method, then the residual correction results are retested.

The main test uses the General Linear Model Multivariate because the study has one independent variable and two dependent variables. NROA and NROE as a result of the transformation of the Normal Score Blom were placed as dependent variables, while CSR disclosure was placed as covariate. Multivariate testing uses Pillai's Trace to assess the influence of CSR on both dependent variables in a single multivariate model, while the influence of CSR on each financial performance proxy is assessed through Tests of Between-Subjects Effects and Parameter Estimates as the basis for H1a and H1b decision-making at a significance level of 5%.

Table 1. Classification of Research Objects

Code	Sub-industries	Sector
A121	Coal Production	Energy
A111	Oil & Gas Production & Refinery	Energy
B141	Aluminum	Basic Materials
B142	Copper	Basic Materials
B143	Gold	Basic Materials
B144	Iron & Steel	Basic Materials
B146	Diversified Metals & Minerals	Basic Materials

Source: Indonesia Stock Exchange (2021), processed by researchers (2026).

Table 2. Sample Withdrawal Process

No.	Remarks	Quantity
1	Companies in the selected mining classification based on IDX-IC	68
2	Reduced: not fully listed on the IDX during 2020–2024	(16)
3	Reduced: lack of complete research reports and data	(5)
4	Reduced: sustainability reports do not refer to the GRI Standards during the period 2020–2024	(17)
5	Companies that meet the sample criteria	30

No.	Remarks	Quantity
6	Total observations: 30 companies × 5 years	150

Source: Indonesia Stock Exchange, data processed by researchers (2026).

Table 3. Variable Operations and Their Measurement

Variable	Operational Definition	Dimensions	Indicator	Scale/Source
CSR disclosure	The level of disclosure of economic, social, and environmental responsibility information through annual reports and/or sustainability reports.	Economic, environmental, social	$CSRI = \frac{\sum X_i}{117}$ Xi = 1 if expressed and 0 if not; N = 117 items.	Rasio; Haniffa & Cooke (2005); GRI (2021)
ROA	The ability of a company to generate profits through the utilization of total assets.	Asset-based profitability	$ROA = \frac{\text{Net Profit after Tax}}{\text{Total Assets}}$	Ratio; Kasmir (2019)
ROE	The ability of a company to generate profits based on shareholder equity.	Equity-based profitability	$ROE = \frac{\text{Net Profit after Tax}}{\text{Total Equity}}$	Ratio; Kasmir (2019)

Source: Data processed by researchers (2026).

The unit of research analysis is the company's year-year observation. The CSR index has a range of 0 to 1 and is calculated by dividing the number of items disclosed by 117 disclosure items. The dimensions assessed include economic, environmental, and social information. The use of the same *checklist* aims to maintain the comparability of measurements between companies and between years. Companies using different versions of GRI can still be used as long as their sustainability disclosures refer to the GRI framework, then the available information is mapped to the GRI Standards 2021 indicators. ROA is calculated by dividing net profit after tax by total assets, while ROE is calculated by dividing net profit after tax by total equity. Both ratios are used in decimal form in statistical processing; The percentage value is used in interpretation only. The Company is not restricted based on the reporting currency as long as net income, total assets, and total equity are fully and consistently available in the same currency at each calculation.

The research model is described in the following two equations:

$$NROA_{it} = \alpha_1 + \beta_1 CSR_{it} + \varepsilon_{1it}$$

$$NROE_{it} = \alpha_2 + \beta_2 CSR_{it} + \varepsilon_{2it}$$

NROA_{it} and NROE_{it} are the result of the transformation of the Normal Score Blom of the company's ROA and ROE i in the year t, CSR_{it} shows the CSR disclosure index, α is a constant, β is a regression coefficient, and ε is a residual. Although the model is described in two equations, the test is not performed as two simple linear regressions that stand alone. Both equations are part

of a single multivariate testing framework that analyzes the influence of CSR on two financial performance proxies, namely NROA and NROE, in a single model.

