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(Research Article)

Green Accounting, Environmental Performance, and Corporate Governance Effects on Energy Firm Performance in Indonesia (2021–2023)

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Abstract: This study aims to analyze the impact of the implementation of green accounting, environmental performance, and good corporate governance on company performance in the oil, gas, and coal subsector companies listed on the Indonesia Stock Exchange for the period 2021–2023. The research problem arises from the importance of sustainable business practices in the energy sector, which has a high environmental impact, yet has not consistently shown an improvement in company performance. This research uses a quantitative approach with secondary data in the form of annual reports and corporate sustainability reports. The sampling technique used the purposive sampling method with three criteria, resulting in 13 companies eligible for observation, with data analysis thru multiple linear regression and classical assumption testing and hypothesis testing (t-test and F-test). The research results indicate that green accounting and environmental performance do not have a significant impact on company performance, whereas good corporate governance has a positive and significant impact on company performance. These findings indicate that the improvement in company performance in the energy sector is more influenced by good corporate governance than merely the implementation of green accounting and environmental management. This study concludes that the integration of sustainability practices supported by strong governance is an important factor in improving the performance of energy sector companies in Indonesia.

Keywords: Company Performance; Energy Company; Environmental Performance; Good Corporate Governance; Green Accounting.

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1. Introduction

The oil, gas, and coal sectors are industries with significant economic contributions but also pose high risks to environmental damage. In the context of strengthening the energy transition issue post-pandemic period 2021–2023, regulatory and market demands for sustainable business practices are increasing. However, there is still a gap between the demands for implementing sustainable business practices and the company's orientation, which tends to focus on short-term financial gains. This condition raises the question of whether the implementation of green accounting, environmental performance, and good corporate governance is truly reflected in the company's performance, particularly in energy subsector companies listed on the Indonesia Stock Exchange (IDX).

Previous research has shown inconsistent results. Zalukhu et al. (2022) found that green accounting and environmental performance have a significant negative impact on financial performance, while Niandari & Handayani (2023) showed that green accounting has a significant positive impact on profitability. Other studies also found variations in results regarding the variable of good corporate governance, proxied thru the board of directors or the board of commissioners (Adnyani et al., 2020; A.Y. Sari et al., 2022). The differences in methods used, such as multiple linear regression and panel data regression, demonstrate strengths in testing causal relationships, but also reveal weaknesses in the form of differences in industry context and research periods that affect the consistency of the findings.

Based on the inconsistency, there is a research gap that demands a re-examination of the three variables in the context of industries with high environmental risk. This study aims to examine the influence of green accounting, environmental performance, and good corporate governance on company performance measured by Return on Assets (ROA) in 13 companies from the oil, gas, and coal subsector for the period 2021–2023.

The contribution of this research lies in the integration of three main variables into a single empirical model in the energy sector, providing the latest empirical evidence post-pandemic, and enriching the literature on the relationship between sustainability practices and corporate performance in Indonesia.

2. Literature Review

Company Performance

Performance is the overall result or actions of an individual or organization over a certain period compared to previously established standards, targets, or criteria. Moeheriono (2012) in Putri and Endiana (2020) states that performance or performance is a representation of the level of achievement in the implementation of a program or policy to achieve the goals, objectives, vision, and mission of the organization formulated thru strategic planning (Putri & Endiana, 2020).

Company performance is an economic category that reflects the company's ability to utilize its resources and wealth to achieve the established goals (Nabilla Octaviana Dirmansyah et al., 2022). Putri and Endiana (2020) emphasize that company performance reflects the level of success in achieving both financial and non-financial goals, such as profitability, operational efficiency, stakeholder satisfaction, and business sustainability. A company can be considered to have good performance if it is able to manage planning and goal achievement effectively, resulting in increased profitability.

Green Accounting

Green accounting is an accounting system that takes into account environmental costs in the company's financial statements. Niandari and Handayani (2023) explain that green accounting is a concept of applying accounting by considering environmental costs and their impact on the company. This implementation can provide benefits because it can reduce the potential costs of resource use and produce more environmentally wise decisions, while also enhancing the company's reputation in the eyes of stakeholders (Niandari & Handayani, 2023).

Previous research shows varied results. Santika et al. (2023), Wijayanti and Dondoan (2022), and Zalukhu et al. (2022) found that green accounting has a positive and significant impact on company performance. This indicates that the implementation of green accounting can improve company performance thru increased transparency and company reputation.

Environmental Performance

Environmental performance describes the level of success a company has in managing the environmental impact resulting from its operational activities. Wardani and Achyani (2025) state that environmental performance is related to the effectiveness of the company in managing environmental costs and maintaining operational sustainability.

Sari, Hamdi, and Karimi (2022) explain that environmental performance is related to good corporate governance mechanisms in influencing overall company performance. Companies with good environmental performance tend to show a commitment to social responsibility and business sustainability.

