

The Effect of ESG Performance on Firm Value and Financial Distress with ESG Controversies as A Moderating Variable

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Abstract

This study aims to analyze the impact of Environmental, Social, and Governance (ESG) performance on firm value and *financial distress* among non-financial companies listed on the Indonesia Stock Exchange (IDX) during the period 2018–2024, with ESG *Controversies* serving as a moderating variable. Firm value is measured using Tobin's Q, while *financial distress* is assessed through the Altman Z-Score. The research dataset consists of 276 company-year observations obtained from Thomson Reuters (Refinitiv) and annual financial reports. Regression results indicate that ESG performance does not have a statistically significant effect on either firm value or *financial distress*. However, ESG *Controversies* are found to significantly moderate the relationship between ESG performance and firm value. The interaction between ESG Score and ESG *Controversies* suggests that ESG-related *Controversies* weaken the positive effects of strong ESG performance, thereby reducing the potential benefits for firms. On the other hand, this interaction does not show a significant influence on *financial distress*. These findings suggest that while ESG performance alone has not yet directly influenced financial *outcomes*, the presence of ESG *Controversies* can diminish the positive perception of ESG performance and affect market valuation. This study contributes to the existing ESG literature, particularly in emerging markets like Indonesia, by highlighting that beyond ESG scores, reputational factors such as ESG *Controversies* must also be effectively managed. Practically, this implies that companies should proactively avoid controversial ESG issues to maintain stakeholder trust and enhance long-term sustainability.

Keywords: ESG Performance, ESG Controversies, Firm Value, Financial Distress, Tobin's Q, Altman Z-Score.

1. Introduction

1.1. Background and Problem Statement

In an era of increasing transparency and stakeholder awareness, Environmental, Social, and Governance (ESG) factors have become critical determinants of corporate value and financial resilience. The growing recognition of these factors has led to heightened interest in analyzing the relationship between ESG performance and firm performance, including in emerging markets such as Indonesia.

The Indonesian stock market, as a vital component of the regional economy, continues to experience dynamic changes both in domestic and global contexts. Within this framework, research on the impact of ESG performance on market valuation, operational outcomes, and financial health of listed companies in Indonesia has gained increasing relevance. A deeper understanding of how ESG performance influences Indonesian firms provide broader insights into its impact on firm value, operations, and financial stability.

McKinsey (2019) outlines several ways ESG initiatives can generate corporate value: (1) top-line growth, as ESG may support expansion into new markets and enhance resource access through stronger

community and government relationships; (2) cost reductions through more efficient operations; (3) reduced regulatory and legal interventions, as ESG can lower exposure to adverse government actions; (4) increased employee productivity by attracting and retaining high-performing talent while enhancing motivation; and (5) optimized investments, where ESG-oriented firms can achieve higher returns by directing capital toward sustainable and promising ventures.

PwC Indonesia (2021) reports that ESG adoption is gaining momentum globally. A study by MSCI reveals that during the COVID-19 pandemic, 79% of Asia-Pacific investors increased their investments in companies applying ESG principles in 2020, significantly influencing Indonesia. The Indonesian government has taken proactive steps to facilitate ESG transitions aligned with Sustainable Development Goals (SDGs) and corporate value creation. ESG implementation helps stakeholders comply with regulations, improve infrastructure development benefits, expand funding access, and enhance public support for project advancement (Ministry of Finance, 2022).

The rise of ESG investing has also driven the demand for ESG performance ratings. As a result, ESG scoring systems have been developed, standardized,

and made publicly available. For example, Thomson Reuters (2017) launched its ESG Scores to assess a firm's ESG performance transparently and objectively based on various categories such as emissions, environmental product innovation, human rights, shareholder relations, and more. ESG Scores are now available for over 6,000 firms globally (LSEG / Refinitiv, 2022).

Transparency in ESG disclosures holds significant potential for enhancing firm value. The emergence of global regulations on carbon emissions and climate change has heightened scrutiny of ESG practices, enabling stakeholders to assess a firm's long-term sustainability strategy (Lokuwaduge & Heenetigala, 2017).

Effective sustainability strategies offer financial, environmental, and social benefits. McKinsey (2019) further emphasizes that strong ESG practices contribute to value creation and support market expansion. Trihermanto and Nainggolan (2018) note that corporate social and environmental initiatives—such as philanthropy, improving working conditions, minimizing waste, and efficient resource usage—contribute to community development.

As global attention to sustainability and responsible governance grows, companies are expected not only to deliver strong financial performance but also to manage non-financial risks arising from environmental, social, and governance dimensions. Neglecting ESG aspects may damage a firm's reputation and increase its exposure to future operational and financial risks. In this context, firm value and financial distress serve as key indicators of how markets evaluate a firm's long-term resilience and prospects. These indicators are increasingly influenced by the extent to which companies consistently implement sustainability principles.

Firm value, commonly proxied by Tobin's Q, reflects the market's overall assessment of a company's performance and future prospects. It captures investor perceptions of efficiency, long-term growth, and corporate reputation—including non-financial aspects such as ESG disclosures. Firms demonstrating strong sustainability commitments are generally perceived as more stable and responsible, thereby boosting investor confidence and firm valuation (Fatemi et al., 2018; Aydoğmuş et al., 2022).

In contrast, financial distress reflects a company's internal condition of financial strain, such as difficulty meeting debt obligations or operational costs. Left unaddressed, financial distress may lead to bankruptcy and drastically reduce firm value. Hence, evaluating potential bankruptcy is essential for signaling early business risks to management, investors, and creditors. This study measures financial distress using the Altman

Z-Score, a predictive model proven effective in identifying financial distress based on key financial ratios (Altman, 2013).

Using both indicators—Tobin's Q for external market value and Altman Z-Score for internal financial risk—offers a more comprehensive view of ESG's impact. Focusing solely on market value may overlook internal risks not yet reflected in stock prices, while analyzing only bankruptcy risk may miss how investors perceive sustainability. A dual-indicator approach enables a more holistic evaluation of ESG's strategic role in value creation and risk mitigation (Postiglione & Di Carlo, 2024; Citterio et al., 2023).