4. Results and Discussion

Results

The study used 30 companies over five years so that 150 company observations were obtained. All observations used have met the sample criteria, namely having CSR disclosure data and financial data required in ROA and ROE measurement as well as sustainability disclosure referring to the GRI Standard. Descriptive statistics are used to describe the level of CSR disclosure and variation in the company's financial performance. The results are presented in Table 4.

Table 4. Descriptive Statistics

Variable	N	Minimum	Maximum	Average	Std. Deviation
CSR	150	0,18803	0,98291	0,63060	0,23358
ROA	150	−0,15217	0,61635	0,07355	0,11951
ROE	150	−2,96554	1,24660	0,08600	0,41116

Source: IBM SPSS Statistics 25 output, data processed by researchers (2026).

The average CSR disclosure index of 0.63060 shows that the sample company on average disclosed about 63.06% of the 117 indicators used. The minimum value of 0.18803 and the maximum value of 0.98291 indicate that the level of CSR disclosure still varies between companies and between periods. The standard deviation of 0.23358 indicates a variation in the level of CSR information disclosure in the sample companies.

ROA has an average of 0.07355 or around 7.35%, while ROE has an average of 0.08600 or around 8.60%. A minimum ROA value of −0.15217 and an ROE of −2.96554 indicate that there are companies that suffered losses during the study period. The ROE has a standard deviation of 0.41116, higher than the ROA of 0.11951, so the rate of return on equity shows greater variation than the rate of return on assets.

Classical Assumption Test

Assumption tests were carried out on the ROA and ROE models as a stage before hypothesis testing. Normality was tested against the residue of each model using Kolmogorov–Smirnov and Shapiro–Wilk, heteroscedasticity was tested using the Glejser test, multicollinearity was tested using *tolerance* values and VIF, while autocorrelation was tested using Durbin–Watson.

The test was carried out to evaluate the fulfillment of the assumptions of the model used in the research analysis.

Normality Test

The results of the initial tests showed that the residual ROA and ROE models were not normally distributed. In the ROA model, the Kolmogorov–Smirnov statistic was 0.135 with a significance of 0.000 and Shapiro–Wilk of 0.916 with a significance of 0.000. In the ROE model, the Kolmogorov–Smirnov statistic is 0.265 with a significance of 0.000 and the Shapiro–Wilk is 0.573 with a significance of 0.000. Because all significance values were smaller than 0.05, normality treatment was carried out using the Normal Score with the Blom formula for ROA and ROE so that the NROA and NROE variables were obtained.

After the Bloms transformation, the residuals of both models is retested. The results showed a Kolmogorov–Smirnov significance value of 0.200 in both models. Shapiro–Wilk produced a significance value of 0.387 in the NROA model and 0.928 in the NROE model. All significance values greater than 0.05 so that the residual after the transformation is declared to meet the normality assumption.

Table 5. Summary of Residual Normality Test

Testing Stage	Model	K–S Statistic	K–S Sig.	S–W Statistic	S–W Sig.	Conclusion
Before the transformation	ROA	0,135	0,000	0,916	0,000	Abnormal
Before the transformation	ROE	0,265	0,000	0,573	0,000	Abnormal
After Blom	NROA	0,057	0,200	0,990	0,387	Normal
After Blom	NROE	0,028	0,200	0,995	0,928	Normal

Notes: K–S = Kolmogorov–Smirnov; S–W = Shapiro–Wilk.

Source: IBM SPSS Statistics 25 output, data processed by researchers (2026).

Table 6. Other Assumptions Test Summary

Testing	Model NROA	Model NROE	Criteria	Conclusion
Glejser	Sig. 0.494	Sig. 0.702	Sig. > 0.05	No heteroscedasticity
Multikolinearitas	Tolerance 1,000; VIF 1,000	Tolerance 1,000; VIF 1,000	Tolerance > 0.10; VIF < 10	No multicollinearity

Source: IBM SPSS Statistics 25 output, data processed by researchers (2026).

