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ESG AND FIRM VALUE: EVIDENCE FROM MULTI-LEVEL GOVERNANCE IN ASEAN

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Abstract

This study examines the effect of Environmental, Social, and Governance (ESG) scores on firm value and investigates the moderating roles of Board Size and Regulatory Quality in the ASEAN-6 context. Using a sample of 3,047 firm-year observations from non-financial listed firms in Indonesia, Malaysia, Singapore, Thailand, the Philippines, and Vietnam during 2018-2023, the hypotheses are tested using a fixed-effects panel regression model. The results show that ESG scores are negatively associated with firm value, as measured by Tobin's Q, suggesting that investors may perceive ESG-related improvements as imposing short-term adjustment costs that have yet to translate into immediate market benefits. Board Size is found to positively moderate this relationship, weakening the negative association between ESG scores and firm value, which underscores the role of internal monitoring mechanisms in supporting effective ESG implementation. Regulatory Quality is not found to significantly moderate the ESG scores and firm value relationship in the baseline model; however, robustness tests using one-year lagged ESG scores indicate a possible delayed institutional effect, suggesting that the influence of regulatory quality may take time to materialize. This study contributes to the literature by integrating firm-level and country-level governance mechanisms within a multi-level governance framework, offering new insights into the ESG and firm value relationship in emerging ASEAN markets.

Keywords: ESG Score, firm value, board size, regulatory quality, ASEAN-6.

Introduction

Global attention to sustainable development is increasing, marked by stronger momentum for corporate ESG disclosure in various countries (H. Chen et al., 2022; Imran et al., 2023). The integration of ESG in corporate and investment decisions has become mainstream practice, in line with the growth of sustainable investment and increased public and media scrutiny. This direction is in line with the UN 2030 SDGs and is reinforced by the development of international standards that promote transparency, industry-specific ESG reporting, climate impact assessments, and social responsibility (Bagh et al., 2024). Evidence also shows that market interest in the transparency of large companies' ESG performance and practices continues to increase (Eccles et al., 2014).

Despite the increasing importance of ESG, whether higher ESG scores translate into greater firm value remains an unresolved empirical issue. Strong ESG performance may enhance corporate reputation, strengthen stakeholder relationship, reduce environmental and social risks, and improve long-term competitiveness. These benefits may increase investor confidence and lead to higher market valuation. Accordingly, several studies document a positive relationship between ESG or corporate social responsibility and firm value (Albuquerque et al., 2019; Bamel et al., 2025; S. Chen et al., 2023; Ferrell et al., 2016; Gao & Zhang, 2015; Xu et al., 2025).

Conversely, ESG initiatives may require considerable financial, organizational, and managerial resources, while their economic benefits may take time to materialize. Investors may therefore perceive ESG-related investments as adjustment costs, resource diversion, or expenditures with uncertain short-term returns. Consistent with this argument, other studies report a negative relationship between ESG scores and firm value (Buchanan et al., 2018; Handoyo & Anas, 2024; Narula et al., 2024; Prabawati & Rahmawati, 2022; Qureshi et al., 2021). Meanwhile, Meeprom et al. (2024), which employs Tobin's Q

as a market-based measure, finds no significant direct relationship between overall ESG scores and firm value. The broader review by Gillan et al. (2021) similarly demonstrates that the valuation consequences of ESG and related corporate responsibility activities remain inconclusive. The mixed findings indicate that the ESG scores and firm value relationship is unlikely to be uniform across firms and institutional environments.

One possible explanation for these inconsistencies is that the market valuation of ESG depends on the governance mechanisms surrounding its implementation. Governance mechanisms can reduce information asymmetry, constrain managerial opportunism, and strengthen the credibility of ESG related corporate decisions. They may therefore influence whether investors perceive ESG performance as a credible long-term commitment or as a costly and potentially symbolic corporate activity. However, governance operates not only within firms but also through the broader institutional environment in which firms conduct their activities.

At the firm level, Board Size represents an internal governance mechanism that may influence the board's monitoring and advisory capacity. A larger board may provide broader expertise, experience, and stakeholder representation, which can be particularly valuable when evaluating complex ESG investments. Stronger board oversight may also help align ESG initiatives with corporate strategy, constrain opportunistic managerial decisions, and reduce the possibility that ESG activities are implemented merely for symbolic purposes (Husted & Sousa-filho, 2019; Mahajan et al., 2023). Board Size may affect how investors evaluate the costs, credibility, and expected benefits associated with firms' ESG performance.

