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Research Paper

Sustainability Reporting, Profitability and Firm Value: The Moderating Role of Good Corporate Governance in Indonesian Energy Companies

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Abstract

Evidence on whether sustainability reporting raises firm value is mixed, and the role of board independence in strengthening this relationship is unclear for the Indonesian energy sector. This study examined the effects of sustainability reporting and profitability on firm value and tested good corporate governance (GCG), measured by the proportion of independent commissioners, as a moderator. The sample comprised 17 energy companies listed on the Indonesia Stock Exchange in 2020–2024 (85 company-year observations), selected purposively from 78 companies. Sustainability reporting was measured with a GRI-based disclosure index, profitability with return on assets (ROA) and firm value with price to book value (PBV). The data were analysed with multiple linear regression and moderated regression analysis. Sustainability reporting had no significant effect on firm value ($B = -0.390$; $t = -1.401$; $p = 0.165$), whereas profitability had a positive and significant effect ($B = 0.145$; $t = 3.990$; $p < 0.001$). The two variables were jointly significant ($F = 9.354$; $p < 0.001$) and explained 16.6% of the variation in firm value (adjusted $R^2 = 0.166$). GCG did not moderate the effect of sustainability reporting ($p = 0.594$) or profitability ($p = 0.419$) on firm value. Investors in the sampled energy companies valued earnings performance more than the extent of sustainability disclosure.

Keywords: Sustainability reporting; Profitability; Firm value; Good corporate governance; Energy sector.

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1. Introduction

Energy companies face growing expectations to disclose their environmental and social impacts together with their financial performance. Signalling theory holds that managers use credible information to distinguish their firms from others when investors cannot observe quality directly [1], and agency theory explains why shareholders need monitoring mechanisms to limit managerial opportunism [2]. Sustainability reports and profitability figures can both act as signals, while independent oversight can increase their credibility. Evidence on the value relevance of sustainability reporting is mixed. Sustainability reporting was positively related to the market value of Singapore-listed companies regardless of sector [3], and ESG disclosure had

a positive effect on the performance of European banks, including Tobin's q [4]. ESG disclosure improved operational, financial and market performance in manufacturing but had negative effects in banking [5]. In a panel of reporting and non-reporting firms, sustainability reporting was initially associated with a lower Tobin's q, an association that became more positive over time, and external assurance raised firm value [6]. In Indonesia, sustainability reporting had no significant effect on the firm value of energy companies in 2021–2023 [7] or in an earlier sample [8].

Corporate governance may condition these relationships. In Singapore, the proportion of independent directors increased both the probability and the quality of sustainability reporting [9], whereas in Indonesia the independent board of commissioners had no impact on sustainability report disclosure [10], and the board of directors and audit committee were the governance mechanisms that increased disclosure in mining companies [11]. Corporate governance has been confirmed as a determinant of sustainability disclosure in Indonesia [12]. Studies of GCG as a moderator of the link between financial performance and firm value also differ: GCG strengthened the effect of profitability on firm value in one study [13], and GCG has also been examined as a moderator of the effect of financial performance on the firm value of food and beverage companies [14].

The 2020–2024 period combined commodity price swings, the COVID-19 disruption and stronger attention to energy transition, which may have changed how investors interpret both earnings and non-financial disclosures in the energy sector. Existing Indonesian energy-sector studies examined sustainability reporting and governance as direct determinants [7], but have not tested whether board independence moderates the effects of sustainability reporting and profitability on firm value over this period. This study addresses three questions: (1) does sustainability reporting affect firm value; (2) does profitability affect firm value; and (3) does GCG moderate the effects of sustainability reporting and profitability on firm value in energy companies listed on the Indonesia Stock Exchange (IDX) in 2020–2024? The hypotheses are that sustainability reporting (H1) and profitability (H2) positively affect firm value and that GCG strengthens the effects of sustainability reporting (H3) and profitability (H4).

2. Method

Research Design, Population and Sample

This study used a quantitative explanatory design with secondary data from annual reports, sustainability reports and financial statements. The population comprised 78 energy-sector companies listed on the IDX in 2020–2024. Purposive sampling required companies to publish sustainability reports consistently and to provide complete data for all variables throughout the period. Sixty-one companies did not meet these criteria, leaving 17 companies and 85 balanced company-year observations (17 × 5 years).

Variables and Measurement

Table 1 summarises the operational definitions of the variables. Sustainability reporting was assessed against the GRI Standards [15], and GCG was proxied by board independence because independent commissioners are the monitoring body in Indonesia's two-tier board system.