Good Corporate Governance

Good Corporate Governance (GCG) is a system that regulates and controls the company to create added value for all stakeholders. Widagdo and Chariri (2014) explain that the implementation of good corporate governance plays a role in improving the quality of company management thru effective oversight mechanisms.

Sari (2021) stated that the implementation of corporate governance affects company performance because it can minimize conflicts of interest between management and shareholders. Additionally, Sari, Hamdi, and Karimi (2022) found that good corporate governance mechanisms influence company performance. In this study, GCG is proxied by the board of commissioners.

3. Materials and Method

This research uses a quantitative approach with a causal design to examine the influence of Green Accounting, Environmental Performance, and Good Corporate Governance on Company Performance in the oil, gas, and coal sector companies listed on the Indonesia Stock Exchange (IDX) during the period 2021–2023.

The research population includes all companies in the oil, gas, and coal sectors listed on the IDX. The research sample was determined using purposive sampling techniques based on the following criteria: 1) Oil, gas & coal companies listed on the IDX from 2021-2023, 2) Oil, gas & coal companies listed on the IDX that reported financial statements for 2021-2022, 3) Oil, gas & coal companies listed on the IDX that published PROPER reports for 2021-2023. The data used are secondary data sourced from annual reports and sustainability reports published on the official website of the Indonesia Stock Exchange and the official pages of each company. The ratios of the variables used are:

The ratio of green accounting measurement (X1) uses the indicator:

Environmental Cost = $\frac{\text{Cost CSR}}{\text{Net Profit After Tax}}$

The environmental performance measurement ratio (X2) uses the PROPER ranking: gold score 5, green score 4, blue score 3, red score 2, black score 1.

The GCG ratio (X3) uses the number of board of commissioners.

Company Permormance Ratio (Y) i.e ROA = $\frac{\text{Net Profit After Tax}}{\text{Total Asset}}$

Data analysis was conducted using panel data regression to examine the influence of independent variables on the dependent variable. Before hypothesis testing, classical assumption tests are conducted to ensure the regression model meets statistical feasibility criteria. Hypothesis testing is carried out thru the t-test to determine the partial effect of each independent variable, the F-test to examine the influence, and the coefficient of determination (Adjusted R Square) to measure the model's ability to explain variations in company performance. This analysis structure is systematically arranged to produce valid and academically accountable empirical findings.

4. Results and Discussion

Description of Research Results

Descriptive analysis was conducted to examine the characteristics of each research variable. The data processing results show:

a. Green Accounting (X1): minimum value 0.00; maximum 25.20; mean 1.3821; standard deviation 4.48268.
b. Company Performance (X2): minimum value 3.00; maximum 5.00; mean 3.6410; standard deviation 0.74294.
c. Good Corporate Governance (X3): minimum value 3.00; maximum 15.00; mean 7.6154; standard deviation 3.13399.
d. Company Performance (Y): minimum value 0.00; maximum 282.48; mean 13.7349; standard deviation 55.04141.

This data shows that the variables of green accounting and company performance exhibit a very large variation, while environmental performance is relatively uniform and GCG is stable.

Classic Assumption Test

This test is a statistical requirement that must be conducted in ordinary least squares multiple linear regression analysis. This test is conducted thru normality tests, multicollinearity tests, and heteroscedasticity tests.

The Kolmogorov-Smirnov test shows a significance level of 0.200 > 0.05, indicating that the data is normally distributed.

Multicollinearity test, green accounting variable 0.905; environmental performance 0.984; good corporate governance 0.918 tolerance value > 0.10 and VIF value green accounting 1.105; environmental performance 1.016; good corporate governance 1.089 < 10, indicating no multicollinearity disturbance.

The heteroscedasticity test is conducted to examine whether there is a difference in the variation of residuals from one observation to another in a research model. The method to test for heteroscedasticity is by using the Glejser test. The results of the Glejser test show that the sig values for green accounting 0.749 > 0.05; environmental performance 0.703 > 0.05; GCG 0.139 > 0.05, which indicates that there are no signs of heteroscedasticity.

Multiple Linear Regression Analysis

Conducted to determine the influence of independent variables on the dependent variable. The results of the linear regression analysis equation are as follows:

$Y = 8.429 – 0.583X1 – 2.806X2 + 2.144X3 + e$

The equation can be interpreted, the constant value of 8.429 means that when the independent variable is considered zero, the company's performance predicted by the model is 8.429.

a. Green accounting (X1) coefficient -0.583, if green accounting increases by 1, the company's performance tends to decrease by 0.583.
b. Environmental performance (X2) coefficient -2.806, if environmental performance increases by 1, then company performance has the potential to decrease by 2.806.
c. Good corporate governance (X3) coefficient 2.144, if there is a 1 unit increase in GCG, then the company's performance increases by 2.144.

