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# Does Size Still Matter? Reassessing The Roles Of Firm Scale, Leverage And ESG In Driving Corporate Performance

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***Abstract:*** *This study investigates the moderating effects of leverage and firm size on the relationship between Environmental, Social, and Governance (ESG) performance and corporate financial performance. This study uses a quantitative approach with a causal design. Secondary data were obtained from Bloomberg Database during the 2016–2023 period. The research sample consisted of 47 non financial companies listed in Indonesia Stock Exchange or 376 company-year observations selected using a purposive sampling method. Financial performance variables were measured by return on equity (ROE), leverage by the debt-to-equity ratio (DER), company size by the natural logarithm of total assets, and ESG by the total ESG Disclosure score. Data analysis was performed using moderated regression analysis assisted (MRA) by SPSS software. The results show that ESG has a significant negative effect on ROE, indicating that implementing sustainability practices still has the potential to incur costs that depress short-term profitability. Conversely, DER has a significant positive effect on ROE, indicating that proportional use of debt can increase returns on equity. Moderation tests indicate that only DER moderates the relationship between ESG and ROE, while company size has no significant effect, either as a direct predictor or moderator. These findings emphasize that sustainability and funding structure must be viewed strategically and in balance. ESG commitments coupled with an efficient capital structure can create more optimal financial performance amidst the transition to a sustainable economy.*
***Keywords:*** *ESG, Financial Performance, Firm Size, Leverage, MRA*

## INTRODUCTION

The global shift towards sustainable finance has made Environmental, Social, and Governance (ESG) a key component in corporate decision-making. ESG integration reflects a company's commitment to responsible business practices while significantly impacting financial performance. Yiheng et al. (2024) show that both overall ESG performance and each of its dimensions (Environmental, Social, and Governance) are positively associated with firms' financial performance. Another notable finding is that this positive relationship is stronger in non-state-owned enterprises compared to state-owned ones. An increase in ESG scores is directly related to better public reputation and positive market perception, which ultimately improves firms' financial positions. These findings confirm that ESG is not only an ethical instrument but also a strategic indicator that provides tangible benefits to companies and stakeholders.

The implementation of effective ESG practices also contributes to higher profitability. De Lucia et al. (2020) found that public companies in Europe that consistently apply ESG principles show superior financial performance compared to other companies. While the impact varies between industries, their study reinforces that ESG drives positive long-term financial returns. In the context of sustainable investing, Escrig-Olmedo et al. (2017) emphasized that investors increasingly view ESG criteria as essential in ensuring stable and sustainable financial performance, encouraging companies to strengthen governance and social responsibility.

Furthermore, the temporal dynamics of ESG on financial performance are increasingly relevant across sectors. Morri et al. (2024) proved that in the real estate sector, particularly within REITs, ESG performance plays a crucial role in determining financial returns. In emerging markets, Shakil (2019) found that improved ESG performance correlates positively with market rewards, although the magnitude varies across regions. In line with this, Almeyda and Darmansya (2019) highlighted the rise of global ESG investments from USD 17 trillion to USD 28 trillion, signaling a shift toward a sustainability-oriented financial paradigm. Xie et al. (2019) and Vortelinos et al. (2024) also affirmed that strong ESG implementation enhances financial resilience, reduces market volatility, and increases investor confidence.

In Indonesia, ESG development aligns with the OJK regulation No. 51/POJK.03/2017 which mandates sustainability reporting for financial institutions and public issuers. This regulation encourages transparency and accountability by requiring companies to disclose environmental, social, and governance practices. Following this implementation, ESG adoption has grown significantly, although reporting standards and consistency remain major challenges.

The relationship between ESG and financial performance continues to be a central topic in corporate accountability studies. Findings are mixed positive, negative, or insignificant depending on context and methodology. Jorgji et al. (2024) found that effective ESG disclosure improves financial performance by increasing stakeholder trust and corporate reputation. However, the relationship is not always linear. Bahadır and Akarsu (2024) argued that methodological differences can lead to insignificant relationships, while Luo et al. (2024) reported similarly insignificant findings. Velte (2019) also noted sectoral differences in how ESG influences performance.

Governance-related factors may strengthen ESG's effect on performance. Tang et al. (2025) showed that government subsidies and analyst coverage can amplify ESG's impact. Ruan and Liu (2021) and Debnath and Chellasamy (2024) added that inconsistencies in empirical results are often due to methodological differences and moderator variables.