Table 1. Operational definitions of the variables

Variable	Measurement	Scale
Sustainability reporting (X_1)	Number of GRI items disclosed ÷ total items assessed (SRDI)	Ratio
Profitability (X_2)	Net income after tax ÷ total assets × 100% (ROA)	Ratio (%)

Variable	Measurement	Scale
Firm value (Y)	Market price per share ÷ book value per share (PBV)	Ratio
Good corporate governance (M)	Independent commissioners ÷ total commissioners	Ratio

Source: Compiled by the authors.

Data Analysis

The analysis comprised descriptive statistics, classical assumption tests (Kolmogorov–Smirnov normality test, tolerance and variance inflation factor, and the Durbin–Watson statistic), multiple linear regression and moderated regression analysis in SPSS at a 5% significance level. The direct-effects model was:

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

The moderation model added GCG and its interaction terms with each independent variable, and a significant interaction coefficient was interpreted as evidence of moderation [16]:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 M + \beta_4 X_1 M + \beta_5 X_2 M + \varepsilon \quad (2)$$

where Y is firm value (PBV), X_1 is sustainability reporting, X_2 is profitability (ROA), M is GCG, α is the constant, β_1–β_5 are regression coefficients and ε is the error term.

3. Results and Discussion

Descriptive Statistics

Table 2 presents the descriptive statistics of the 85 observations.

Table 2. Descriptive statistics (n = 85)

Variable	Minimum	Maximum	Mean	Std. deviation
Sustainability reporting (SRDI)	0.36	0.99	0.6424	0.14163
Profitability (ROA, %)	−9.86	58.52	7.9285	11.00953
Firm value (PBV)	0.23	9.03	1.0900	1.18704
Good corporate governance	0.17	0.75	0.3976	0.15518

Source: Secondary data, processed with SPSS (2026).

On average, the sampled companies disclosed 64.24% of the assessed GRI items. Profitability varied widely, from a loss of 9.86% to a return of 58.52% on assets, and firm value ranged from 0.23 to 9.03 times book value, with an average close to book value (1.09). Independent commissioners made up 39.76% of the boards on average, and some companies had as few as 17%.

Classical Assumptions

The Kolmogorov–Smirnov test of the unstandardised residuals produced a statistic of 0.081 with a significance value of 0.200, so the residuals were normally distributed. Tolerance values of 0.959 for sustainability reporting and 0.995 for profitability and VIF values of 1.042 and 1.005 indicate no multicollinearity. The Durbin–Watson statistic of 1.684 lies between the lower bound (dL ≈ 1.60) and upper bound (dU ≈ 1.70) for 85 observations and two regressors [17], so the test is inconclusive with respect to first-order autocorrelation.

Hypothesis Tests

Table 3 presents the coefficients of the direct-effects model, and Table 4 the analysis of variance.

Table 3. Multiple regression coefficients (dependent variable: PBV)

Variable	B	SE	t	Sig.	Decision
Sustainability reporting (X_1)	−0.390	0.279	−1.401	0.165	H1 rejected
Profitability (X_2)	0.145	0.036	3.990	< 0.001	H2 accepted

Source: Secondary data, processed with SPSS (2026).

Table 4. Analysis of variance of the direct-effects model

Source	Sum of squares	df	Mean square	F	Sig.
Regression	5.899	2	2.950	9.354	< 0.001
Residual	25.858	82	0.315		
Total	31.757	84			

Source: Secondary data, processed with SPSS (2026). $R^2 = 0.186$; adjusted $R^2 = 0.166$.

Sustainability reporting had a negative but non-significant coefficient (B = −0.390; t = −1.401; p = 0.165), so H1 was rejected. Profitability had a positive and significant coefficient (B = 0.145; t = 3.990; p < 0.001), so H2 was accepted: a one-percentage-point increase in ROA was associated with a 0.145 increase in PBV. The two variables were jointly significant (F = 9.354; p < 0.001) and explained 18.6% of the variation in firm value (adjusted $R^2 = 0.166$).

In the moderated regression, the interaction between sustainability reporting and GCG (p = 0.594) and the interaction between profitability and GCG (p = 0.419) were not significant (Table 5), so H3 and H4 were rejected.

