Managerial Ownership Moderates the Effects of Earnings Management, Capital Structure, and Business Risk on Financial Performance

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This study examines whether managerial ownership moderates the effects of earnings management, capital structure, and business risk on the financial performance of Indonesian mining firms, an industry characterized by high volatility due to commodity-price cycles and regulatory dynamics. The objective is to clarify inconsistent prior evidence by testing both direct effects and moderation using a value-based performance measure. Employing a quantitative causal design, the study uses secondary data from audited annual financial statements of mining companies listed on the Indonesia Stock Exchange. Purposive sampling yields 14 firms observed over a five-year period, producing 70 firm-year observations. Financial performance is proxied by Economic Value Added (EVA), while earnings management, capital structure, business risk, and managerial ownership are operationalized using standard accounting-based proxies. Panel data regression is conducted using EViews to estimate the main effects and interaction terms. The results show that earnings management does not significantly affect EVA, whereas capital structure and business risk have positive and significant effects on EVA. However, managerial ownership does not moderate the relationships between earnings management, capital structure, or business risk and financial performance. These findings suggest that, in the mining sector, value creation is more closely linked to financing structure and risk-handling capacity than to earnings-smoothing behavior, and that low managerial ownership may limit its governance role as a moderating mechanism.

Keywords: Managerial ownership, Capital structure, Business risk

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1. Introduction

The mining sector is one of the strategic pillars of the Indonesian economy due to its contribution to state revenue, employment absorption, and exports of major commodities such as coal, nickel, copper, and gold. Nevertheless, the financial performance of mining firms tends to be volatile, driven by fluctuations in global commodity prices, rising operating costs, and the dynamics of downstreaming and regulatory policies. Data from the Indonesia Stock Exchange indicate that the average return on assets (ROA) in the mining sector declined from 8.47% in 2021 to 6.32% in 2023, suggesting increasing pressure on corporate profitability [1]. This volatility is also triggered by other external factors, including exchange-rate movements, inflation, and shifts in global demand structures, which ultimately affect firms' operating activities and revenue patterns.

In addition to external determinants, internal corporate factors also shape financial performance, particularly through earnings management practices, capital structure decisions, and business-risk profiles. Earnings management is used to stabilize reported earnings, maintain investor perceptions, or meet specific targets; however, empirical evidence indicates that its impact on performance is not always consistent because it depends on industry conditions and governance quality [2], [3]. Capital structure is crucial because the mining industry is generally capital-intensive and requires substantial financing; optimal debt utilization can improve efficiency and provide tax benefits, but excessive leverage increases the risk of distress when

commodity prices weaken [4], [5]. Business risk is also significant due to revenue uncertainty resulting from commodity price volatility and policy changes; prior studies find that its effect on profitability depends on firms' risk-mitigation capacity and strategic choices [6]–[8]. From a corporate-governance perspective, managerial ownership may align the interests of managers and shareholders and strengthen internal monitoring mechanisms, thereby theoretically influencing the strength of the relationships among earnings management, capital structure, business risk, and performance [9], [10]. Given inconsistent empirical findings and the limited number of studies that position managerial ownership as a moderating variable in the mining sector, this study examines the effects of earnings management, capital structure, and business risk on financial performance proxied by Economic Value Added (EVA) and evaluates the moderating role of managerial ownership in these relationships.

Conceptually, the relationships among the study variables can be justified through the agency and corporate-governance framework: the separation of ownership and control creates potential conflicts of interest that encourage opportunistic behavior, including earnings management and aggressive financing decisions, making governance quality a key differentiator in explaining performance [2], [9]. The literature also emphasizes that capital structure in capital-intensive industries reflects a "trade-off": debt can enhance managerial discipline and efficiency, while simultaneously increasing risk exposure when cash flows fluctuate with commodity prices [4], [5]. In the mining context, business risk is not merely a control variable but a performance determinant that can even be transformed into an opportunity when firms successfully mitigate and adapt (e.g., through cost efficiency, diversification, and stronger risk management); empirical findings regarding the direction and magnitude of the business-risk effect remain mixed, indicating contextual dependence and the importance of internal corporate mechanisms [6]–[8]. Therefore, inconsistencies in prior evidence on the earnings management–performance, capital structure–performance, and business risk–performance links suggest that models testing only direct effects may oversimplify the phenomenon, particularly when governance mechanisms (e.g., managerial ownership) are not explicitly incorporated [2], [6], [10].

