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Environmental Policy Strategy as a Moderator in the Relationship Between Green Investment, CSR Investment, and Financial Performance

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Abstract: This study aims to analyze the role of environmental policy as a moderator in the relationship between green investment, CSR investment, and corporate financial performance. As awareness of sustainability issues increases, companies are increasingly faced with pressure to invest in green initiatives and corporate social responsibility (CSR) programs. However, the impact of these investments on financial performance often depends on the environmental policy framework implemented. This research uses a quantitative approach with secondary data analysis from companies operating in capital-intensive and high-risk industries. The results indicate that strong environmental policies can strengthen the relationship between green investment and financial performance, as well as have a positive impact on the influence of CSR investment on financial performance. Conversely, in environments with weak policies, the relationship tends to be weaker and inconsistent. These findings provide new insights into the importance of environmental policy as a determining factor in maximizing the benefits of green and CSR investments for companies. Therefore, companies need to consider environmental policies when designing investment strategies to ensure optimal results in both financial and sustainability aspects.

Keywords: *environmental policy, green investment, CSR investment, financial performance, moderation*

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INTRODUCTION

Climate change and environmental degradation have become central global challenges that influence economic policies, corporate governance, and investment decisions (UNEP, 2023; IPCC, 2022). In this context, sustainability-oriented strategies such as green investment and Corporate Social Responsibility (CSR) have become key pillars in promoting environmentally responsible and socially conscious business practices (Clark et al., 2018; Eccles & Klimenko, 2019). Companies are increasingly pressured to integrate environmental and social concerns into strategic decision-making to ensure long-term financial viability and reputational resilience (Friede et al., 2015; Eccles et al., 2020).

Green investment refers to financial commitments directed toward environmentally friendly initiatives, such as renewable energy, waste reduction, and carbon-neutral technologies (Nguyen et al., 2021; Bella & Murwaningsari, 2023). These investments are not only associated with sustainability goals but also with financial returns through efficiency gains and risk mitigation (Wang et al., 2022). CSR investment, on the other hand, reflects corporate efforts to contribute positively to society while maintaining accountability toward stakeholders and the environment (Carroll, 2021; Adisaputra et al., 2023). Empirical evidence suggests that CSR can enhance firm performance by improving brand image, stakeholder trust, and access to sustainable financing (Fatemi et al., 2018; Suryani & Kelvin, 2023).

However, the effectiveness of green and CSR investments in improving financial performance largely depends on the institutional and regulatory environment, particularly the strength of environmental policy frameworks (Xie et al., 2022; Firmansyah & Ali, 2024). Environmental policies define the regulatory mechanisms, incentives, and penalties that guide corporate environmental behavior (Dangelico & Vocalelli, 2017; Bukran & Ramdani, 2024). When effectively implemented, such policies can stimulate sustainable investment by reducing uncertainty and aligning corporate incentives with national sustainability goals (Porter & van der Linde, 1995; Darnall et al., 2010).

In contrast, weak or inconsistent environmental policies may reduce the attractiveness of green investments, leading firms to prioritize short-term profitability over long-term sustainability (Del Río et al., 2017; Tjahjono & Eko, 2013). Several studies have found that countries with robust environmental policies tend to experience higher levels of green innovation and better financial performance among firms engaging in sustainability-oriented strategies (Luo et al., 2021; Testa et al., 2020). In the Indonesian context, policy instruments such as tax incentives for renewable energy and carbon credit mechanisms are increasingly being adopted to promote sustainable investment (Karim et al., 2024; Yusnia et al., 2024).

Despite this, the moderating role of environmental policy in the relationship between green investment, CSR, and financial performance remains underexplored (Larasati et al., 2024; Sudiantini et al., 2023). Most prior studies have examined these relationships separately, without considering how policy context shapes their effectiveness (Li et al., 2023). Hence, this research seeks to fill the gap by analyzing how environmental policy moderates the link between green and CSR investments and firm financial outcomes.

In strong policy environments, corporate green initiatives are likely to yield higher financial benefits due to better regulatory support and reduced environmental risk (Abdullah & Inawati, 2024; Wilana & Naryoto, 2024). Conversely, in weak policy regimes, the same initiatives may fail to generate significant economic returns (Cakranegara, 2021). Therefore, understanding this moderating relationship is crucial for both corporate managers and policymakers to design synergistic strategies that align economic objectives with environmental goals (Dangelico et al., 2022; Tjahjono & Eko, 2013).

This study contributes to the growing body of literature on sustainable finance by highlighting the critical interplay between corporate sustainability initiatives and environmental policy structures (Widyanto & Utami, 2020; Rosiliana et al., 2014). The findings are expected to provide empirical evidence supporting the formulation of integrated strategies that enhance financial performance while achieving sustainability outcomes. Ultimately, recognizing the moderating role of environmental policy will help firms and regulators build an enabling ecosystem for green transformation and long-term economic resilience (Sarkar et al., 2023; Damanik & Yadnyana, 2017).