The linkage between ESG and financial distress lies in ESG's ability to reduce operational risks and enhance managerial efficiency. High ESG-rated firms are often more resilient during economic uncertainty due to stronger internal controls, better risk management, and improved stakeholder relations. Studies by Citterio et al. (2023) and Shakil (2021) show that strong ESG scores enhance corporate resilience and lower the probability of falling into financial distress as measured by Altman Z-Score. However, ESG performance scores alone may not capture all non-financial risks. A crucial complementary indicator is ESG Controversies, which measure a firm's involvement in negative events related to environmental, social, and governance issues—such as environmental violations, human rights abuses, or corporate scandals. Unlike ESG scores based on self-disclosed information, ESG Controversies are compiled by Refinitiv from global media monitoring and third-party reports, thus representing external perceptions and reputational risk. Higher controversy involvement results in lower scores and heightened perceived risk among investors and the public (Refinitiv, 2020).

In this context, ESG Controversies signal negative events that could damage a firm's credibility. A low ESG Controversy score indicates incidents that may impair corporate reputation, reduce investor trust, and increase stock price volatility. Thus, even firms with high ESG scores may see their positive signals obscured by controversy exposure, increasing financial distress risk.

These controversies may weaken the positive influence of ESG performance. Even if a firm achieves high ESG scores based on internal reports, involvement in serious controversies—such as human rights violations or environmental damage—can still erode investor confidence. Aouadi and Marsat (2018) found that ESG Controversies can eliminate the value-added effects of ESG practices and even harm firm valuation. Similarly, Shakil (2021) showed that ESG controversies increase total risk and diminish the stabilizing impact of ESG on financial performance. In this study, ESG

Controversies serve as a moderating variable influencing the relationship between ESG performance and both firm value and financial distress by distorting the positive market signals sent by ESG disclosures (Dipierro et al., 2024; Mendiratta et al., 2023).

Previous studies, such as those by Shakil (2021), Citterio et al. (2023), and Aouadi and Marsat (2018), have explored the influence of ESG on firm performance, mainly in developed economies. However, limited literature simultaneously integrates ESG performance (positive aspect) and ESG Controversies (negative aspect) in relation to two different outcomes: firm value and financial distress. This study aims to bridge that gap by incorporating both ESG dimensions into a more comprehensive analytical framework.

The novelty of this study lies in three aspects. First, it introduces a dual-outcome approach by jointly examining the impact of ESG on both firm value (Tobin's Q) and financial distress (Altman Z-Score), rather than focusing on only one dimension as most prior research does. Second, it integrates ESG performance and ESG Controversies into a single moderating-interaction framework to capture both the constructive and reputational dimensions of sustainability performance. Third, this research is conducted in the context of an emerging market, namely Indonesia, where ESG disclosure, investor awareness, and regulatory maturity are still evolving—thus providing insights that differ from findings in developed markets. This study is essential because most previous studies—such as Shakil (2021), who focused on global energy firms and analyzed risk exposure but not financial distress, and Citterio et al. (2023), who examined banking sectors in advanced economies without testing the moderating effect of controversies—did not capture how ESG Controversies interact with ESG performance in shaping both market and financial outcomes. Likewise, Aouadi and Marsat (2018) only analyzed the direct negative effect of controversies on firm value without testing moderation.

By applying this integrated moderating model and a dual-indicator approach in an emerging economy, this research extends the ESG literature beyond descriptive relationships and provides a more nuanced understanding of how reputational risks (ESG Controversies) can diminish the benefits of ESG performance. Hence, this study not only fills a theoretical gap but also offers practical implications for regulators and firms to strengthen ESG governance, disclosure quality, and reputation management to support sustainable capital market development in Indonesia.

1.2. Research Objectives

This study aims to examine the influence of Environmental, Social, and Governance (ESG)

performance on firm value and financial distress, as well as the moderating role of ESG controversies in these relationships. Specifically, it investigates whether ESG performance enhances firm value (Tobin's Q) and reduces financial distress (Altman Z-Score), and whether ESG controversies weaken these effects. By addressing these objectives, the study provides a more comprehensive understanding of how ESG practices and controversies jointly shape firm valuation and financial resilience within the Indonesian non-financial sector.

2. Literature Review

2.1. Signaling Theory and Legitimacy Theory

This study draws on two foundational theories: Signaling Theory (Spence, 1973) and Legitimacy Theory (Suchman, 1995). According to Signaling Theory, companies use ESG performance as a means to communicate their managerial quality, integrity, and long-term commitment to stakeholders. Strong ESG performance signals effective governance, ethical conduct, and sustainable orientation—attributes that attract investors and reduce information asymmetry (Connelly et al., 2011; Fatemi et al., 2018).

Meanwhile, Legitimacy Theory suggests that firms seek social acceptance and legitimacy by aligning their behavior with societal values and stakeholder expectations. By adopting ESG practices, firms maintain their social license to operate, which enhances both reputational and financial performance (Deegan, 2002; Lokuwaduge & Heenetigala, 2017). Together, these theories provide a conceptual foundation for understanding how ESG performance influences firm value, financial distress, and the moderating role of ESG Controversies.

2.2. ESG Performance and Firm Value

In the current business environment, firm value is shaped not only by financial performance but also by environmental, social, and governance responsibilities. ESG performance reflects a firm's commitment to sustainability and ethical conduct, thereby strengthening investor trust and corporate reputation.

According to Signaling Theory, high ESG performance signals to investors managerial competence, reduced risk, and a long-term orientation (Fatemi et al., 2018). Similarly, Legitimacy Theory posits that strong ESG engagement enhances societal legitimacy, which is rewarded through better market valuation (Suchman, 1995).

Empirical evidence supports this argument. Aboud and Diab (2018) found that ESG indices play a

key role in enabling investors to evaluate firms more objectively by incorporating non-financial risks and opportunities. Fatemi et al. (2018) and Aydoğmuş et al. (2022) showed that good ESG practices reduce reputational and financial risks while increasing investor loyalty and firm value.

