

The Effect of Profitability on Firm Value with Corporate Social Responsibility (CSR) as A Moderating Variable in Mining Sector Companies Listed on The Indonesia Stock Exchange

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Abstract

The present study aims to analyse the effect of profitability on firm value with Corporate Social Responsibility (CSR) as a moderating variable in mining sector companies listed on the Indonesia Stock Exchange (IDX). The firm value is measured using Tobin's Q, while the profitability is proxied by Return on Assets (ROA). The measurement of CSR is achieved through content analysis, with the Global Reporting Initiative (GRI) standards serving as the underlying framework. The utilisation of secondary data from annual financial reports for the 2020–2024 period, in conjunction with the implementation of Moderated Regression Analysis (MRA), has yielded findings that suggest a positive and significant relationship between profitability and firm value. Furthermore, the present study demonstrates that CSR strengthens the positive effect of profitability on firm value, albeit to a moderate degree. The findings of this study indicate that in the mining sector, strong financial performance will be more effectively responded to by the market and translated into higher firm value when supported by good CSR practices and disclosure. The findings of this research offer strategic counsel to management, advising them to prioritise not only the enhancement of profitability, but also the cultivation of social legitimacy through the implementation of CSR initiatives. This approach is intended to ensure the maximisation of long-term firm value creation.

Keywords: Profitability; Firm Value; Corporate Social Responsibility; Best Linear Unbiased Estimator; Annual Report

1. Introduction

The mining sector plays a strategic role in the Indonesian economy as a major source of foreign exchange earnings and a key driver of downstream industries. Nevertheless, the performance of mining companies faces serious challenges arising from global commodity price volatility, stringent regulatory frameworks, and fluctuations in international demand, which collectively create uncertainty regarding operational sustainability and long-term value creation [1]. Firm value, commonly measured using Tobin's Q, reflects investors' perceptions of a company's prospects and financial health and serves as a primary indicator of management success in maximizing shareholder wealth [2,3].

Empirical data from basic material and mining companies listed on the Indonesia Stock Exchange during the 2021–2023 period indicate a stagnant or declining trend in firm value, despite increases in total assets for several issuers. This phenomenon is evident in companies such as Aneka Tambang Tbk. and Indocement Tunggal Prakarsa Tbk., where asset growth was not accompanied by an increase in market value. Moreover, several firms consistently recorded Tobin's Q values below one, signaling low market confidence in their long-term growth prospects and profitability. These conditions suggest that operational performance and asset ownership do not necessarily translate into firm value as recognized by the capital market.

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From a theoretical perspective, profitability is regarded as a fundamental determinant of firm value, as it reflects operational efficiency and the ability to generate future cash flows [4,5]. A number of empirical studies document a positive and significant relationship between profitability and firm value [6,7]. However, other studies report inconsistent findings, indicating that high profitability is not always positively perceived by the market [8,9]. Such inconsistencies imply the presence of contextual factors that influence how corporate earnings are translated into firm value.

Within the mining sector, which is characterized by substantial environmental and social risks, Corporate Social Responsibility (CSR) is viewed as a strategic factor that may moderate the relationship between profitability and firm value. CSR not only requires financial resources derived from profitability but also functions as a signal of social legitimacy and sustainability commitment that enhances investor confidence [10,11]. For firms with strong and credible CSR implementation, increases in profitability are more effectively translated into higher firm value. Conversely, for firms with low levels of CSR engagement, profits are often perceived as short-term gains with limited sustainability.

Based on these conditions, this study offers novelty by positioning CSR explicitly as a moderating variable—rather than as an independent or mediating variable—in the relationship between profitability and firm value within the Indonesian mining sector. This approach is expected to address inconsistencies in prior empirical findings and provide a more comprehensive understanding of the mechanisms underlying firm value creation. Practically, the findings are anticipated to inform managerial strategies and public policy formulation that extend beyond profit maximization to include the development of social legitimacy, thereby enhancing investment attractiveness and sustainable firm value amid global commodity market volatility.

2. Material and methods

This study employs a quantitative research approach with a causal research design, aiming to examine the effect of profitability on firm value and the moderating role of Corporate Social Responsibility (CSR). The analysis is grounded in positivist philosophy and utilizes inferential statistical techniques to test hypothesized relationships among variables [12]. The research focuses on mining companies listed on the Indonesia Stock Exchange (IDX), selected due to the sector's strategic economic role and its exposure to commodity price volatility, high capital intensity, and regulatory sensitivity.