Table 5. Interaction tests in the moderated regression

Interaction term	Sig.	Decision
Sustainability reporting × GCG (X_1M)	0.594	H3 rejected
Profitability × GCG (X_2M)	0.419	H4 rejected

Source: Secondary data, processed with SPSS (2026).

Sustainability Reporting and Firm Value

Differences in the disclosure index were not associated with a statistically reliable difference in PBV after profitability was taken into account. This does not mean that sustainability information lacks value: a disclosure index measures how many items are reported, not the quality, credibility or outcomes of the underlying practices. The result agrees with the non-significant effect of sustainability reporting on the firm value of Indonesian energy companies in 2021–2023 [7] and with an earlier Indonesian study [8]. It differs from the positive relationships reported for Singapore-listed companies [3] and European banks [4]. Evidence that sustainability reporting is first a costly signal and gains value as investors learn to evaluate reports, and that external assurance adds credibility [6], offers an explanation: if investors still treat sustainability reports as compliance documents with limited assurance, more extensive disclosure need not raise firm value. The negative coefficient is also consistent with the adverse effect of ESG disclosure on market performance observed in some sectors [5]. The GRI Standards provide a common framework [15], but they do not by themselves make disclosures equally material or comparable.

Profitability and Firm Value

Higher ROA was associated with higher PBV, which supports the signalling view that earnings convey information about management effectiveness and future prospects [1]. The result is consistent with a study of Indonesian energy companies in 2022–2024 in which ROA had a positive and significant effect on PBV (B = 0.418; p < 0.001) [18], but differs from a study of seven energy companies in 2019–2023 in which ROA had no significant effect on firm value [19]. The

difference may reflect sample size and the periods covered, since commodity price cycles change both earnings and market valuations in the energy sector. Even so, profitability explained only part of the variation in PBV, and investors are likely to consider the persistence of earnings, capital expenditure, leverage and commodity outlooks.

The Moderating Role of Good Corporate Governance

The proportion of independent commissioners neither strengthened nor weakened the effects of sustainability reporting and profitability on firm value. This result is consistent with evidence that the independent board of commissioners did not affect sustainability report disclosure in Indonesia [10] and that board independence had no significant effect on the firm value of energy companies [7]. It differs from the finding that GCG strengthened the effect of profitability on firm value [13] and from the positive effect of independent directors on the quality of sustainability reporting in Singapore [9]. The proportion of independent commissioners captures board composition, not the authority, expertise or actual conduct of the commissioners, and corporate governance has been identified as important for the quality of ESG reporting [20].

Implications and Limitations

For energy companies, sound profitability remains the main driver of market valuation, while sustainability reporting should be managed as a tool for accountability and risk communication whose market value depends on the specificity, comparability and assurance of the information. Investors should read sustainability disclosures together with profitability, valuation and governance indicators, and regulators can increase the usefulness of reports by promoting consistent standards and external assurance. The study covers 17 companies selected purposively, uses a disclosure index rather than a quality measure, proxies governance by board composition only, and omits controls such as firm size, leverage and commodity prices. Firm value was highly dispersed (0.23–9.03), and the model explains 16.6% of its variation. Further studies should include these controls, measure disclosure quality and assurance, and use panel estimators.

4. Conclusion

Sustainability reporting has no significant effect on the firm value of energy companies listed on the IDX in 2020–2024, whereas profitability has a positive and significant effect, and the two variables together explain 16.6% of the variation in firm value. The proportion of independent commissioners does not moderate the effect of either sustainability reporting or profitability on firm value. Energy companies can support their market valuation by maintaining asset profitability and by improving the quality, comparability and assurance of their sustainability reports, and governance mechanisms should go beyond board composition to strengthen the credibility of corporate disclosures.

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Authors' contributions and responsibilities

Nur Febriani conceived the study, compiled the data, performed the analysis and drafted the manuscript. Agusmadi and Cut Delsie Hasrina supervised the research and critically reviewed the manuscript. All authors approved the final version.

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Availability of data and materials

The data were compiled from publicly available annual reports, sustainability reports and financial statements of the sampled companies; the compiled dataset is available from the corresponding author on request.

Competing interests

The authors have no financial or non-financial interests that could be perceived as influencing this study.

Ethical approval

Ethical approval was not required for this study because it analysed only publicly available secondary data from company annual and sustainability reports and did not involve human participants.

Declaration of generative AI use

A generative AI tool was used to improve the English language, restructure sections and standardise the reference format. The authors subsequently verified all statistical results, sources and statements and take full responsibility for the content of this article.

Additional information

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