Furthermore, Broadstock et al. (2021) observed that firms with high ESG ratings were more resilient during financial crises, while Wu et al. (2022) and Miralles-Quirós et al. (2022) confirmed that ESG enhances firm valuation, especially under uncertain market conditions.

In the Indonesian context, Puspaaji and Hartono (2024) reported that ESG disclosure improves firm value, though the evidence on ESG performance remains limited. Hence, firms with higher ESG performance are expected to demonstrate higher firm value due to improved stakeholder confidence and legitimacy.

H_{1a}: ESG performance has a positive effect on firm value.

2.3. ESG Performance and Financial Distress

ESG performance is closely linked to a firm's financial stability. Companies with strong governance and effective risk management practices are generally less likely to experience financial distress. Altman (2006) emphasized that financial distress often arises from weaknesses in asset management, profitability, and capital structure—all of which can be influenced by ESG practices. Similarly, Lohmann et al. (2024) found that firms with high ESG performance tend to exhibit lower bankruptcy risk due to enhanced internal controls and stronger stakeholder trust.

Financial distress occurs when firms face difficulties in meeting their financial obligations and is commonly measured using the Altman Z-Score (Altman, 2013). ESG practices are increasingly recognized as mechanisms that reduce financial vulnerability by reinforcing corporate governance, improving operational efficiency, and fostering positive stakeholder relationships (Altman & Hotchkiss, 2006; Lohmann et al., 2024).

From a signaling perspective, firms with strong ESG performance convey credible signals of financial stability and effective long-term risk management to investors and creditors (Spence, 1973; Citterio et al., 2023).

From a legitimacy perspective, socially responsible companies benefit from greater public trust and stakeholder support, which enhances their ability to remain resilient during adverse economic conditions (Suchman, 1995).

Empirical findings support these theoretical expectations. Citterio et al. (2023) demonstrated a

positive relationship between ESG scores and Altman Z-Score in the banking industry, indicating that firms with higher ESG performance face lower financial distress risk. Ashraf et al. (2020) and Bakri et al. (2023) further reported that integrating sustainability principles into business strategies strengthens financial resilience and long-term stability. However, in emerging markets, this relationship remains relatively underexplored, as ESG initiatives are often implemented for compliance purposes rather than embedded within core risk management systems (Mendiratta et al., 2023).

Accordingly, this study hypothesizes that higher ESG performance reduces the likelihood of financial distress by enhancing managerial effectiveness, governance quality, and long-term solvency.

H_{1b}: ESG performance has a negative effect on financial distress.

2.4. The Moderating Role of ESG Controversies

Despite strong ESG scores, corporate controversies can erode stakeholder trust and lead to adverse financial consequences. Aouadi and Marsat (2018) demonstrated that ESG controversies negatively affect firm value, even among firms with high ESG performance. Shakil (2021) further revealed that controversies weaken the risk-mitigating effect of ESG practices, suggesting that ESG performance alone is insufficient; effective controversy management is equally critical. While ESG performance reflects a firm's proactive commitment to sustainability, ESG Controversies capture its exposure to adverse incidents such as environmental violations, governance scandals, or labor disputes (Refinitiv, 2020). Conceptually, these two dimensions move in opposite directions—high ESG performance signals a commitment to sustainability, whereas high ESG controversy scores signal reputational risks that can undermine corporate credibility.

Under Legitimacy Theory, involvement in controversies damages the social legitimacy that firms seek to establish through ESG initiatives (Suchman, 1995). From a Signaling Theory perspective, controversies distort or neutralize the positive signals conveyed by ESG performance, thereby reducing their credibility to investors (Spence, 1973).

Empirical evidence provides strong support for this moderating effect. Aouadi and Marsat (2018) found that ESG controversies erode firm value, while Dipierro et al. (2024) confirmed that controversies negatively affect operational efficiency and long-term valuation. Similarly, Mendiratta et al. (2023) and Ab Aziz et al. (2025) demonstrated that ESG controversies weaken the positive relationship between ESG performance

and firm outcomes, depending on governance effectiveness. Shakil (2021) also emphasized that controversies heighten total risk and moderate the ESG–financial performance relationship, although his study was limited to the global energy sector and did not explicitly examine financial distress. Accordingly, this study posits that ESG Controversies function as a negative moderator, reducing the beneficial impact of ESG performance on both market and financial outcomes.

H_{2a}: ESG controversies weaken the positive effect of ESG performance on firm value.

H_{2b}: ESG controversies weaken the negative effect of ESG performance on financial distress.

The research model and relationships between constructs are demonstrated in Figure 1.

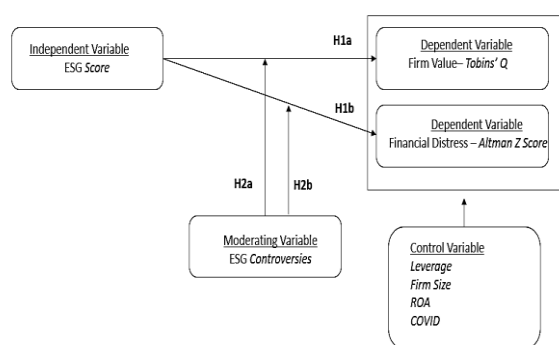


Figure 1. The research model

3. Methods

3.1. Research Design and Data

This study employs a quantitative approach using panel data regression. The sample consists of non-financial companies listed on the Indonesia Stock Exchange from 2018 to 2024. The hypotheses in this study are tested using a quantitative methodology. Panel data regression is employed to examine the relationships between the independent and dependent variables. Panel data, which combines cross-sectional and time-series dimensions, provides a robust analytical framework for such analysis (Gujarati, 2004). The second-order panel data used in this study covers the observation period from 2018 to 2024.