The population consists of all mining sector firms consistently listed on the IDX during the 2020–2024 period. A purposive sampling technique was applied to select firms with complete and publicly available financial data denominated in Indonesian Rupiah, resulting in a balanced panel dataset. Secondary data were obtained from audited annual financial statements and stock price data published by the IDX and company websites.

Firm value is treated as the endogenous variable and is measured using Tobin's Q, calculated as the ratio of market value of equity plus book value of debt to total assets. Profitability serves as the exogenous variable and is proxied by Return on Assets (ROA). CSR is incorporated as a moderating variable and measured based on CSR disclosure indicators referring to Global Reporting Initiative (GRI) standards. To isolate the main relationships, leverage (Debt to Equity Ratio), sales growth, liquidity (Current Ratio), and dividend policy (Dividend Payout Ratio) are included as control variables.

Data analysis was conducted using Statistical Package for the Social Sciences (SPSS). Descriptive statistics were first applied to summarize the characteristics and distribution of the data [12]. To test the direct effect of profitability on firm value, multiple linear regression analysis was employed, allowing simultaneous examination of the independent variable while controlling for other financial factors [13]. Prior to hypothesis testing, classical assumption tests—including normality, multicollinearity, heteroskedasticity, and autocorrelation—were performed to ensure that the regression model met the Best Linear Unbiased Estimator (BLUE) criteria.

To examine the moderating role of CSR, this study applies Moderated Regression Analysis (MRA) by introducing an interaction term between profitability and CSR into the regression model [14]. The MRA procedure follows a hierarchical approach, beginning with a baseline model that includes profitability and control variables, followed by a full model incorporating CSR and the interaction term. All variables involved in the interaction were mean-centered to reduce multicollinearity concerns [15]. A significant coefficient of the interaction term indicates the presence of a moderation effect, while simple slope analysis is used to interpret whether CSR strengthens or weakens the relationship between profitability and firm value.

3. Results and discussion

This study was conducted on mining sector companies listed on the Indonesia Stock Exchange (IDX), which serves as the official institution facilitating securities trading in Indonesia following the merger of the Jakarta Stock Exchange and the Surabaya Stock Exchange in 2007. Since 2021, IDX has implemented the Indonesia Stock Exchange Industrial Classification (IDX-IC), under which the mining sector plays a strategic role as a key driver of the national economy. Nevertheless, this sector is characterized by fluctuating financial performance due to its sensitivity to global commodity prices, export demand, and corporate capital structures.

Table 1 Descriptive Statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Profitability	150	-0.4106	0.8510	0.259514	0.2396210
Corporate Social Responsibility	150	0.1099	0.4725	0.270185	0.0879203
Company Value	150	-7.5443	10.7907	1.273475	2.1817999
Valid N (listwise)	150				

Source: Author

The study employs secondary data with a total of 150 observations. The dependent variable is firm value, while profitability serves as the independent variable and corporate social responsibility (CSR) is incorporated as a moderating variable. Descriptive statistical analysis indicates that profitability has a mean value of 0.2595 with a standard deviation of 0.2396, CSR has a mean value of 0.2702 with a standard deviation of 0.0879, and firm value has a mean of 1.2735 with a standard deviation of 2.1818. These results suggest substantial data variation, particularly in firm value, reflecting heterogeneity in corporate performance and market perception among mining companies.

Table 2 Normality Test

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		150
Normal Parameters ^{a,b}	Mean	0E-7
	Std. Deviation	1.69201314
Most Extreme Differences	Absolute	0.150
	Positive	0.150
	Negative	-0.108
Test Statistic		0.150
Asymp. Sig. (2-tailed)		0.200 ^c
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

Source: Author

Prior to hypothesis testing using Moderated Regression Analysis (MRA), classical assumption tests were conducted. The normality test using the Kolmogorov-Smirnov method yielded an Asymp. Sig value of 0.200 (> 0.05), indicating that the residuals are normally distributed. Multicollinearity testing showed that all variables had tolerance values greater than 0.1 and Variance Inflation Factor (VIF) values below 10, confirming the absence of multicollinearity. The Durbin-Watson test produced a value of 1.818, which falls within the acceptable range, indicating no autocorrelation.

Furthermore, the heteroskedasticity test revealed that all independent variables had significance values above 0.05, suggesting that the regression model is free from heteroskedasticity problems. Overall, the model satisfies the Best Linear Unbiased Estimator (BLUE) criteria.