Internal financial characteristics including firm size and leverage also shape the ESG–performance nexus. Large firms tend to achieve higher ESG scores due to better financial capacity, as argued by Joshi and Joshi (2024). Conversely, high leverage may weaken ESG's positive impact because debt obligations reduce firms' flexibility (Joshi & Joshi, 2024). Futri et al. (2025) affirmed that firms with strong sustainability practices tend to have lower debt ratios. Junius et al. (2020) and Azizah and Haron (2024) also found size and leverage to be significant control variables. Ramadhan et al. (2024) emphasized that optimal capital structure management is crucial for maximizing ESG benefits in emerging markets.

This study examines non-financial public companies listed on the IDX to analyze how ESG implementation influences financial performance and how firm size and leverage moderate this relationship. Recent global evidence generally shows a positive association between ESG and performance, but the strength varies across markets and firm sizes (Chen, 2023). Some prior studies used OLS or panel regressions, with mixed results, indicating the need to account for firm heterogeneity (Veeravel et al., 2024).

\Previous approaches provide advantages such as estimating average ESG effects while controlling for unobserved heterogeneity but also have limitations. Many do not model key internal moderators like size and leverage, leading to omitted variable bias. Differences in ESG data sources further contribute to inconsistent findings (Narula et al., 2024).

The main research questions are: (1) whether ESG, firm size, and leverage improve financial performance; (2) whether firm size strengthens ESG's impact; and (3) whether leverage weakens ESG's impact. The proposed solution uses moderated regression analysis (MRA) with ESG×Size and ESG×Leverage interactions. This approach incorporates Stakeholder Theory, Resource-Based View, and Trade-Off Theory to build a comprehensive analysis. The study contributes by providing updated Indonesian evidence, clarifying the role of internal moderators, and offering practical implications.

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## METHOD

This research adopts a quantitative design grounded in a causal framework. It combines time-series data from 2016 to 2023 with cross-sectional observations from 47 non-financial firms listed on the Indonesia Stock Exchange (IDX), producing 376 firm-year data points. The secondary data were collected from the Bloomberg Database, and the sample was determined through a purposive sampling method to ensure that the selected companies were relevant to the study's analytical objectives. The dependent variable, financial performance, was proxied by return on equity (ROE), while ESG serving as the independent variable was represented by the total ESG disclosure score. Two moderating variables were introduced: firm size, expressed as the natural logarithm of total assets, and leverage, represented by the debt-to-equity ratio (DER).

| Variables | Formula | Source |
|---|---|---|
| Return on equity (ROE) | ROE = Net profit after taxes / total shareholder equity | Uddin et al.(2022) |
| ESG | Total ESG Disclosure Score | Mahmood et al. (2025), Ahmed & Khalaf (2025) |
| Firm size (SIZE) | SIZE= Ln (total assets) | Natsir & Yusbardini (2020) |
| Leverage (LEV) | LEV = Total debt / total equity | Natsir & Yusbardini (2020), Uddin et al.(2022) |

***Table 1.*** *Research Variables*

The study utilized multiple linear regression incorporating interaction terms, applying the moderated regression analysis (MRA) technique to test the moderating relationships. All statistical computations were performed using SPSS software.

The regression equation used is:

$$ROE_{it} = \beta 0_{it} + \beta_1 ESG_{it} + \beta 2 SIZE_{it} + \beta 3 LEV_{it} + \beta 4 ESG*SIZE_{it} + \beta 5\ ESG\ *LEV_{it} + \varepsilon_{it}$$

## RESULTS AND DISCUSSION

| Variable | Mean | Max | Min | Standard deviation |
|---|---|---|---|---|
| ESG | 43.45 | 74.39 | 15.45 | 12.57 |
| Size | 30.75 | 33.73 | 26.79 | 1.59 |
| DER (%) | 82.06 | 839.85 | 0.24 | 90.43 |
| ROE (%) | 10.84 | 99.76 | 0.07 | 10.02 |

***Table 2.*** *Research Variables*

*Source: processed secondary data (2025)*

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Table 2 presents the descriptive statistics of the study variables. The ESG score shows an average value of 43.45, with a maximum of 74.39, a minimum of 15.45, and a standard deviation of 12.57. Meanwhile, Firm size has a mean of 30.75, ranging from 33.73 to 26.79 with a of 1.59. The Debt-to-Equity Ratio (DER) exhibits an average value of 82.06%, with the highest and lowest values recorded at 839.85% and 0.24%, respectively, and a standard deviation of 90.43%. In contrast, Return on Equity (ROE) shows an average of 10.84%, a maximum of 99.76%, a minimum of 0.07%, and a standard deviation of 10.02%.