At the country level, Regulatory Quality constitutes an external governance mechanism reflecting the government's ability to formulate and implement (Kaufmann et al., 2011). Strong national institutions can shape corporate sustainability practices by providing policy certainty, strengthening corporate accountability, and influencing how firms respond to stakeholder expectations (Ioannou & Serafeim, 2012; Liang & Renneboog, 2017). In the context of ESG, stronger Regulatory Quality may reduce institutional uncertainty and increase investors' confidence that corporate ESG commitments are supported by credible policies and enforcement mechanisms. Regulatory Quality may consequently influence whether ESG scores are interpreted as credible indicators of long-term corporate commitment or merely as formal compliance with limited economic implications.

Board Size and Regulatory Quality therefore operate at different but complementary levels. Board Size provides internal monitoring and strategic oversight at the firm level, whereas Regulatory Quality provides external policy certainty and institutional credibility at the country level. Examining only one governance level may provide an incomplete explanation of how ESG performance is assessed by capital markets. A multi-level governance perspective is therefore needed to explain how internal corporate oversight and country-level institutional conditions jointly shape the ESG scores and firm value relationship.

The ASEAN-6 context, comprising Indonesia, Malaysia, Singapore, Thailand, the Philippines, and Vietnam, is particularly relevant because firms operate under different regulatory capacities, corporate governance systems, institutional environments, and capital-market conditions. Previous studies have examined these governance mechanisms separately. Prabawati & Rahmawati (2022) examine the direct relationship between ESG scores and firm value in ASEAN. Meeprom et al. (2024) investigate Board Size as a moderator of the relationship between ESG scores and Tobin's Q among Thailand listed firms. Handoyo & Anas (2024), meanwhile, examine Regulatory Quality as a moderator of the relationship between ESG dimensions and accounting-based firm performance, measured using Net Profit Margin, Return on Assets, and Operating Profit Margin. However, limited evidence simultaneously examines Board Size and Regulatory Quality in explaining the relationship between ESG scores and market-based firm value within the ASEAN context.

This study addresses this gap by examining the relationship between ESG scores and firm value, measured using Tobin's Q, and by investigating the moderating roles of Board Size and Regulatory Quality among non-financial firms in the ASEAN-6 countries. The study integrates Stakeholder Theory, Agency Theory, and Institutional Theory. Stakeholder Theory explains how ESG activities may strengthen stakeholder relationship and influence market valuation. Agency Theory explains how Board Size, as an internal monitoring mechanism, may improve the credibility and effectiveness of corporate ESG decisions. Institutional Theory explains how Regulatory Quality provides

country-level policy certainty and institutional credibility that may shape investors' assessments of ESG scores.

This study contributes to the literature in three ways. First, it responds to the research agenda concerning the interplay between ESG and corporate governance signals by simultaneously incorporating firm-level and country-level governance mechanisms into the ESG score and firm value relationship (Mahajan et al., 2023). Second, it extends previous studies by examining market-based firm value rather than accounting-based firm performance when evaluating the moderating role of Regulatory Quality. Third, it provides empirical evidence from the institutionally heterogeneous ASEAN-6 context, which remains relatively underexplored from a multi-level governance perspective. The findings are also expected to provide practical insights for corporate boards and policymakers seeking to strengthen the effectiveness and market credibility of ESG implementation.

ESG and Firm Value

Environmental, Social, and Governance (ESG) scores and their relationship with firm value have received considerable attention from academics, investors, and corporate decision-makers (Bodhanwala & Bodhanwala, 2022; Sharma et al., 2020). Stakeholder Theory argues that firms are accountable not only to shareholders but also to employees, creditors, suppliers, customers, local communities, regulators, and other parties affected by corporate decisions (Freeman, 1984).