Hypothesis Testing (t-test)

The results of the Green accounting hypothesis test (X1) show that the calculated T value is smaller than the table t value, which is -1.281<2.030, and the significance value is greater than 0.05, which is 0.209>0.05, meaning H1 is rejected. Therefore, it can be concluded that green accounting does not have a significant positive effect on company performance.

The results of the hypothesis test for Environmental Performance (X2) show that the calculated T value is smaller than the t-table value, which is -1.065<2.030, and the significance value is greater than 0.05, which is 0.294>0.05, meaning H2 is rejected. It can be concluded that environmental performance does not have a positive and significant impact on company performance.

The results of the hypothesis test show that Good corporate governance (X3) has a T-statistic value greater than the t-table value, which is 3.316 > 2.030, and a significance value less than 0.05, which is 0.002 < 0.05, meaning H3 is accepted. Therefore, it can be concluded that good corporate governance, proxied by the board of commissioners, has a positive and significant impact on company performance.

Goodness Of Fit Test

The coefficient of determination test, based on the Adjusted R square value of 0.273, concludes that the regression model used can explain approximately 27.3%, while 72.3% is explained by factors outside this research model.

The F statistical test of this study shows that the F value is 5.757 and the significance value is 0.003 < 0.05, meaning that multiple linear regression is suitable for use in this study.

Discussion

The Influence of Green Accounting Implementation on Company Performance

The test results show that Green Accounting has a negative and insignificant effect on company performance, leading to the rejection of H1. This finding indicates that the implementation of Green Accounting has not yet been able to significantly improve company performance.

The results of this study are in line with the research by Cahyaningt & Yas (2022), which states that Green Accounting, proxied by environmental costs, has a negative and insignificant effect on ROA. This condition indicates that the implementation of Green Accounting in the energy sector companies tends to be administrative and has not yet been fully integrated into the main business strategy. Additionally, short-term environmental cost expenditures can increase the company's operational burden, thus failing to provide a positive impact on profitability or the company's value in the eyes of investors.

The Influence of Environmental Performance on Company Performance

The test results show that Environmental Performance has a negative and insignificant effect on company performance, thus H2 is rejected. This indicates that the improvement in environmental performance has not yet been able to significantly enhance company performance.

These findings are consistent with the research by Santika et al. (2023), which states that environmental performance has a negative and insignificant effect on ROA. The results indicate that improvements in environmental management have not yet directly impacted the enhancement of the company's financial performance. One of the reasons is the still low market appreciation for the company's environmental activities, as well as the high costs that must be incurred to improve environmental performance, which in the short term can suppress the company's profits before the long-term benefits are seen.

The Influence of Good Corporate Governance on Company Performance

This result is in line with the research by A. Y. Sari et al. (2022) which states that Good Corporate Governance, proxied by the board of commissioners, has a positive and significant impact on company performance. These findings indicate that the more effective the supervisory function and strategic direction carried out by the board of commissioners, the better the company's performance. The role of the board of commissioners in maintaining transparency, accountability, and stakeholder interests has proven capable of enhancing decision-making effectiveness and driving the company's performance sustainably.

Unlike the previous two variables, Good Corporate Governance, proxied by the board of commissioners, has a positive and significant impact on company performance, thus H3 is accepted.

5. Conclusion

This study aims to examine the influence of Green Accounting, Environmental Performance, and Good Corporate Governance on Company Performance in the oil, gas, and coal sector companies listed on the Indonesia Stock Exchange for the period 2021–2023. The results of the panel data regression analysis show that Green Accounting and Environmental Performance have a negative and insignificant effect on company performance, thus both hypotheses are rejected. Conversely, Good Corporate Governance, proxied by the board of commissioners, has a positive and significant effect on company performance, thus the third hypothesis is accepted.

These findings indicate that environmental practices, whether thru the implementation of Green Accounting or the enhancement of Environmental Performance, have not yet been able to directly impact the improvement of the company's performance during the observation period. This indicates that these practices are likely not yet strategically integrated into the company's operational activities and decision-making processes. On the other hand, the presence and active role of the board of commissioners as part of the governance mechanism have proven capable of enhancing the effectiveness of supervision and the quality of strategic decisions, thereby positively impacting the company's performance.

Theoretically, this research emphasizes the importance of corporate governance as a more consistent factor in influencing performance compared to environmental aspects in the short term. Practically, the results of this study provide implications for management to strengthen oversight functions and integrate sustainability practices into business strategies. The limitations of the research lie in the scope of the sector and the limited observation period, as well as the use of a single proxy for Good Corporate Governance. Therefore, it is recommended that future research expand the scope and variables to obtain more comprehensive results.

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