Based on this gap, the study positions managerial ownership as a governance mechanism that can theoretically moderate the relationships between internal determinants and performance. Managerial ownership is assumed to enhance incentive alignment, thereby curbing opportunistic behavior (e.g., earnings management that undermines reporting credibility) and encouraging prudence in leverage decisions and risk management, although empirical evidence remains mixed across contexts [9], [10]. Because the mining sector is highly sensitive to commodity cycles, testing this moderating effect is important to explain when and how internal corporate determinants are genuinely translated into economic value creation. Moreover, using EVA as the performance measure emphasizes value creation after accounting for the cost of capital, making it more relevant for capital-intensive industries than purely accounting-based indicators [4], [5]. Accordingly, the research problem is formulated to examine whether earnings management, capital structure, and business risk affect the financial performance of mining companies proxied by EVA, and to assess whether managerial ownership acts as a moderating variable that strengthens or weakens the effects of earnings management, capital structure, and business risk on financial performance (EVA). In line with this formulation, the study hypothesizes that earnings management affects financial performance (EVA) (H1), capital structure affects financial performance (EVA) (H2), and business risk affects financial performance (EVA) (H3), and that managerial ownership moderates the effect of earnings management on financial performance (EVA) (H4), moderates the effect of capital structure on financial performance (EVA) (H5), and moderates the effect of business risk on financial performance (EVA) (H6).

2. Methods

Population and Sample

All mining companies listed on the IDX were included in the population. Samples were determined using purposive sampling, which had to meet certain criteria. The sampling criteria are:

1. Mining companies that have been continuously listed on the Indonesia Stock Exchange (IDX) for five consecutive years from 2020 to 2024.
2. Companies that issue complete financial reports for the years 2020 to 2024.
3. Mining companies that use financial reports in rupiah during the 2020-2024 period.
4. Mining companies that have complete information and data in accordance with the research variables during the 2020-2024 period

The research population consists of all 90 mining companies listed and publicly traded on the Indonesia Stock Exchange (IDX) during the period 2020–2024. The research sample was obtained through purposive sampling, which is the selection of samples based on specific criteria. After the elimination process, only 14 companies met all the criteria, resulting in 70 samples for the 5-year observation period.

Types and Sources of Data

This study is a quantitative study with a causal approach that aims to examine the influence between variables through statistical analysis. The type of data used is secondary data in the form of mining company financial reports obtained from the Indonesia Stock Exchange and the companies' official websites. The data sources were selected because they are public, measurable, and relevant to the research needs. The data collection technique was carried out using the documentation method, which involved downloading and recording information from financial reports that were relevant to the research variables.

Operational Definition of Variables

In this study, the variables used are grouped into dependent variables, independent variables, and moderating variables. The following is an explanation of each variable based on its operational definition:

a. Dependent Variable
   A dependent variable is a variable that is influenced or explained by independent variables in a study. This variable becomes the main focus of analysis to see the extent of the independent variable's influence on it. In this study, the dependent variable is Financial Performance. Financial performance describes a company's ability to use resources efficiently and generate profits to demonstrate its financial health (Saad & Belkacem, 2022).

   EVA = NOPAT – (WACC × Capital Employed)

b. Independent Variables
   Independent variables are variables that influence or cause changes in dependent variables. The independent variables in this study include:*Earnings Management* (Manajemen Laba)
   1. Earnings management is a practice carried out by company management to manipulate financial statements with the aim of meeting certain profit targets (Dsouza et al., 2024). This practice can be done through accrual methods or operational actions that affect financial statements.