Autocorrelation Test

The Durbin–Watson test yielded a value of 0.964 in the NROA model and 1.096 in the NROE model. The relatively low value indicates a positive autocorrelation indication in the residuals of the two models. To deal with this problem, treatment is carried out using the Prais–Winsten method. After the estimation process reached convergence, the Durbin–Watson value

increased to 1.938 in the NROA model and 1.891 in the NROE model. The change in the Durbin–Watson value that is getting closer to 2 shows that the Prais–Winsten treatment is successful in reducing the indication of autocorrelation in both models.

However, the residual Prais–Winsten results were then retested to ensure the fulfillment of the normality assumptions. The results showed that the residual ROA model after Prais–Winsten had a Kolmogorov–Smirnov significance of 0.001 and Shapiro–Wilk of 0.007, while the residual ROE model had a Kolmogorov–Smirnov significance of 0.022 and Shapiro–Wilk of 0.030. All of these values are smaller than 0.05 so that the residual results of Prais–Winsten no longer meet the assumption of normality. Based on the approach used by Hidayah and Wijaya, the researcher chose to ignore the problem of autocorrelation when the treatment carried out actually caused the data to return to not meet the assumption of normality. In this study, although the Prais–Winsten method was able to improve the Durbin–Watson value, the residual after treatment was no longer normally distributed. Therefore, the Prais–Winsten results were not used in the hypothesis testing, and subsequent analyses continued using the NROA and NROE models resulting from the Blom transform that had met the normality assumptions (Hidayah & Wijaya, 2022).

Table 7. Autocorrelation Test and Inter-Period Dependency Handling

Model	DW Before PW	DW After PW	K–S Sig. Residual after PW	S–W Sig. Residual after PW	Verdict
NROA	0,964	1,938	0,001	0,007	PW fixes DW, but residual is abnormal
NROE	1,096	1,891	0,022	0,030	PW fixes DW, but residual is abnormal

Source: IBM SPSS Statistics 25 output, data processed by researchers (2026).

Results of Multivariate Regression Analysis

The main test was conducted using a Multivariate General Linear Model with NROA and NROE as dependent variables and CSR disclosure as a covariate. NROA and NROE are the scores resulting from the transformation of the Normal Score Blom from ROA and ROE. The results of the multivariate test showed a Pillai's Trace value of 0.174 with $F(2, 147) = 15.443$ and a significance of < 0.001 , which suggests that in one multivariate model CSR disclosure had a significant effect on financial performance measured through NROA and NROE. The results of Pillai's Trace were used to assess the overall multivariate model, while the influence of CSR on each proxy was explained through NROA and NROE testing. The partial eta squared value of 0.174 indicates the magnitude of the multivariate effect of CSR on the two dependent variables.

In the ROA proxy, the test of the NROA model yielded a value of $F(1, 148) = 19.936$ with a significance of < 0.001 . An R^2 value of 0.119 and an *adjusted* R^2 of 0.113 indicate that CSR disclosure is able to explain 11.9% of NROA variations. Based on Parameter Estimates, the CSR coefficient for NROA is 1.464 with a t-value of 4.465 and a significance of < 0.001 . The positive coefficient shows that the higher the CSR disclosure, the higher the ROA score resulting from the Blom transformation. The regression equations obtained are:

$$\widehat{NROA}_{it} = -0,923 + 1,464CSR_{it}$$

In the ROE proxy, testing the NROE model yielded a value of $F(1,148) = 9.615$ with a significance of 0.002. The R^2 value of 0.061 and the *adjusted* R^2 of 0.055 indicate that CSR disclosure is able to explain 6.1% of NROE variations. Based on Parameter Estimates, the CSR coefficient for NROE was 1.049 with a t-value of 3.101 and a significance of 0.002. The positive coefficient indicates that the higher the CSR disclosure, the higher the ROE score of the Blom transformation. The regression equations obtained are:

$$\widehat{NROE}_{it} = -0,662 + 1,049CSR_{it}$$

Table 8. Multivariate Test Results and Hypothesis Testing

Testing	Coeff/Value	F	df	Say.	R ²	Partial η^2	Verdict
Pillai's Trace	0,174	15,443	2; 147	0,000	—	0,174	Significant multivariate models
H1a: CSR → NROA	1,464	19,936	1; 148	0,000	0,119	0,119	Accepted
H1b: CSR → NROE	1,049	9,615	1; 148	0,002	0,061	0,061	Accepted

Source: IBM SPSS Statistics 25 output, data processed by researchers (2026).

Discussion

1. The Effect of CSR Disclosure on Return on Assets

The results of the study show that Corporate Social Responsibility (CSR) disclosure has a positive effect on Return on Assets (ROA). These findings indicate that mining companies with broader CSR disclosures tend to have better ability to generate profits through their assets. CSR disclosures can reflect how a company manages the social, environmental, and economic impacts of its operational activities. For mining companies that have a high dependence on assets and operational sustainability, managing relationships with the community, government, labor, and the environment can help reduce operational disruptions so that asset utilization becomes more effective.

These findings are in line with stakeholder theory which explains that the sustainability of a company is influenced by its ability to maintain relationships with parties that influence or be

affected by the company's activities. CSR disclosure is a means for companies to show accountability to stakeholders and build trust that can support the continuity of business activities. From the perspective of agency theory, CSR disclosure also expands the information received by capital owners regarding non-financial risk management so that it can reduce information asymmetry and increase transparency in company management.

Empirically, CSR disclosure is known to have a positive effect on the financial performance of mining companies in Indonesia (Husnah & Fahlevi, 2023). The positive influence of CSR disclosure on ROA was also found in mining sector companies (Dhirayoga & Aminah, 2025), while a positive relationship between CSR and ROA was found in other studies (Suciwati et al., 2016). These findings show that in industries with high social and environmental risks, CSR openness can go hand in hand with the company's ability to utilize assets productively.

However, previous empirical studies have not yielded uniform conclusions. CSR disclosure found to have no significant effect on ROA in coal mining companies (Hidayah & Wijaya, 2022), and similar results were also found in mining companies listed on the Indonesia Stock Exchange (Radiman, 2019). Differences in results can be related to sample characteristics, research period, subsector coverage, and CSR indicators used. Thus, the positive influence of CSR on ROA in this study is more accurately interpreted that CSR openness is related to the company's ability to maintain the sustainability of operations and asset productivity, although ROA is still influenced by various other operational and financial factors.

2. The Effect of CSR Disclosure on Return on Equity

The results of the study show that CSR disclosure also has a positive effect on *Return on Equity* (ROE). These findings indicate that companies with broader CSR disclosures tend to have a better ability to generate a return on shareholder capital. For investors, CSR information provides an additional picture of how the company manages environmental, social, safety, public relations, and business sustainability risks that are not entirely reflected in the financial statements.

These findings can be explained through stakeholder theory because the company's ability to create value for shareholders is inseparable from the support of other stakeholders. Good relationships with the community, government, and labor can help maintain the continuity of operations which ultimately supports the company's ability to generate profits. Meanwhile, the agency's theory explains that CSR disclosure can be a mechanism of transparency between management and shareholders. Sustainability information helps investors assess how management

manages the company's risks and resources so that the information gap between management and capital owners can be reduced.

Empirically, CSR disclosure was found to have a positive effect on ROE in mining companies (Gunawan & Yuanita, 2018). A positive relationship between CSR and ROE was also found in other company research (Suciwati et al., 2016). The findings suggest that the benefits of CSR disclosure can not only relate to the effectiveness of asset use, but also to the company's ability to generate a return on shareholder equity.