| Test | Sig. | Durbin Watson | VIF | Conclusion |
|---|---|---|---|---|
| Normality | 0,062 | | | Normal residual |
| Multicollinearity | | | | |
| ESG | | | 1.182 | No multicollinearity |
| Size | | | 1.099 | No multicollinearity |
| DER | | | 1.181 | No multicollinearity |
| ESG*Size | | | 1.128 | No multicollinearity |
| ESG*DER | | | 1.169 | No multicollinearity |
| Heteroscedasticity | | | | |
| ESG | 0.587 | | | No Heteroscedasticity |
| Size | 0.630 | | | No Heteroscedasticity |
| DER | 0.761 | | | No Heteroscedasticity |
| ESG*Size | 0.942 | | | No Heteroscedasticity |
| ESG*DER | 0.812 | | | No Heteroscedasticity |
| Autocorrelation | | 1.87 | | No autocorrelation |

***Table 3.*** *Classical Assumption Test Results*

*Source: processed secondary data (2025)*

Table 3 indicates that the residuals are normally distributed, as the significance value (p-value) exceeds 0.05. Multicollinearity is not present since all independent variables have Variance Inflation Factor (VIF) values below 10. Similarly, the absence of heteroskedasticity is confirmed, with all independent variables showing significance levels greater than 0.05. Furthermore, no autocorrelation is detected, as the Durbin Watson statistic of 1.87 falls within the acceptable range of 1.50 to 2.50.

| Variable | Mean | Coef. | Sig. | Interpretation |
|---|---|---|---|---|
| Probability (F-statistic) | 0.000 | | | |
| Adjusted $R^2$ | 0,2137 | | | |
| ESG | | -0.122 | 0.003 | ESG negatively affects ROE |
| Size | | 0.457 | 0.145 | Size has no significant effect on ROE |
| DER | | 0.015 | 0.008 | DER has a positive effect on ROE |

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| | | | |
|---|---|---|---|
| ESG*Size | 0.0016 | 0.944 | Firm Size does not moderate the influence of ESG on ROE |
| ESG*DER | -0.0026 | $1.42\times10^{-9}$ | DER moderates the influence of ESG on ROE |

***Table 4.*** *Hypothesis Test Results*

*Source: processed secondary data (2025)*

Table 4 shows that:

1. ESG has a negative and significant influence on ROE (β = -0.122; p = 0.003), suggesting that increased ESG tends to lower ROE so that hypothesis 1 is not supported.
2. DER has a positive and significant influence on ROE (β = 0.015; p = 0.008), meaning that the higher the DER, the ROE also tends to increase so that hypothesis 2 is supported.
3. Size had no significant influence on ROE (p = 0.145), so it did not act as a strong direct predictor so that hypothesis 3 is not supported.
4. The ESG interaction × Size was not significant (p = 0.944), meaning that Size did not moderate the relationship between ESG and ROE so that hypothesis 1 is not supported.
5. The ESG interaction × DER showed very significant results ($p = 1.42 \times 10^{-9}$), so it can be concluded that DER moderates the influence of ESG on ROE so that hypothesis 5 is supported.
6. The adjusted R squared of 0.2137 means that company performance is influenced by ESG, firm size and leverage by 21.37%, while the remaining 78.63% is influenced by factors not discussed in this study.

**The Influence of ESG on Corporate Financial Performance**

Environmental, Social, and Governance (ESG) can have a negative influence on financial performance because its implementation often results in a large cost burden and short-term effects that are not aligned with profitability goals. Hu & Wang (2024, cited in Yiheng et al., 2024) found that ESG can negatively impact financial performance because the environmental dimension negatively impacts corporate profitability.

Furthermore, market dynamics and investor perceptions also amplify the negative impact of ESG. Glova and Panko (2025) added that environmental costs often outweigh short-term operational benefits, thus weakening corporate profitability. Meanwhile, governance factors did not show a significant effect on profitability, and in terms of market value, social factors were negatively correlated.

Moussa & Elmarzouky (2020) showed that ESG disclosure actually increased the cost of capital for non-financial companies in the UK. This means that the higher the level of ESG reporting, the higher the cost of capital a company must bear. These findings suggest that in the early stages, investors still view ESG as an additional cost, negatively impacting short-term financial performance.