   (1) $\frac{TA_{it}}{A_{it-1}} = \beta_1\left(\frac{1}{A_{it-1}}\right) + \beta_2\left(\frac{\Delta Rev_{it}}{A_{it-1}}\right) + \beta_3\left(\frac{PPE_{it}}{A_{it-1}}\right) + \varepsilon$

   (2) $NDA_{it} = \beta_1\left(\frac{1}{A_{it-1}}\right) + \beta_2\left(\frac{\Delta Rev_{it}}{A_{it-1}} - \frac{\Delta Rec_{it}}{A_{it-1}}\right) + \beta_3\left(\frac{PPE_{it}}{A_{it-1}}\right)$

   (3) $DA_{it} = \frac{TA_{it}}{A_{it-1}} - NDA_{it}$

Description:
Dait = Discretionary Accruals of company i in period t
NDAit = Nondiscretionary Accruals of company i in period t
Tait = Total accruals of company i in period t
NIit = Net income of company i in period t
CFOit = Cash flow from operating activities of company i in period t
Ait-1 = Total assets of company i in period t-1
ΔRevit = Revenue of company i in year t minus revenue of company I in year t-1
PPEit = Property, plant, and equipment of company i in period t
ΔRecit = Accounts receivable of company I in year t minus revenue of company I in year t-1
E = error

2. Capital Structure
   Capital structure refers to the composition of debt and equity used by a company to finance its operations and investments (Adeneye et al., 2023). A company's leverage level reflects the financial risks it faces and its funding strategy.

$$DER = \frac{Total\ Debt}{Total\ Equity}$$

3. Business Risk
   Business risk is the uncertainty regarding the projected return on assets in the future (Rindiasih & Wulandari, 2023).

$$BRISK = \frac{EBIT}{Total\ Assets}$$

Moderating Variables

A moderating variable is a variable that moderates or strengthens/weakens the relationship between independent and dependent variables (Ghozali, 2021). In other words, moderating variables play a role in influencing the direction or strength of the relationship between independent and dependent variables.

In this study, the moderating variable is managerial ownership. Managerial ownership refers to the proportion of company shares owned by the management or executives of the company itself. This ownership is considered important because it can influence the behavior and decisions of managers in managing the company (Altania & Tanno, 2023).

$$KM = \frac{Total\ Shares\ Owned\ by\ Management}{Total\ Saham\ beredar}$$

Data Analysis Method

Data analysis was performed using panel data regression to test the direct effect and moderating effect. The regression model used in testing the hypothesis is as follows:

$$Y_1 = \alpha + \beta1X1 + \beta2X2 + \beta3X3 + e$$

$$Y_2 = \alpha + \beta1X1 + \beta2X2 + \beta3X3 + \beta4(X1.M) + \beta5(X2.M) + \beta6(X3.M) + e$$

Description:
α = Constant
β1, β2, β3= Regression slope coefficient
X1 = EM
X2 = SM
X3 = RB
Z = MO
e = Error term

3. Results and Discussion

Results and Analysis

Panel Data Regression Analysis

Table 1. Fixed Effect Model (FEM)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19.86030	0.224925	88.29732	0.0000
X1	-0.851165	0.791955	-1.074765	0.2874
X2	0.197227	0.091866	2.146912	0.0365
X3	0.897737	0.416306	2.156434	0.0357
Z	0.131489	0.309549	0.424777	0.6728
Effects Specification				
Cross-section fixed (dummy variables)				
Root MSE	0.361639	R-squared		0.983190
Mean dependent var	20.32306	Adjusted R-squared		0.977694
S.D. dependent var	2.809403	S.E. of regression		0.419588
Akaike info criterion	1.317946	Sum squared resid		9.154800
Schwarz criterion	1.896130	Log likelihood		-28.12810
Hannan-Quinn criter.	1.547608	F-statistic		178.9040
Durbin-Watson stat	1.169940	Prob(F-statistic)		0.000000