During the 2018–2024 period, sustainability and ESG transparency have received growing attention from regulators, investors, and the public in Indonesia. The Indonesia Stock Exchange (IDX) has actively encouraged companies to improve their sustainability reporting through initiatives such as the IDX Sustainability Index and mandatory ESG disclosures for listed firms. This study focuses exclusively on non-financial sector companies, as financial institutions—such as banks and insurance companies—operate

under markedly different regulatory regimes, financial reporting structures, and risk management frameworks. For example, the banking industry is strictly regulated by authorities such as the Financial Services Authority (OJK) and Bank Indonesia and relies on performance indicators such as Capital Adequacy Ratio (CAR) and Non-Performing Loans (NPL), which are not comparable to metrics like Tobin's Q or the Altman Z-Score. Therefore, selecting the non-financial sector ensures methodological consistency and allows for broader comparability of performance and risk indicators across firms.

Moreover, the study applies a one-period lag ($t-1$) to the ESG Score, ESG Controversies, and their interaction terms. This lagged variable approach is adopted for two primary reasons. First, from a methodological standpoint, it addresses the issue of simultaneity bias—where independent and dependent variables may influence each other within the same time period. By using lagged values of ESG performance and controversies, the study improves the temporal validity of causal inferences. Second, from a conceptual and practical perspective, the impact of ESG performance and reputational controversies on firm value and financial condition is not instantaneous; rather, it takes time to accumulate and be reflected in market perceptions and internal financial outcomes.

By adopting this approach, the study aims to provide a more accurate and contextually relevant understanding of the relationship between ESG performance, firm value, and bankruptcy risk within Indonesia's evolving capital market landscape and ESG practices.

3.2. Sample Selection

The sample was selected using purposive sampling based on the following criteria:

1. Listed on the Indonesia Stock Exchange (IDX) from 2018 to 2024.
2. Non-financial sector.
3. Complete data on ESG scores, financial statements, and control variables.
4. No delisting during the study period.

After screening, the final sample comprises 67 firms across consumer goods, materials, industrials, and real estate sectors.

3.3. Variable Measurement

This study uses one-year lagged ($t-1$) variables for ESG Score, ESG Controversies, and their interaction. The lag is applied to reduce simultaneity bias and to reflect the delayed effect of ESG performance and controversies on firm value and financial condition. (Table 1)

Table 1. Variable definitions

Variable	Measurement	Source
Dependent Variables		
Tobin's Q	(Market value of assets+ Book Value of Liabilities) / Book value of assets	Financial Statements
Z-Score	6,56 X ₁ + 3,26 X ₂ + 6,72 X ₃ + 1,05 X ₄	Altman (2000)
Independent Variable		
ESGScore	Total ESG score from Refinitiv (Thomson Reuters) lagged one (t-1)	Refinitiv ESG Database
Moderating Variable		
ESGCon	ESG Controversies Score (Refinitiv) lagged one (t-1)	Refinitiv ESG Database
Interaction Term		
ESGScore × ESGCon	Multiplication of lagged (t-1) ESGScore and ESGCon	Computed
Control Variables		
LEV	Total Debt / Total Assets	Financial Statements
SIZE	Natural log of total assets	Financial Statements
ROA	Net Income / Total Assets	Financial Statements
COVID	Dummy variable (1 = 2020–2022; 0 = otherwise)	—
BOARD_IND	Proportion of independent board members	Refinitiv
BOARD_SIZE	Number of board members	Refinitiv

3.4. Model Specification

The following regression models are used:

Model 1 – H1a

$$TobinsQ_{it} = \alpha + \beta_1 ESGScore_{it-1} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \beta_5 D_COVID_{it} + \epsilon$$

Model 2 – H1b

$$ZScore_{it} = \alpha + \beta_1 ESGScore_{it-1} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \beta_5 D_COVID_{it} + \epsilon$$

Model 3 – H2a

$$TobinsQ_{it} = \alpha + \beta_1 ESGScore_{it-1} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \beta_5 D_COVID_{it} + \beta_6 ESGCon_{it-1} + \beta_7 (ESGScore_{it-1} * ESGCon_{it-1}) + \epsilon$$

Model 4 – H2b

$$ZScore_{it} = \alpha + \beta_1 ESGScore_{it-1} + \beta_2 LEV_{it} + \beta_3 SIZE_{it} + \beta_4 ROA_{it} + \beta_5 D_COVID_{it} + \beta_6 ESGCon_{it-1} + \beta_7 (ESGScore_{it-1} * ESGCon_{it-1}) + \epsilon$$

BOARD_SIZE).

Robustness checks include adding board governance variables (BOARD_IND and BOARD_SIZE).

3.5. Analytical Method

Panel data regression with fixed effects is applied. Classical assumption tests include multicollinearity

(VIF < 10), heteroskedasticity (Breusch-Pagan), and autocorrelation (Durbin-Watson). Hypotheses are tested using t-tests with a significance level of $\alpha = 0.05$.

4. Result

4.1. Descriptive Statistics

Table 2 presents the descriptive statistics of key variables. Descriptive Statistics (N = 276)

Table 2. Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
TobinQ	276	1.372	0.524	0.85	2.27
ZScore	276	4.61	3.417	-0.68	11.62
ESGScore	276	47.575	18.929	9.82	89.02
ESGCon	276	99.207	5.828	35.71	100
LEV	276	0.254	0.193	0	0.79
SIZE	276	31.332	1.045	28.13	33.54
ROA	276	0.064	0.052	-0.01	0.16
COVID	276	0.438	0.497	0	1

Table 2 presents the descriptive statistics for all variables used in this study. The average Z-score is 4.61, placing most firms in the "safe zone" ($Z > 2.99$), which suggests a low risk of financial distress.

The mean ESG score of 47.57 indicates relatively moderate ESG performance across the sample. The average ESG Controversies score is 99.21, suggesting that most firms have minimal or no reported controversies, as higher scores indicate fewer issues. Tobin's Q has a mean value of 1.37, implying that, on average, the market values firms slightly above the replacement cost of their assets, reflecting moderate investor confidence.

The average leverage (LEV) ratio is 0.25, indicating that firms are generally more equity-financed than debt-financed. The mean firm size (SIZE), measured by the natural logarithm of total assets, is 31.33, which reflects relatively large firms. Meanwhile, the average return on assets (ROA) is 6.4%, pointing to modest profitability. Lastly, the dummy variable for the COVID-19 period (COVID) shows a mean of 0.44, suggesting that approximately 44% of the firm-year observations fall within the pandemic years (2020–2022).