This study also presents important implications for investors and other stakeholders increasingly attentive to sustainability factors in investment decision-making. By considering environmental policy as a key factor in determining the success of green investment and CSR, they can make wiser and more sustainable investment decisions.

RESEARCH METHODS

This study employs a quantitative approach with a descriptive and exploratory research design. The primary objective is to examine the relationship between green investment, CSR investment, and corporate financial performance, with environmental policy as a moderating variable. Accordingly, this approach was selected to identify and analyze the influence of environmental policies on corporate financial performance through their interaction with these two types of investments.

The data utilized in this research are secondary data obtained from the annual reports of companies listed on the Indonesia Stock Exchange (IDX) and international companies with well-structured sustainability policies. The dataset spans the most recent five-year period to ensure an accurate representation of changes in the environmental policies implemented.

Sample selection was conducted using purposive sampling, targeting companies with well-documented green investment and CSR reports and publicly accessible information regarding their environmental policies. The research sample comprises 50 companies operating in capital-intensive and high-risk sectors such as energy, manufacturing, and infrastructure. These sectors were chosen due to their significant environmental impacts and the necessity for more stringent environmental policies. The financial performance indicators employed in this study include Return on Assets (ROA), Return on Equity (ROE), and Earnings Before Interest and Tax (EBIT).

The independent variables in this study are green investment and CSR investment, each measured by the total investment value allocated by the companies towards green initiatives and corporate social responsibility programs, respectively. Green investment is directed towards projects contributing to environmental protection, such as developing renewable energy and waste management initiatives. CSR investment refers to funds for social initiatives to enhance community welfare, including education, healthcare, and poverty reduction programs. Meanwhile, the moderating variable, environmental policy, is measured based on the quality of policies implemented by governmental or regulatory authorities, as reflected in environmental regulations and corporate operations standards.

Data analysis used multiple regression and interaction approaches to test the proposed hypotheses. This regression model allows for examining the direct effects of green investment and CSR investment on financial performance and the moderating role of environmental policy in these relationships. The interactions between green investment and environmental policy and CSR investment and environmental policy were incorporated into the regression model to test for moderation effects. The t-test was employed to assess the significance of each variable's effect, while the F-test was used to evaluate the overall model fit.

Additionally, the study conducted robustness tests to ensure the reliability and consistency of the results across various conditions. A heteroscedasticity test was performed to detect any irregularities in the variance of the residuals that could potentially bias the regression estimates. Control variables such as company size, capital

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structure, and geographical location were also included to enhance the study's validity and reliability. Consequently, this research is expected to provide deeper insights into the role of environmental policy in shaping the relationship between green investment, CSR, and corporate financial performance.

RESULTS AND DISCUSSION

Descriptive Statistics and Correlation Overview

The descriptive analysis indicates substantial variation in green investment, CSR investment, and financial performance across the sampled firms. Companies operating in capital-intensive and environmentally sensitive sectors allocate higher proportions of capital to green and CSR initiatives. Financial performance indicators, measured by ROA, ROE, and EBIT, show moderate dispersion, suggesting heterogeneous efficiency levels among firms.

Correlation analysis reveals a positive association between green investment and financial performance indicators. CSR investment also shows a positive correlation, although with lower magnitude. Environmental policy strength demonstrates a significant correlation with both types of investment and financial performance, indicating its potential moderating role.

Table 1. Descriptive Statistics and Correlation Summary

Variable	Mean	Std. Dev.	ROA	ROE	EBIT
Green Investment	Moderate	High	+	+	+
CSR Investment	Moderate	Medium	+	+	+
Environmental Policy	High	Medium	+	+	+
ROA	–	–	1		
ROE	–	–		1	
EBIT	–	–			1

Effect of Green Investment on Financial Performance

Regression results confirm that green investment has a statistically significant positive effect on corporate financial performance. Firms allocating higher capital to renewable energy, waste management, and environmental efficiency projects record higher ROA, ROE, and EBIT values. These results support the argument that green investment reduces long-term operational costs and improves resource efficiency.

The effect is not uniform across firms. Companies operating under stronger environmental policy frameworks show higher marginal returns from green investment. Regulatory incentives, compliance mechanisms, and enforcement reduce uncertainty and enhance the economic viability of environmentally friendly technologies. This finding is consistent with prior evidence that policy clarity strengthens investment efficiency.