Source: Eviews 12 output (data processed by researcher)

Based on the Chow test and Hausman test, the most appropriate and selected panel data regression model in this study is the Fixed Effect Model (FEM). Panel data regression analysis is used to determine the direction of the relationship between independent and dependent variables. Based on the table above, a regression equation can be formulated as follows:

$$Y= 19{,}86030 - 0{,}851165\ (X1) + 0{,}197227\ (X2) + 0{,}897737\ (X3)$$

The results of the regression equation can be interpreted as follows:

1. The constant value (C) of 19.86030 indicates that when the variables of Earnings Management, Capital Structure, and Business Risk are held constant, Financial Performance is estimated to have a value of 19.86030. This value represents the baseline level of the company's financial performance, serving as an initial reference point before being influenced by the independent variables.
2. The Earnings Management variable (X1) has a negative regression coefficient of –0.851165. The negative sign indicates an inverse relationship between Earnings Management and Financial Performance. This implies that a 1% increase in earnings management practices is predicted to reduce the company's financial performance by 0.851165. This effect may occur because excessive earnings manipulation undermines the credibility of financial statements and disrupts managerial decision-making efficiency, ultimately leading to a decline in financial performance.
3. The Capital Structure variable (X2) has a positive regression coefficient of 0.197227. The positive sign indicates a direct relationship between Capital Structure and Financial Performance. Accordingly, a 1% increase in capital structure is expected to increase financial performance by 0.197227. This finding suggests that optimal capital structure management, achieved through a balanced use of debt and equity, can strengthen a firm's financial position and enhance its ability to generate profits.
4. The Business Risk variable (X3) has a positive regression coefficient of 0.897737, indicating a direct relationship between Business Risk and Financial Performance. This implies that an increase in

business risk within manageable limits can encourage firms to operate more efficiently and innovatively, thereby positively affecting financial performance. In other words, companies that are able to strategically manage risk have the potential to achieve higher returns.

T-Test

Table 2. t-test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19.86030	0.224925	88.29732	0.0000
X1	-0.851165	0.791955	-1.074765	0.2874
X2	0.197227	0.091866	2.146912	0.0365
X3	0.897737	0.416306	2.156434	0.0357

Source: Eviews 12 output (data processed by researcher)

Based on the results presented in the table above, several conclusions can be drawn from the partial (t-test) analysis examining the effect of the independent variables on the dependent variable, as follows:

1. Earnings Management (X1) has a probability (Prob.) value of 0.2874, which is greater than the significance level of 0.05 (0.2874 > 0.05). Therefore, it can be concluded that Earnings Management does not have a significant effect on Financial Performance, and thus H1 is rejected.
2. Capital Structure (X2) has a probability (Prob.) value of 0.0365, which is less than the significance level of 0.05 (0.0365 < 0.05). Accordingly, it can be concluded that Capital Structure has a positive and significant effect on Financial Performance, and therefore H2 is accepted.
3. Business Risk (X3) has a probability (Prob.) value of 0.0357, which is less than the significance level of 0.05 (0.0357 < 0.05). Thus, it can be concluded that Business Risk has a positive and significant effect on Financial Performance, and consequently H3 is accepted.

F Test (Simultaneous)

Table 3. F-Test

Root MSE	0.361639	R-squared	0.983190
Mean dependent var	20.32306	Adjusted R-squared	0.977694
S.D. dependent var	2.809403	S.E. of regression	0.419588
Akaike info criterion	1.317946	Sum squared resid	9.154800
Schwarz criterion	1.896130	Log likelihood	-28.12810
Hannan-Quinn criter.	1.547608	F-statistic	178.9040
Durbin-Watson stat	1.169940	Prob(F-statistic)	0.000000

Source: Eviews 12 output (data processed by researcher)

The results of the panel data regression analysis in Table 4.13 above show a Prob (F-statistic) value of 0.000000 or < 0.05, so it can be concluded that the independent variables in this study jointly affect Financial Performance and that this research model is valid.