4.2. Correlation Analysis

Correlation results show Tobin's Q has a positive and significant correlation with Z-Score ($r = 0.1595^*$, $p < 0.1$), indicating financially healthier firms are valued higher by the market. ESGScore shows weak correlation with Tobin's Q ($r = 0.0031$) but strong positive correlation with Board Size ($r = 0.2775^*$). ESGCon correlates negatively with Z-Score ($r = -0.1222^*$), suggesting controversies are linked to higher distress risk.

4.3. Regression Results and Hypothesis Testing

The hypotheses in this study were tested using panel data regression with fixed effects. The estimation outcomes are presented in Table 3. Model 1 tests the direct effect of ESG performance, while Model 2 tests the moderating effect of ESG Controversies.

Table 3. Panel regression results

Variabel	Model 1		Model 2	
	Tobin'sQ (a)	ZScore (b)	Tobin'sQ (a)	ZScore (b)
ESGScore	-0.0037 (p = 0.151)	-0.0157 (p = 0.398)	-0.0039 (p = 0.137)	-0.0157 (p = 0.400)
LEV	-0.1203 (p = 0.683)	-7.6620*** (p = 0.000)	-0.1170 (p = 0.700)	-7.5959*** (p = 0.000)
SIZE	-0.3256*** (p = 0.004)	0.5976 (p = 0.249)	-0.3209*** (p = 0.005)	0.5816 (p = 0.274)
ROA	2.3330*** (p = 0.001)	11.0552*** (p = 0.001)	2.3456*** (p = 0.001)	11.1684*** (p = 0.002)
COVID	0.0679* (p = 0.055)	0.0794 (p = 0.420)	0.0698* (p = 0.055)	0.0770 (p = 0.435)
ESGCON	—	—	-0.0006 (p = 0.591)	-0.0068 (p = 0.293)
ESGScoreX ESGCon	—	—	-0.0002*** (p = 0.004)	-0.0004 (p = 0.484)
Intercept	1.4267*** 276	6.5078*** 276	1.2474*** 276	5.7401*** 276
N Observasi				
Prob > F	0.0000	0.0000	0.0000	0.0000
R2	0.2456	0.3928	0.2500	0.3941

Notes: *p < 0.1, **p < 0.05, ***p < 0.01. Standard errors in parentheses.

4.3.1. Direct Effect of ESG Performance (H1a & H1b)

Based on Model 1a, the ESG performance variable (ESG Score) has a coefficient of -0.0037 with a p-value of 0.151, indicating that the relationship is not statistically significant at the 5% level. Therefore, H1a is not supported, suggesting that ESG performance does not have a significant positive effect on firm value.

Similarly, in Model 1b examining financial distress, the ESG Score has a coefficient of -0.0157 with a p-value of 0.398. Although the negative coefficient theoretically implies a reduction in financial distress, the result is statistically insignificant. Hence, H1b is not supported.

4.3.2. Moderating Effect of ESG Controversies (H2a & H2b)

Model 2a introduces the interaction term (ESG Score × ESG Controversies) for firm value. The coefficient is -0.0002, significant at the 1% level (p = 0.004). This indicates that ESG controversies significantly moderate the relationship between ESG performance and firm value. Specifically, the negative

interaction suggests that the presence of ESG controversies weakens the potential benefits of ESG performance, supporting H2a.

In contrast, Model 2b shows that the interaction term for financial distress is not statistically significant ($\beta = -0.0004$, $p = 0.484$). This implies that ESG controversies do not significantly alter the effect of ESG performance on financial distress in this sample, and thus H2b is not supported.

4.4. Control Variable and Robustness Check

To obtain reasonable assurance, an additional robustness test was conducted by including two control variables: Board Independence and Board Size. The regression results incorporating these variables are presented in Table 4.

Table 4. Robustness check panel regression

Variabel	Model 1		Model 2	
	Tobin'sQ (a)	ZScore (b)	Tobin'sQ (a)	ZScore (b)
ESGScore	-0.0043 (0.107)	-0.0176 (0.322)	-0.0044 (0.098)*	-0.0176 (0.323)
LEV	-0.1627 (0.601)	-7.8751 (0.000)***	-0.1547 (0.626)	-7.7930 (0.000)***
SIZE	-0.3262 (0.004)***	0.5695 (0.278)	-0.3213 (0.005)***	0.5355 (0.320)
ROA	2.2695 (0.002)***	10.5044 (0.002)***	2.2911 (0.002)***	10.6209 (0.002)***
COVID	0.0650 (0.057)*	0.0701 (0.474)	0.0665 (0.058)*	0.0645 (0.513)
Board_IND	-0.0011 (0.249)	-0.0058 (0.108)	-0.0011 (0.254)	-0.0062 (0.078)*
Board_Size	-0.0063 (0.673)	-0.0011 (0.983)	-0.0066 (0.661)	-0.0003 (0.995)
ESGCON	—	—	-0.0010 (0.373)	-0.0096 (0.153)
ESGScoreXE SGCon	—	—	-0.0002 (0.007)***	-0.0004 (0.498)
Intercept	1.5523 (0.000)***	6.9548 (0.000)***	1.3475 (0.000)***	6.1067 (0.000)***
N Observasi	276	276	276	276
Prob > F	0.0000	0.0000	0.0000	0.0000
R2	0.2511	0.4015	0.2553	0.4038

Control Variables and Robustness Check

Regarding control variables, profitability (ROA) consistently demonstrates a strong positive relationship with both firm value and financial stability across all models ($p < 0.01$). Leverage (LEV) shows a significant negative effect on financial stability ($p < 0.000$), increasing distress risk. Firm size (SIZE) has a significantly negative influence on firm value.

To ensure the validity of these results, a robustness check was conducted by adding Board Independence and Board Size as control variables (Table 4). The addition of these governance proxies did not significantly alter the main findings. The ESG Score

remained insignificant for both outcomes, and the interaction term remained significant for Tobin's Q, confirming the consistency of the primary analysis.