From a stakeholder perspective, a higher ESG score may indicate that a firm manages its environmental impacts, social responsibilities, and governance practices more effectively. Such practices can strengthen stakeholder trust, corporate legitimacy, and reputation while reducing environmental, social, and governance-related risks. Stronger stakeholder support may subsequently improve firms' long-term prospects and increase investors' willingness to assign a higher market valuation. ESG practices can also signal that the firm is committed to responsible business conduct and capable of maintaining sustainable relationships with its stakeholders (Shad et al., 2018). Consistent with this argument, previous studies have documented a positive relationship between ESG scores and firm value measured using market-based indicators such as Tobin's Q (Aydo & Ergun, 2022; Bamel et al., 2025; Bhaskaran et al., 2020; Naeem et al., 2021)

However, ESG activities do not necessarily increase firm value. ESG implementation may require substantial financial, managerial, and organizational resources, while its economic benefits may only emerge over the longer term. Investors may consequently perceive ESG expenditures as short-term adjustment costs, resource diversion, or investments with uncertain returns. ESG activities may also fail to create value when they are implemented symbolically, poorly aligned with corporate strategy, or insufficiently supported by effective governance mechanisms. Under these conditions, the costs associated with ESG implementation may outweigh its perceived benefits, resulting in a negative or insignificant relationship with firm value.

Empirical findings support these competing arguments. Prabawati & Rahmawati (2022) find that ESG scores are negatively associated with firm value measured using Tobin's Q among firms in ASEAN. By contrast, Meeprom et al. (2024), who employ Tobin's Q as a market-based measure of firm performance, find no significant direct relationship between the overall ESG score and the market-based outcome of Thailand listed firms. Narula et al. (2024) found that all ESG dimensions have no significant relationship with firm value, especially during the COVID period, which reinforces the view that market assessments of ESG are influenced by specific conditions and mechanisms in the business environment. These divergent findings indicate that the valuation consequences of ESG scores are not uniform and may depend on whether the perceived benefits of ESG implementation exceed its financial and organizational costs.

Given the competing theoretical arguments and mixed empirical evidence, this study does not posit a directional prediction regarding the relationship between ESG scores and firm value among non-financial firms in the ASEAN-6 countries. Accordingly, the first hypothesis is formulated as follows:

H_1: ESG scores are associated with firm value.

The Moderating Role of Governance

Governance mechanisms may determine whether ESG scores reflect substantive corporate commitments or merely symbolic activities that consume resources without producing commensurate economic benefits. At the firm level, corporate

governance constrains managerial discretion and aligns ESG related decisions with the interests of shareholders and other stakeholders. At the country level, formal institutions establish the policy environment within which ESG practices are implemented and evaluated. Therefore, the valuation consequences of ESG scores may depend on the interaction between internal monitoring and external institutional credibility (Ioannou & Serafeim, 2012; Jo & Harjoto, 2012). Firms with strong governance structures often benefit from improved access to capital markets and reduced capital costs (Huo et al., 2021). Stakeholder-oriented governance structures and practices, such as the implementation of ethical guidelines, stakeholder engagement policies, and transparency measures, can significantly enhance firm value. These practices build trust, reduce agency costs, and facilitate the efficient allocation of resources (Dao & Phan, 2023)

The Moderating Role of Board Size

Agency Theory suggests that the separation between ownership and control may allow managers to make decisions that do not fully maximize shareholder value (Jensen & Meckling, 1976). In the ESG context, managers may undertake environmental and social initiatives that support long-term stakeholder interests, but they may also overinvest in ESG activities to improve their personal reputation, respond to external pressure, or obtain private benefits. The board of directors therefore plays an important role in monitoring managerial decisions and ensuring that ESG initiatives are aligned with the firm's strategic objectives and the interests of its stakeholders (Epstein, 2018; Meeprom et al., 2024). Jo & Harjoto (2012) provide evidence that corporate governance mechanisms influence firms' social responsibility engagement, while Naciti (2019) shows that board composition affects corporate sustainability performance.

Board Size refers to the number of directors involved in the board's monitoring, advisory, and decision-making functions. A larger board may provide a broader pool of knowledge, professional experience, and stakeholder perspectives, thereby improving the board's capacity to process complex ESG related information (Dwekat et al., 2020). These additional resources are particularly relevant because ESG decisions often involve technical environmental issues, employee and community interests, regulatory requirements, and long-term strategic trade-offs. Husted & Sousa-filho (2019) find that Board Size is positively associated with ESG disclosure, indicating that boards with more members may possess greater capacity to oversee firms' ESG related activities and information.

A larger board may also strengthen the credibility of ESG implementation by reducing the possibility that managers undertake ESG activities merely for symbolic or reputational purposes (Husted & Sousa-filho, 2019). Greater monitoring and advisory capacity enables the board to evaluate ESG expenditures, scrutinize implementation outcomes, and require managers to demonstrate how ESG programs contribute to risk management and long-term corporate objectives. Consistent with this mechanism, Treepongkaruna et al. (2024) find that firms with larger boards experience fewer ESG controversies, suggesting that the human capital and stakeholder interactions provided by larger boards improve the oversight of ESG related conduct.