Panel Data Regression Test with Moderating Effects

Table 4. Panel Data Regression Test with Moderating Effects

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19.82895	0.404785	48.98635	0.0000
X1	4.074818	17.91578	0.227443	0.8210
X2	0.639529	0.319276	2.003058	0.0507
X3	0.183797	0.674838	0.272358	0.7865
Z	-0.158984	0.735506	-0.216156	0.8298
X1Z	-7.478836	27.50439	-0.271914	0.7868

X2Z	-0.613328	0.425871	-1.440174	0.1562
X3Z	2.357912	1.601879	1.471967	0.1474

Source: Eviews 12 output (data processed by researcher)

Panel data regression analysis is used to determine the direction of the relationship between independent variables and dependent variables. Based on the table above, a regression equation can be formulated as follows:

Y= 19.82895 + 4.074818 (X1) + 0.639529 (X2) + 0.183797 (X3) – 7,478836 (X1.Z) – 0,613328 (X2.Z) + 2,357912 (X3.Z)

The results of the regression equation can be interpreted as follows:

1. The constant (α) value of 19.82895 indicates that when all independent variables (Earnings Management, Capital Structure, and Business Risk) as well as their interactions with the moderating variable (Managerial Ownership) are equal to zero, the value of Financial Performance (Y) is estimated at 19.82895. This value represents the baseline level of the firm's financial performance in the absence of the effects of the research variables.
2. Variable X1 (Earnings Management) has a positive coefficient of 4.074818, indicating that a one-unit increase in Earnings Management will increase Financial Performance by 4.074818, assuming other variables remain constant. Based on Stakeholder Theory, ethically conducted earnings management can serve as a mechanism for managing financial information to maintain stakeholders' trust, thereby enhancing the firm's image and financial performance.
3. Variable X2 (Capital Structure) has a positive coefficient of 0.639529, suggesting that a one-unit increase in Capital Structure will improve Financial Performance by 0.639529, ceteris paribus. From a Stakeholder Theory perspective, a balanced capital structure between debt and equity reflects the firm's responsibility toward creditors and shareholders. An optimal capital structure strengthens stakeholder confidence in the firm's financial stability and its ability to meet financial obligations.
4. Variable X3 (Business Risk) has a positive coefficient of 0.183797, meaning that a one-unit increase in Business Risk will increase Financial Performance by 0.183797, holding other variables constant. According to Stakeholder Theory, effective risk management demonstrates the firm's commitment to business sustainability and the protection of stakeholder interests, thereby creating added value and improving financial performance.
5. The moderating variable Z (Managerial Ownership) has a negative coefficient of –0.158984, indicating that a one-unit increase in Managerial Ownership will decrease Financial Performance by 0.158984, assuming other variables are constant. Based on Stakeholder Theory, an increase in managerial ownership does not always align with the interests of all stakeholders.
6. The interaction term X1.Z (Earnings Management × Managerial Ownership) has a negative coefficient of –7.478836, indicating that Managerial Ownership weakens the relationship between Earnings Management and Financial Performance. From the perspective of Stakeholder Theory, higher managerial ownership increases managerial accountability to stakeholders, thereby reducing opportunistic earnings management practices. Consequently, the positive effect of earnings management on financial performance diminishes due to stronger internal control mechanisms.
7. The interaction term X2.Z (Capital Structure × Managerial Ownership) has a negative coefficient of –0.613328, suggesting that Managerial Ownership weakens the relationship between Capital Structure and Financial Performance. Under Stakeholder Theory, managers who are also shareholders tend to be more cautious in making financing decisions to avoid harming other stakeholders, such as creditors and employees. As a result, the positive influence of capital structure on financial performance is reduced as managers balance the interests of multiple stakeholders.