5. Discussion

The results of the panel regression analysis are summarized in Table 3, which presents the estimation outcomes for both models: Model 1 (the direct effect of ESG performance) and Model 2 (the moderating effect of ESG Controversies). Model 1a and 1b correspond to the direct relationships between ESG performance and firm value (Tobin's Q) and financial distress (Z-Score), respectively. Model 2a and 2b extend the analysis by including the moderating effect of ESG Controversies and the interaction term ($ESGScore \times ESGCon$).

As shown in Table 3, the regression results reveal that ESG performance ($ESGScore$) does not have a significant effect on either Tobin's Q or Z-Score, while the interaction term ($ESGScore \times ESGCon$) significantly and negatively affects Tobin's Q. These findings indicate that ESG Controversies play a crucial moderating role, weakening the potential positive relationship between ESG performance and firm value.

The following discussion elaborates on each hypothesis based on the regression outputs presented in Table 3.

- H1a (Not Supported): $ESGScore$ does not significantly affect Tobin's Q ($\beta = -0.0039$, $p = 0.137$).

The regression results of Model 1a (Table 3) show that the $Prob > F$ value is 0.0000, indicating that the model is statistically significant overall and capable of explaining variations in firm value. The within R-squared of 0.2456 implies that approximately 24.56% of the variation in firm value can be explained by the variables included in this model.

However, at the individual level, the ESG performance variable (ESG Score) has a coefficient of -0.0037 and a p-value of 0.151, indicating it is not statistically significant at conventional significance levels (10%, 5%, or 1%). Therefore, Hypothesis H1a is not supported, and it can be concluded that ESG performance does not have a significant influence on the firm value of non-financial companies in Indonesia during the observation period.

According to Signaling Theory (Spence, 1973), companies use ESG disclosure as a positive signal to the market regarding managerial quality and long-term orientation. Firms with high ESG scores are assumed to be valued more highly by the market, as they are seen as sustainable, socially responsible, and better equipped to manage long-term risks (Fatemi et al., 2018; Fandella et al., 2023).

However, the findings of this study suggest that ESG signals are not yet perceived as credible or

relevant by the Indonesian market. This indicates a possible case of signal failure, in which ESG signals are not positively interpreted by investors—potentially due to factors such as low ESG literacy, limited data transparency, or insufficient integration of ESG into core business strategies (Hermenda & Wijaya, 2024).

In the context of Legitimacy Theory (Suchman, 1995), firms gain legitimacy from their social environment through practices that are considered acceptable by society and the market. The insignificant effect of ESG on firm value further suggests that sustainability practices have not yet become a normative expectation among local investors.

These results indicate that although ESG implementation in Indonesia continues to develop, it has not yet achieved sufficient market appeal to influence firm valuation meaningfully. This contrasts with findings in developed countries, such as those by Citterio (2021) and Aboud & Diab (2018), which show that firms with high ESG scores tend to have higher firm value. Such differences may be due to the lower level of ESG literacy among local investors, lack of consistent ESG disclosure, and suboptimal integration of ESG into corporate strategies. However, studies conducted in Indonesia—such as Puspaaji & Hartono (2024) and Labaco & Pabulo (2024)—also found that the influence of ESG on financial performance remains weak, particularly among non-financial firms.

- H1b (Not Supported): $ESGScore$ also shows no significant effect on Z-Score ($\beta = -0.0157$, $p = 0.400$).

Based on the regression results of Model 1b (Table 3), the $Prob > F$ value is 0.0000, indicating that the model is statistically significant in explaining the dependent variable, namely, financial distress. The within R-squared value is 0.3928, suggesting that approximately 39.3% of the variation in the Z-Score can be explained by the variables included in the model.

The main variable of interest, ESG Score, has a coefficient of -0.0157 with a p-value of 0.398. This indicates that the relationship is not statistically significant at the 10%, 5%, or 1% significance levels. The negative coefficient direction implies that, theoretically, higher ESG performance should be associated with a higher Z-score (and thus lower financial distress risk). However, due to the lack of statistical significance, Hypothesis H1b cannot be accepted. This suggests that ESG performance has not been proven to significantly reduce the risk of bankruptcy among non-financial companies in Indonesia during the observation period.

According to Signaling Theory (Spence, 1973), a high ESG score should signal to the market that the

firm has strong risk management and governance practices, thereby increasing investor confidence and reducing the likelihood of financial distress. However, this signal appears insufficiently strong or credible in the Indonesian market context—potentially due to inconsistencies in ESG disclosure quality or because ESG has not yet been integrated as a core component of corporate strategy.

From the perspective of Legitimacy Theory (Suchman, 1995), companies need to maintain social legitimacy to sustain their operations. In this context, ESG serves as a legitimacy tool; however, when this legitimacy is not yet fully recognized by the market—particularly by creditors and institutional investors—its effectiveness in mitigating financial distress remains limited.

These findings contrast with prior studies such as Citterio et al. (2023) and Ashraf et al. (2020), which found that ESG positively contributes to financial stability, especially in the banking sectors of developed countries. These studies suggest that ESG enhances risk management and financial resilience. Meanwhile, studies in developing economies—such as Mendiratta et al. (2023) in India—indicate that ESG only becomes influential when supported by strong institutional contexts, including effective governance systems and regulatory oversight.

- H2a (Supported): The regression analysis of the key variables in Model 2a (Table 3) yields the following results:

ESGScore (ESG performance) has a coefficient of -0.0039 with a p -value of 0.137 , indicating that ESG performance does not have a direct impact on firm value.

ESGCon (ESG controversies) is also not statistically significant (coefficient = -0.0006 ; $p = 0.591$), suggesting that ESG controversies do not directly affect firm value.

However, the interaction variable ESGScore \times ESGCon shows a coefficient of -0.0002 , which is significantly negative at the 1% level ($p = 0.004$).

These results indicate that ESG Controversies significantly moderate the relationship between ESG performance and firm value in a negative direction. In other words, the higher the level of ESG controversies, the weaker the positive influence of ESG performance on firm value.