**The Influence of Firm Size on a Company's Financial Performance**

Several studies have shown that firm size does not always significantly impact financial performance. Research by Setyowati & Lestari (2023) found that firm size had a positive but insignificant coefficient on financial performance. Similar results were found by Hartoyo et al. (2024), who reported that firm size did not affect firm value.

Musah & Kong (2019) also showed that firm size had no significant relationship with the financial performance of non-financial companies in Ghana. Abdeen (2025) and Benrqya et al. (2023) stated that firm size was not a determinant of profitability in the UAE real estate industry or in emerging markets. Therefore, firm size is not a primary determinant in explaining financial performance.

**The Influence of Leverage on a Company's Financial Performance**

Leverage plays a crucial role in improving financial performance because it allows for the optimization of capital structure. The use of borrowed funds can strengthen investment capacity and improve financing efficiency. The tax-saving effect of loan interest is explained by capital structure theory (Kraus & Litzenberger, 1973).

Spitsin et al. (2024) emphasized that efficient capital structure management can significantly increase profitability, especially in large companies. Research by Raji & Adenikinju (2023) and Worku et al. (2023) also showed that effective leverage can improve company performance.

In the context of Ethiopian banking, Muhammed et al. (2024) found that higher leverage ratios, such as the loan-to-deposit ratio (LDR), positively impacted Return on Assets (ROA). This finding reinforces the role of leverage as a driver of profitability.

Furthermore, Neacșu & Georgescu (2023) emphasized that leverage affects a company's resilience to economic shocks. A conservative capital structure (low leverage) has been shown to improve financial stability during crises.

**The Influence of ESG on Financial Performance Moderated by Firm Size**

Ariani et al. (2025) showed that company size does not moderate the relationship between social performance and governance on profitability. Some large companies only make symbolic disclosures, making the quality of ESG implementation more important than company scale. This aligns with the findings of Wesseh et al. (2025), which show that the influence of ESG on financial performance is stronger in medium-sized companies.

**The Influence of ESG on Financial Performance Moderated by Leverage**

Wesseh et al. (2025) showed that highly leveraged companies experience a decline in the effectiveness of ESG in improving financial performance because high interest expenses reduce funding flexibility for sustainability programs.

Ktit (2024) found that European companies with high ESG tend to increase leverage to support long-term investments. However, in the Indonesian context, Fitriana & Hartoko (2024) showed that leverage actually weakens the positive relationship between environmental performance and profitability because debt obligations suppress the allocation of funds for sustainability initiatives.

Furthermore, other research confirms that the benefits of ESG in lowering the cost of capital are reduced when a company's leverage is high (Zhao et al., 2025). The high risk of default makes creditors more cautious, even if the company has a good ESG score.

## CONCLUSION

This study aims to analyze the influence of corporate sustainability performance (ESG), leverage (DER), and company size on financial performance (ROE), as well as examine the role of moderation of leverage and firm size in the relationship between ESG and financial performance. The results show that ESG has a significant negative effect on ROE, which indicates that implementing sustainability practices still incurs additional costs that suppress short-term profitability. In contrast, DER has a significant positive effect on ROE, suggesting that the proportionate use of debt can increase equity returns. The moderation test revealed that only DERs were able to moderate the relationship between ESG and ROE, while company size had no significant influence either directly or as a moderation variable. These findings confirm that

sustainability and funding structures must be managed strategically and balanced in order to create optimal financial performance amid the transition to a sustainable economy.

Company management must integrate sustainability strategies into financial and investment policies as part of long-term value creation rather than treating them as mere social responsibilities. ESG initiatives can enhance competitiveness and resilience if supported by an optimal capital structure and healthy leverage that improves efficiency and risk management. Managers should focus on cost-effective ESG implementation by prioritizing dimensions most relevant to their industry to maximize profitability and firm value. Regulators such as OJK and IDX need to strengthen incentives such as easier access to green financing or special ratings for firms with consistent ESG performance, while the government should standardize ESG reporting to ensure credibility and comparability. Coordinated fiscal, monetary, and sustainability policies are also essential to accelerate the green economy transition without harming financial performance. Future studies should broaden financial performance indicators (e.g., Tobin's Q, ROA, EVA) and apply dynamic models like GMM or PVAR to uncover causal links between ESG, leverage, and performance, while examining disclosure quality and cross-country contexts to deepen institutional insights.

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