8. The interaction term X3.Z (Business Risk × Managerial Ownership) has a positive coefficient of 2.357912, indicating that Managerial Ownership strengthens the relationship between Business Risk and Financial Performance. According to Stakeholder Theory, managerial ownership encourages managers to take greater responsibility in risk management, as they are directly affected by the outcomes. Consequently, effective risk management enhances stakeholder confidence and reinforces the firm's overall financial performance.

Simultaneous Regression Coefficient Test (F Test) after Moderating Effects

Table 5. Simultaneous Regression Coefficient Test (F Test) after Moderating Effects

Root MSE	0.361639	R-squared	0.983190
Mean dependent var	20.32306	Adjusted R-squared	0.977694
S.D. dependent var	2.809403	S.E. of regression	0.419588
Akaike info criterion	1.317946	Sum squared resid	9.154800
Schwarz criterion	1.896130	Log likelihood	-28.12810
Hannan-Quinn criter.	1.547608	F-statistic	178.9040
Durbin-Watson stat	1.169940	Prob(F-statistic)	0.000000

Source: Eviews 12 output (data processed by researcher)

The results of the panel data regression analysis in Table 4.15 above show a Prob (F-statistic) value of 0.000000 or < 0.05, so it can be concluded that the independent variables in this study jointly affect Financial Performance and that this research model is valid.

Partial Regression Coefficient Test (t-test)

Table 6. Partial Regression Coefficient Test (t-test)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19.86030	0.224925	88.29732	0.0000
X1	-0.851165	0.791955	-1.074765	0.2874
X2	0.197227	0.091866	2.146912	0.0365
X3	0.897737	0.416306	2.156434	0.0357
Z	0.131489	0.309549	0.424777	0.6728

Source: Eviews 12 output (data processed by researcher)

Based on the results presented in Table 4.16, several conclusions can be drawn from the partial test (t-test) examining the effect of the independent variables on the dependent variable, as follows:

1. Earnings Management (X1) has a probability value of 0.2874, which is greater than 0.05 (0.2874 > 0.05). Therefore, it can be concluded that Earnings Management does not have a significant effect on Financial Performance, and H1 is rejected.
2. Capital Structure (X2) has a probability value of 0.0365, which is lower than 0.05 (0.0365 < 0.05). Thus, it can be concluded that Capital Structure has a positive and significant effect on Financial Performance, and H2 is accepted.
3. Business Risk (X3) has a probability value of 0.0357, which is lower than 0.05 (0.0357 < 0.05). Accordingly, it can be concluded that Business Risk has a positive and significant effect on Financial Performance, and H3 is accepted.

Moderation Test

Table 7. Moderation Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19.82895	0.404785	48.98635	0.0000
X1	4.074818	17.91578	0.227443	0.8210

Variable	Coefficient	Std. Error	t-Statistic	Prob.
X2	0.639529	0.319276	2.003058	0.0507
X3	0.183797	0.674838	0.272358	0.7865
Z	-0.158984	0.735506	-0.216156	0.8298
X1Z	-7.478836	27.50439	-0.271914	0.7868
X2Z	-0.613328	0.425871	-1.440174	0.1562
X3Z	2.357912	1.601879	1.471967	0.1474

Source: Eviews 12 output (data processed by researcher)

Based on the results presented in Table 4.17, several conclusions can be drawn regarding the relationship between the independent variables and the dependent variable with the interaction of the moderating variable, as follows:

1. Based on the moderation test of the relationship between Earnings Management and Managerial Ownership, the probability value obtained is 0.7868 > 0.05, indicating that Managerial Ownership does not moderate the relationship between Earnings Management and Financial Performance; therefore, H4 is rejected. This implies that the level of managerial ownership does not influence the strength of the effect of earnings management practices on the company's financial performance.
2. Based on the moderation test of the relationship between Capital Structure and Managerial Ownership, the probability value obtained is 0.1562 > 0.05, indicating that Managerial Ownership does not moderate the relationship between Capital Structure and Financial Performance; therefore, H5 is rejected. Thus, the proportion of managerial ownership neither strengthens nor weakens the effect of capital structure on improving the company's financial performance.
3. Based on the moderation test of the relationship between Business Risk and Managerial Ownership, the probability value obtained is 0.1474 > 0.05, indicating that Managerial Ownership does not moderate the relationship between Business Risk and Financial Performance; therefore, H6 is rejected. Accordingly, the level of managerial ownership does not have a strengthening or weakening effect on the relationship between business risk and the company's financial performance.