Therefore, Hypothesis H2a is supported, and it can be concluded that ESG controversies weaken the positive effect of ESG scores on firm value. This finding supports the assumption that investors and stakeholders assess ESG not only by its score but also by the consistency and integrity of its implementation. Companies with high ESG scores but involved in

multiple controversies tend to receive limited market appreciation—or may even face penalties in the form of stagnant or declining valuation.

This finding aligns with Signaling Theory (Spence, 1973), which predicts that ESG scores will serve as positive signals to the market. However, ESG controversies make these signals ambiguous or untrustworthy, ultimately leading to reduced market valuation. Within the framework of Legitimacy Theory (Suchman, 1995), involvement in ESG controversies reflects a loss of social legitimacy, which can harm a firm's reputation in the eyes of investors and stakeholders.

This is consistent with the findings of Citterio et al. (2023) and Ab Aziz et al. (2025), who concluded that ESG controversies can neutralize or even damage the positive influence of ESG performance on firm value, particularly in emerging markets.

From the Legitimacy Theory perspective, ESG controversies represent a failure by the firm to maintain its social legitimacy, which ultimately undermines investor and public trust in the firm's sustainability reputation.

- H2b (Not Supported): The interaction term is not significant in the Z-Score model ($\beta = -0.0004$, $p = 0.484$), meaning controversies do not significantly alter ESG's impact on financial distress.

The regression results of Model 2b (Table 3) indicate that the overall model is statistically significant, with a Prob > F value of 0.0000 . This suggests that the model is capable of explaining the variation in the dependent variable, namely the Z-score. The within R-squared of 0.3941 indicates that approximately 39.41% of the variation in financial distress risk is explained by the model's combination of variables.

Accordingly, Hypothesis H2b is not supported statistically. Although the interaction coefficient is negative—as expected under the assumption that ESG controversies weaken the influence of ESG performance on reducing distress risk—this result does not provide strong empirical evidence for non-financial sector firms in Indonesia.

Although the interaction between ESGScore and ESG Controversies is not significant, the negative direction of the coefficient still suggests that ESG controversies may reduce the positive benefits of ESG performance on a firm's financial condition. In other words, when a company is involved in controversial issues related to environmental, social, or governance aspects, the sustainability signal conveyed through its ESG score becomes less credible and is disregarded by the market.

Under the Signaling Theory framework, ESG scores are intended to serve as positive signals to

investors regarding a firm's long-term risk management and responsibility. However, when these signals are inconsistent with reality (e.g., due to ESG controversies), investors may doubt the company's integrity, leading to heightened risk perception.

From the Legitimacy Theory perspective, involvement in ESG controversies indicates a disruption in the firm's social legitimacy, which can undermine stakeholder trust and increase external pressure from regulators, consumers, and capital markets. This may directly impact the firm's financial condition and increase its distress risk.

These findings are consistent with prior studies that emphasize the importance of accounting for ESG Controversies when evaluating the impact of ESG performance. Shakil (2021) found that involvement in ESG controversies significantly weakens the effect of ESG on total risk. Similarly, Citterio et al. (2023) emphasized that ESG scores and ESG controversies should be considered simultaneously, as controversy participation may reduce the positive impact of ESG on corporate stability. Furthermore, Aouadi and Marsat (2018) demonstrated that ESG controversies negatively affect firm value and significantly increase financial risk.

Overall, Model 2b does not provide sufficient statistical evidence to support the claim that ESG controversies significantly weaken the effect of ESG on financial distress risk. Nevertheless, the direction of the relationship still delivers an important message: firms with high ESG scores must maintain a controversy-free reputation to ensure that the benefits of ESG performance are fully internalized in their financial stability.

This finding provides a crucial insight that in emerging markets like Indonesia, the integration of ESG into risk management and market perception still requires strengthening—particularly through improved regulation, investor education, and more credible and consistent sustainability reporting practices.

The additional findings of this study present several important insights regarding the control variables and their effects on firm outcomes. First, the ESG Controversy variable (ESGCon) does not have a direct significant impact on either Tobin's Q or the Altman Z-Score, indicating that controversies alone may not influence firm valuation or financial distress without considering the firm's overall ESG performance. Second, leverage (LEV) shows a negative and significant effect on financial stability ($\beta = -7.5959$, $p < 0.01$), suggesting that higher debt levels increase the likelihood of financial distress, consistent with the theory proposed by Modigliani and Miller (1963). Third, firm size (SIZE) has a negative and significant influence on firm value ($\beta = -0.3209$, $p = 0.005$), which

may indicate possible diseconomies of scale or investor concerns regarding the efficiency and transparency of larger firms.

Moreover, profitability (ROA) demonstrates a strong and positive relationship with both firm value ($\beta = 2.3456$, $p < 0.01$) and financial stability ($\beta = 11.1684$, $p < 0.01$), reaffirming that profitability remains a key determinant of corporate value creation and financial health. Finally, the COVID-19 dummy variable is marginally significant for Tobin's Q ($\beta = 0.0698$, $p = 0.055$), possibly reflecting changes in investor sentiment and firm resilience during the pandemic period.

These results highlight that ESG alone may not deliver immediate financial benefits, but controversies significantly erode potential gains, particularly in market valuation.

This study investigates the influence of Environmental, Social, and Governance (ESG) performance on firm value and financial distress, and the moderating role of ESG controversies among listed non-financial firms in Indonesia. Using Tobin's Q to measure firm value and the Altman Z-Score to assess financial distress, the study provides new empirical evidence from an emerging market where ESG disclosure and regulation are still evolving.

The addition of Board Independence and Board Size (Table 4) as proxies for corporate governance does not show a significant impact on either firm value or bankruptcy risk. Board Independence (Board_IND) has a negative coefficient for both firm value and Z-Score (indicating higher bankruptcy risk). This suggests that board structures in Indonesian firms are not yet practical or strategic in managing ESG risks or creating long-term value. This aligns with findings by Yustina & Prasetyo (2022), who noted that board independence is often a formality without an active role in ESG strategy.