Table 3 Moderated Regression Analysis (MRA) Results

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-1.021	.472		-2.162	.032
	Profitabilitas	1.507	0.644	0.178	2.339	.021
	Corporate Social Responsibility	3.547	1.506	0.159	2.356	.020
	Profitabilitas*CSR	4.907	0.814	0.472	6.028	.000

a. Dependent Variable: Company Value

Source: Author

The results of the Moderated Regression Analysis demonstrate that profitability has a positive and significant effect on firm value, with a regression coefficient of 1.507 and a significance level of 0.021. Corporate social responsibility also exerts a positive and significant influence on firm value, as indicated by a coefficient of 3.547 and a significance level of 0.020. More importantly, the interaction term between profitability and CSR yields a coefficient of 4.907 with a significance level of 0.000, indicating that CSR significantly strengthens the relationship between profitability and firm value. These findings suggest that CSR functions as a quasi-moderator, meaning that it not only moderates the relationship between profitability and firm value but also independently influences firm value.

Table 4 F-test Results

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	282.704	3	94.235	32.253	0.000 ^b
	Residual	426.573	146	2.922		
	Total	709.277	149			

a. Dependent Variable: Company Value

b. Predictors: (Constant), Profitability*CSR, Corporate Social Responsibility, Profitability

Source: Author

Table 5 Coefficient of Determination Results

Model Summary ^b				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.413^a	0.170	0.165	1.9941494

a. Predictors: (Constant), Profitability

b. Dependent Variable: Company Value

Source: Author

The model feasibility test (F-test) shows a significance value of 0.000 (< 0.05), confirming that the regression model is statistically valid and that the independent variables jointly explain variations in firm value. However, the coefficient of determination analysis reveals an adjusted R² value of 0.165, indicating that 16.5% of the variation in firm value is

explained by profitability and CSR, while the remaining variation is attributable to other factors not included in the model.

These empirical findings support Signaling Theory, which posits that higher profitability serves as a positive signal to investors regarding operational efficiency, future cash flow prospects, and competitive advantage. Such signals stimulate increased demand for a company's shares, thereby enhancing firm value. This result is consistent with previous studies by Ye and Li (2024) and Puig et al. (2023), which report a significant association between profitability and firm performance [15,16]. Furthermore, the moderating role of CSR suggests that profitability enables firms to finance credible CSR initiatives, which act as strategic signals reflecting long-term commitment, ethical conduct, and corporate sustainability. This interpretation aligns with the findings of Fu and Ran (2025) and Song et al. (2024), who emphasize the linkage between financial performance and CSR engagement [17,18].

From a practical perspective, the results imply that maximizing firm value requires an integrated strategy that simultaneously enhances profitability and consistently implements CSR initiatives. Companies with strong profitability can achieve higher firm value when supported by effective and transparent CSR practices, as these enhance corporate reputation and investor confidence. For investors, the findings highlight the importance of considering both financial performance and CSR commitment in investment decision-making. For regulators, this study provides empirical support for policies encouraging greater transparency and standardization in CSR reporting to promote sustainable business practices.

Despite its contributions, this study has several limitations. The explanatory variables are limited in number, and the observation period covers only four years (2020–2024). Future research is therefore encouraged to incorporate additional variables and extend the study period to obtain more comprehensive and robust empirical evidence.

4. Conclusion

The study posits that profitability exerts a positive and significant effect on firm value, thereby underscoring the notion that a company's capacity to generate profits assumes a pivotal role in shaping market perceptions and augmenting shareholder wealth. Furthermore, the present study demonstrates that Corporate Social Responsibility (CSR) is a proven factor in the strengthening of the relationship between profitability and firm value. This finding suggests that profitability is more effectively translated into higher firm value when supported by credible and consistent CSR practices, as CSR enhances corporate legitimacy and investor confidence.

From a pragmatic perspective, the findings suggest that corporations ought not to prioritise short-term profit maximisation. Instead, there is a compelling argument for the integration of social and environmental responsibility into strategic and operational policies, with a view to achieving sustainable value creation. The enhancement of profitability, whilst concomitantly improving the quality of CSR implementation, can serve as an effective approach to increasing firm value in the long term.

The present study makes a contribution to the development of financial management and sustainability literature for academic purposes. It may also serve as a reference or teaching case for higher education. It is recommended that future research endeavours focus on expanding the sample size, extending the observation period, and incorporating additional variables. These measures are intended to enhance the robustness and generalisability of the findings.

Compliance with ethical standards

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Disclosure of Conflict of interest

The authors declare no conflicts of interest related to this manuscript.

Statement of ethical approval

The present research work does not contain any studies performed on animals or human subjects by any of the authors. The study exclusively utilizes secondary data obtained from publicly available sources, including audited financial statements and corporate disclosures.

Statement of informed consent

Informed consent was not required for this study as it did not involve the collection of primary data, surveys, interviews, or any information related to identifiable individuals.

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