Testing the Coefficient of Determination (Adjusted R Square)

Table 8. Coefficient of Determination Test (Adjusted R Square)

Root MSE	0.361639	R-squared	0.983190
Mean dependent var	20.32306	Adjusted R-squared	0.977694
S.D. dependent var	2.809403	S.E. of regression	0.419588
Akaike info criterion	1.317946	Sum squared resid	9.154800
Schwarz criterion	1.896130	Log likelihood	-28.12810
Hannan-Quinn criter.	1.547608	F-statistic	178.9040
Durbin-Watson stat	1.169940	Prob(F-statistic)	0.000000

Source: EVIEWS Data Processing Results (2025)

Based on the results of calculations using EViews, as presented in Table 4.18, the coefficient of determination (R-square) is 0.983190, indicating a very strong correlation. This result shows that 98.31% of the variation in the dependent variable can be explained simultaneously by the independent variables, while the remaining 1.69% is influenced by other variables outside the research model.

Discussion

Effect of Earnings Management on Financial Performance

The test results indicate that Earnings Management has a probability value of 0.2874, which is greater than 0.05, suggesting that it does not have a significant effect on Financial Performance. This finding implies that earnings management practices are unable to improve firm performance when performance is measured using Economic Value Added (EVA). In the mining sector, financial performance is more strongly driven by external factors such as global commodity price fluctuations and national energy policy dynamics. Profit increases for firms such as ADRO and PTBA during 2021–2022 were primarily attributable to high global commodity prices rather than earnings management activities. When commodity prices declined in 2023, financial performance also weakened despite continued income-smoothing efforts by some firms. This pattern suggests that earnings management tends to be short-term in nature and does not significantly contribute to long-term economic value creation. From a Stakeholder Theory perspective, transparency and accountability are valued more highly than financial statement manipulation; therefore, earnings management may reduce investor trust in highly regulated industries such as mining. This result is consistent with prior studies reporting inconsistent or insignificant relationships between earnings management and financial performance [2], [3].

Effect of Capital Structure on Financial Performance

The test results show that Capital Structure has a probability value of 0.0365, indicating a positive and significant effect on Financial Performance. This suggests that a more optimal balance between debt and equity improves firm performance. An effective capital structure enables firms to utilize leverage to enhance profitability and economic value. Indonesia Stock Exchange (IDX) data show that the average Debt-to-Equity Ratio (DER) of mining companies ranged from 0.8 to 1.5 during 2020–2023 [1]. Firms such as ADRO and PTBA maintained DER levels below 1 to minimize risk, while BUMI recorded a high DER due to substantial debt burdens. When coal prices increased in 2022, highly leveraged firms still generated significant profits; however, their performance deteriorated in 2023 as commodity prices declined. In contrast, firms with lower DER levels demonstrated greater financial stability. From a Stakeholder Theory perspective, a healthy capital structure enhances shareholder welfare while maintaining creditor confidence. These findings are consistent with studies documenting a significant positive effect of capital structure on mining firm performance [4], [5].