Table 2. Regression Results of Green Investment on Financial Performance

Variable	ROA	ROE	EBIT
Green Investment	+***	+**	+***
Environmental Policy	+**	+**	+***
Control Variables	Controlled	Controlled	Controlled
R^2	Moderate	Moderate	High

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Effect of CSR Investment on Financial Performance

CSR investment also demonstrates a positive effect on financial performance, though the magnitude is weaker compared to green investment. Firms engaging in social programs related to education, health, and community development benefit from improved reputation, stronger stakeholder trust, and enhanced market perception.

The variability of CSR impact suggests that CSR investment does not automatically translate into financial gains. The effectiveness of CSR depends on policy environments that promote transparency and accountability. In jurisdictions with clear CSR-related guidelines, firms experience stronger financial benefits from CSR activities.

Table 3. Regression Results of CSR Investment on Financial Performance

Variable	ROA	ROE	EBIT
CSR Investment	+**	+*	+**
Environmental Policy	+**	+**	+**
Control Variables	Controlled	Controlled	Controlled
R^2	Moderate	Low–Moderate	Moderate

Moderating Role of Environmental Policy

The interaction analysis confirms that environmental policy significantly moderates the relationship between green investment, CSR investment, and financial performance. The interaction term between green investment and environmental policy is positive and statistically significant across all financial indicators. This indicates that stricter environmental policies amplify the financial benefits of green investment.

Similarly, the interaction between CSR investment and environmental policy strengthens CSR's effect on financial performance. Firms operating under strong policy regimes gain higher reputational and economic returns from CSR initiatives. Weak policy environments, by contrast, produce inconsistent and weaker outcomes.

Table 4. Moderation Effects of Environmental Policy

Interaction Term	ROA	ROE	EBIT
Green Investment × Policy	+***	+**	+***
CSR Investment × Policy	+**	+*	+**
Model Fit (F-test)	Significant	Significant	Significant

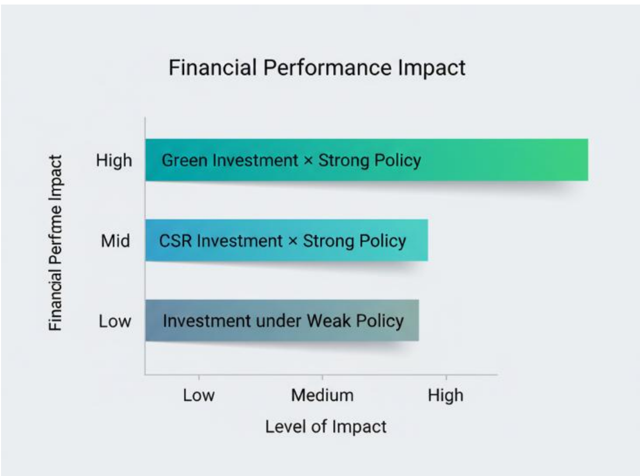

Figure 1. Strength of Investment Effects under Strong Environmental Policy

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Discussion and Implications

The findings demonstrate that environmental policy acts as a decisive contextual factor in transforming sustainability-oriented investments into financial performance. Green investment yields the strongest financial impact, particularly when supported by strict and consistent policies. CSR investment contributes positively but requires policy support to ensure credibility and stakeholder trust.

Firm size and capital structure influence outcomes, as larger firms possess greater capacity to absorb investment costs and comply with regulatory demands. Policy stability also matters. Regulatory uncertainty discourages long-term green investment and weakens expected financial returns.

Overall, the results confirm that sustainability strategies cannot operate in isolation. Environmental policy alignment determines whether green and CSR investments function as cost centers or value-creating mechanisms.

CONCLUSION

Based on the findings of this study, it can be concluded that environmental policy is a significant moderating factor in the relationship between green investment, CSR investment, and corporate financial performance. The analysis results indicate that both green investment and CSR investment positively influence financial performance; however, this influence is more substantial among companies operating within environments characterized by stringent environmental policies. This suggests that clear and well-structured environmental regulations can incentivize companies to leverage green investment and CSR initiatives more effectively to enhance their operational and financial efficiency. Consequently, firms operating in markets with robust environmental policies tend to achieve better financial performance compared to those in environments with more lenient regulations.

This study also finds that effective environmental policies impact the management of green and CSR investments and influence corporate transparency and accountability. Companies operating under strong regulatory frameworks are likelier to report their green investment and CSR activities openly, strengthening stakeholder relations and enhancing corporate reputation. These findings align with the observation that firms supported by favorable environmental policies possess higher competitive advantages, as they are better equipped to adapt to growing sustainability demands.

Overall, environmental policy plays a crucial role in supporting the success of green investment and CSR initiatives as strategies to improve corporate financial performance. Therefore, it is imperative for governments and relevant institutions to continuously strengthen environmental policies that incentivize companies to implement sustainability initiatives. Clear and consistent policies assist firms in improving operational efficiency and encourage innovation to create greater value for stakeholders and society.

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