Board Size also shows no significant effect in any of the models. This supports the notion that formal governance mechanisms in Indonesia have not functioned optimally in providing strategic oversight or driving corporate sustainability, and may still be largely symbolic. Research by Yustina and Prasetyo (2022) also confirms that Board Size does not significantly affect financial performance or sustainability disclosure among Indonesian firms, suggesting that the board's role in supporting ESG and strategic governance remains suboptimal in substance, even if formal structures are in place.

This additional testing supports the main finding that the ESG Score does not have a significant direct impact on either firm value or financial distress, particularly when reputational factors such as ESG Controversies are not considered. ESG Controversies

serve as a critical moderating factor, weakening the positive influence of ESG on corporate performance and stability. Moreover, governance mechanisms such as Board Size and Board Independence have not demonstrated effectiveness in enhancing ESG influence or in explaining firm value or financial distress. In contrast, fundamental factors such as leverage and ROA remain consistently significant, in line with established theory and prior research findings.

Therefore, to achieve the strategic value of ESG, Indonesian companies need to improve the quality of ESG implementation, increase transparency and consistency, and maintain a reputation free from ESG controversies. In addition, strengthening the strategic oversight function of the board of directors becomes a crucial agenda item to support corporate sustainability and value creation

5.1. Summary of Key Findings

This study aims to analyze the impact of ESG performance on firm value and financial distress, with ESG Controversies as a moderating variable. The empirical results provide a nuanced view of ESG implementation in the Indonesian non-financial sector. Contrary to the initial expectations rooted in Signaling Theory, this study finds that ESG performance alone does not significantly influence firm value (Tobin's Q) or financial distress (Altman Z-Score).

The insignificance of ESG performance (H1a and H1b) suggests a possible "signal failure" in the Indonesian market. According to Signaling Theory, ESG disclosures are intended to reduce information asymmetry and signal managerial quality. However, the findings indicate that these signals are not yet perceived as credible or value-relevant by local investors. This contrasts with developed markets, where strong ESG scores are often rewarded with higher valuation. In the context of Legitimacy Theory, while firms may adopt ESG to align with societal values, this legitimacy has not yet translated into financial rewards or resilience in Indonesia. This may be attributed to the region's early stage of ESG maturity, where disclosure is often viewed as a compliance exercise rather than a strategic differentiator.

Crucially, however, the study finds that ESG Controversies significantly moderate the relationship between ESG performance and firm value (H2a). The significant negative interaction confirms that reputational risks can erode the potential value of ESG initiatives. This aligns with the findings of Aouadi and Marsat (2018), who noted that controversies can obliterate the value-added effects of ESG. From a theoretical standpoint, this supports the view that while "good" ESG performance may not yet be fully priced

in, "bad" ESG (controversies) is punished. Controversies damage the social legitimacy of the firm, causing investors to discount the credibility of reported ESG scores.

Regarding financial distress, the lack of significant moderation (H2b) suggests that while controversies damage market reputation (external perception), they do not immediately impact the fundamental solvency ratios captured by the Altman Z-Score. This distinction highlights that market sentiment reacts faster to reputational damage than internal financial structures do.

5.2. Managerial Implications

The findings offer critical insights for corporate managers in emerging markets. First, simply achieving a high ESG score is insufficient to drive firm value. Managers must move beyond symbolic compliance to substantive ESG integration that demonstrates tangible financial logic to investors.

Second, the significant role of controversies underscores the paramount importance of reputation management. A firm's ESG strategy must be defensive as well as offensive; it is equally important to avoid negative incidents (environmental violations, labor disputes) as it is to promote positive initiatives. Companies should establish robust risk management systems to prevent controversies that could neutralize their sustainability efforts.

Third, the robustness checks indicated that board independence and size did not significantly enhance ESG outcomes. This implies that companies need to re-evaluate the effectiveness of their governance structures. Appointing independent directors should not be a box-ticking exercise; these directors must possess the specific expertise to oversee ESG risks and strategy effectively.

5.3. Limitations and Directions for Future Research

While the study provides meaningful insights, several limitations should be noted. First, the scope is restricted to non-financial firms in Indonesia, limiting generalizability to financial institutions that operate under distinct governance and risk frameworks. Future research could extend the analysis to banks and insurance companies or conduct cross-country comparisons within the ASEAN region.

Second, the dataset's limited coverage (2018–2024) and dependence on Refinitiv's secondary data constrain the depth of analysis. ESG scores and controversies derived from public disclosures may not fully reflect actual sustainability practices. Future research should integrate qualitative approaches, such

as content analysis of sustainability reports or interviews with corporate ESG officers, to complement quantitative data.

Third, this study focuses on general ESG indicators without distinguishing among the environmental, social, and governance dimensions. Subsequent studies may explore the disaggregated impact of each ESG pillar to identify which dimension most strongly influences firm value or financial health.

Lastly, while the COVID-19 pandemic is included as a control variable, its moderating role remains unexplored. Future research should examine how systemic crises—such as pandemics or climate shocks—affect the strength of the ESG–ESG-performance relationship.

Integrating such external stressors could provide deeper insights into how ESG acts as a buffer against uncertainty.

6. Conclusions

This study concludes that ESG performance does not have a statistically significant effect on either firm value or financial distress among Indonesian non-financial firms. However, ESG controversies exert a significant negative moderating effect on the relationship between ESG and firm value, demonstrating that reputational risks can weaken the potential advantages of strong ESG performance. In contrast, the moderating effect on financial distress is negative but statistically insignificant.

These findings suggest that ESG implementation in Indonesia remains in an early developmental stage, where market participants have yet to fully recognize sustainability performance as a determinant of corporate value and financial health. To enhance ESG's impact, firms must focus on the authenticity and transparency of their sustainability initiatives, while regulators should strengthen ESG disclosure standards and oversight mechanisms. Future research is encouraged to expand coverage across sectors and regions, incorporate qualitative ESG assessments, and explore the moderating influence of systemic shocks. By addressing these areas, future studies can better illuminate how ESG practices contribute to long-term value creation, reputational integrity, and corporate resilience in emerging markets.

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