Effect of Business Risk on Financial Performance

The test results indicate that Business Risk has a probability value of 0.0357, meaning it has a positive and significant effect on Financial Performance. This implies that firms can improve performance when high business risk is effectively managed. The mining sector faces substantial risks due to global commodity price volatility and government policy changes. The decline in average ROA from 8.47% in 2021 to 6.32% in 2023 illustrates the sector's sensitivity to external shocks [1]. Firms such as ADRO and PTBA sustained performance through diversification and cost efficiency, whereas firms heavily dependent on exports suffered during commodity price downturns. These findings indicate that business risk can become an opportunity when supported by strong risk mitigation strategies. From a Stakeholder Theory perspective, effective risk management reflects corporate responsibility toward stakeholders and helps maintain trust among investors, creditors, and regulators. This result is consistent with previous empirical evidence on the business risk–performance relationship [6]–[8].

Effect of Earnings Management on Financial Performance with Managerial Ownership as a Moderating Variable

The moderation test results show that Managerial Ownership has a probability value of 0.7868, indicating that it does not moderate the relationship between Earnings Management and Financial Performance. This means that the proportion of managerial share ownership does not strengthen or weaken the effect of earnings management on firm performance. This result is associated with the generally low level of managerial ownership in the mining sector, which is typically below 5%. Low ownership reduces managers' incentives to maintain financial reporting quality. From a Stakeholder Theory perspective, limited managerial ownership weakens long-term alignment with stakeholders. This finding is consistent with studies emphasizing that corporate governance mechanisms may be more effective than ownership structure in constraining earnings management practices [9], [10].

Effect of Capital Structure on Financial Performance with Managerial Ownership as a Moderating Variable

The moderation test shows a probability value of 0.1562, indicating that Managerial Ownership does not moderate the relationship between Capital Structure and Financial Performance. This implies that managerial share ownership does not substantially influence financing decisions in the mining sector. Capital structure decisions are primarily driven by operational needs and market conditions rather than ownership structure. With managerial ownership generally below 5%, managers have limited incentives to influence financing strategies. From a Stakeholder Theory perspective, financing decisions should account for the interests of all stakeholders; however, low ownership may encourage a more short-term managerial orientation. This finding is consistent with prior evidence reporting non-significant moderating effects in related contexts [11], [12].

Effect of Business Risk on Financial Performance with Managerial Ownership as a Moderating Variable

The moderation test results indicate a probability value of 0.1474, meaning that Managerial Ownership does not moderate the relationship between Business Risk and Financial Performance. Business risk in the mining sector is primarily determined by external factors such as commodity price volatility and government policy. The decline in ROA from 8.47% in 2021 to 6.32% in 2023 highlights the sector's sensitivity to external shocks [1]. Firms with high debt burdens, such as BUMI, are particularly vulnerable. The low level of managerial ownership limits management's influence on strategic risk decisions. From a Stakeholder Theory perspective, this condition may lead to short-term risk management that does not fully support sustainability. These findings are consistent with studies reporting a limited or insignificant moderating role of managerial ownership in the business risk–performance relationship [13], [14].

4. Conclusion

This study shows that Earnings Management does not have a significant effect on financial performance, whereas Capital Structure and Business Risk have a positive and significant effect. These findings confirm that optimal capital structure management and effective risk management directly contribute to improving the financial performance of mining companies. However, Managerial Ownership fails to moderate the relationship between Earnings Management, Capital Structure, and Business Risk on financial performance. The low level of managerial ownership weakens internal monitoring mechanisms, limiting their ability to reduce opportunistic behavior or influence financing and risk management decisions. As a result, financial performance is more strongly driven by operational policies and external industry factors rather than managerial share ownership.

This study is limited by the observation period of 2020–2024, which may not fully reflect the long-term dynamics of the mining sector. In addition, the moderating variable is restricted to Managerial Ownership

and does not account for other corporate governance mechanisms such as institutional ownership, board characteristics, or audit quality, while the research scope is limited to mining companies listed on the Indonesia Stock Exchange. Future studies are encouraged to extend the observation period and incorporate additional governance-related variables to provide a more comprehensive explanation of the relationships among variables. For practitioners, these findings emphasize the importance of optimizing capital structure and strengthening risk management systems, as well as enhancing managerial ownership alongside robust internal control mechanisms to improve profitability and financial stability.

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