In contrast, CSR disclosure was found to have no significant effect on ROE in coal mining companies (Hidayah & Wijaya, 2022), and similar results were also found in other mining companies (Radiman, 2019). In the oil and gas subsector, CSR disclosure is known to have an effect on ROA but not on ROE (Lestari & Zulkifli, 2023). These differences show that the influence of CSR on equity returns can differ based on the characteristics of the company, the period of observation, and its financial condition. ROE is also influenced by the company's equity structure and ability to generate profits. Therefore, the findings of this study do not mean that increased CSR disclosure automatically increases ROE, but suggest that CSR openness and stakeholder relationship management may be related to a company's ability to create value for shareholders.

5. Conclusion and Implication

Conclusion

This study examines the effect of Corporate Social Responsibility (CSR) disclosure on the financial performance of mining companies in the IDX-IC classification listed on the Indonesia Stock Exchange for the period 2020–2024. Based on the purposive sampling process, 30 companies were obtained with 150 company observations per year. The results of the multivariate test showed that CSR disclosure had an effect on financial performance as measured through ROA and ROE in a single multivariate model. In the testing of each proxy, CSR disclosure showed a positive influence on ROA and ROE. These findings indicate that the wider the CSR disclosure, the better the tendency of the company's ability to generate profits through the use of assets and equity.

CSR disclosure thus not only relates to the transparency of social and environmental responsibility, but also has relevance to the financial performance of mining companies.

Nonetheless, financial performance remains influenced by a variety of other operational, financial, and external factors that were not analyzed in this study. Therefore, CSR disclosure needs to be understood as one of the factors related to financial performance, not as the only determining factor.

Research Implications

Theoretically, the results of the study strengthen the relevance of stakeholder theory and agency theory in explaining the relationship between CSR disclosure and financial performance. CSR information disclosure can be a means for companies to maintain relationships with stakeholders while reducing information asymmetry between management and capital owners. Practically, mining companies need to improve the consistency, comparability, and openness of CSR disclosures because the information can provide an overview of the company's social, environmental, and sustainability risk management. For investors, CSR information can be used as an additional consideration in assessing a company's sustainability and management, while regulators can continue to encourage more consistent and comparable sustainability disclosures.

Research Limitations

This study only uses CSR disclosure as an independent variable and ROA and ROE as financial performance proxies. CSR measurement uses a dichotomous score based on the area of the items disclosed so that it has not assessed the quality, depth, effectiveness, or actual impact of the implementation of CSR. In addition, the sample was limited to 30 mining companies that met the research criteria and used GRI as a reference for sustainability disclosure during the 2020–2024 period, so the results of the study need to be generalized carefully.

In the assumption testing process, the Normal Score Blom transform is used to meet residual normality. Autocorrelation correction using Prais–Winsten is able to correct Durbin–Watson values, but residual after recorection does not meet the assumption of normality so the Prais–Winsten results are not maintained in hypothesis testing. This condition is one of the methodological limitations of the research.

Suggestions

Further research is suggested adding other variables that can affect financial performance, such as company size, capital structure, liquidity, commodity prices, operational efficiency, and corporate governance. CSR measurement can also be developed by considering the quality and

depth of disclosure, not just the number of items disclosed. Subsequent research can also expand the scope of the company and the observation period and consider analytical methods that are more in line with the characteristics of the company-year data, especially those that are able to accommodate correlations between periods without neglecting the fulfillment of model assumptions. Thus, the relationship between CSR disclosure and financial performance can be analyzed more comprehensively.

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Appendices

Raw data, the GRI Standards 2021 checklist, a list of sample companies, and statistical processing outputs are available at the following Google Drive link:

https://drive.google.com/drive/folders/1apEHPu4gfQODDA5NgoranUnjs_j9r95q?usp=sharing