This monitoring mechanism is especially relevant when investors perceive ESG activities as imposing short-term costs. Because ESG investments may require immediate financial and organizational commitments while their benefits emerge gradually, investors may discount firm value when they are uncertain about the quality or strategic relevance of ESG implementation. Stronger board oversight can reduce this uncertainty by improving accountability, constraining managerial overinvestment, and increasing confidence that ESG resources are allocated to economically and strategically relevant activities (Husted & Sousa-filho, 2019; Treepongkaruna et al., 2024). A larger Board Size is expected to make the ESG score and firm value relationship more favorable by weakening any negative valuation associated with the perceived costs or limited credibility of ESG implementation.

H_{2a}: Board Size positively moderates the relationship between ESG scores and firm value.

The moderating Role of Regulatory Quality

Institutional Theory proposes that corporate practices are shaped by the formal rules, regulatory expectations, and enforcement mechanisms prevailing in a country. Firms operating in different institutional environments may consequently face different incentives and constraints when implementing ESG activities Matten & Moon

(2008) explain that variations in national institutional arrangements produce different forms of corporate responsibility, while Ioannou & Serafeim (2012) demonstrate that political, labor, educational, and cultural institutions significantly influence firms' corporate responsibility practices are strongly related to the legal and institutional systems of their home countries.

Regulatory Quality reflects perceptions of a government's ability to formulate and implement sound policies and regulations that support private-sector development (Kaufmann et al., 2011). Higher Regulatory Quality is generally associated with clearer corporate responsibilities, greater policy predictability, more consistent regulatory implementation, and more credible institutional oversight. These conditions reduce uncertainty regarding the standards against which firms' ESG practices are evaluated and increase confidence that corporate ESG commitments are subject to meaningful monitoring and enforcement. This definition is consistent with the Worldwide Governance Indicators' treatment of Regulatory Quality as the capacity to design and implement policies and regulations that promote private-sector development (WGI, 2025).

Regulatory Quality may consequently enhance the credibility of the information reflected in ESG scores. When policies are clearly formulated and consistently enforced, firms have less opportunity to rely solely on symbolic activities or formal compliance without substantive implementation. Investors can therefore assess more confidently whether a high ESG score reflects a genuine corporate commitment to environmental, social, and governance objectives. Baldini et al. (2018) show that country-level political, legal, labor, and cultural conditions significantly shape corporate ESG disclosure practices, indicating that the ESG information environment is partly determined by national institutions. Related evidence from Wen et al. (2022) show that ESG disclosure quality strengthens the valuation relevance of sustainability performance, including its association with Tobin's Q.

Cross-country differences in ESG regulation further reinforce the importance of the institutional environment. Comparative studies show that ESG regulatory frameworks vary considerably in their scope, maturity, and implementation across developed and developing countries (Singhania & Saini, 2022; Tang, 2023). Such differences are particularly relevant in ASEAN, where countries apply different ESG related regulation, disclosure requirements, and enforcement mechanisms. In countries with stronger Regulatory Quality, greater policy certainty and institutional consistency may improve the comparability and credibility of ESG information. In contrast, weak or inconsistent enforcement may make it more difficult for investors to distinguish substantive ESG performance from symbolic compliance (Handoyo & Anas, 2024).

The valuation consequences of ESG scores may depend on the strength of the country-level regulatory environment. Stronger Regulatory Quality is expected to reduce information uncertainty and increase investor confidence that ESG scores represent credible and enforceable corporate commitments. It may therefore make the ESG score and firm value relationship more favorable by strengthening the perceived benefits of ESG implementation or mitigating the negative valuation associated with its short-term costs. Related evidence from ASEAN indicates that Regulatory Quality can condition the consequences of ESG, although previous research has primarily focused on accounting-based firm performance rather than market-based firm value (Handoyo & Anas, 2024). Based on this reasoning, stronger Regulatory Quality is expected to improve the credibility of ESG information, reduce policy uncertainty, and strengthen institutional oversight at the country level. These conditions may increase investors' confidence in corporate ESG commitments and make the relationship between ESG scores and firm value more favorable. The following hypothesis is proposed:

H_{2b}: Regulatory Quality positively moderates the relationship between ESG scores and firm value.

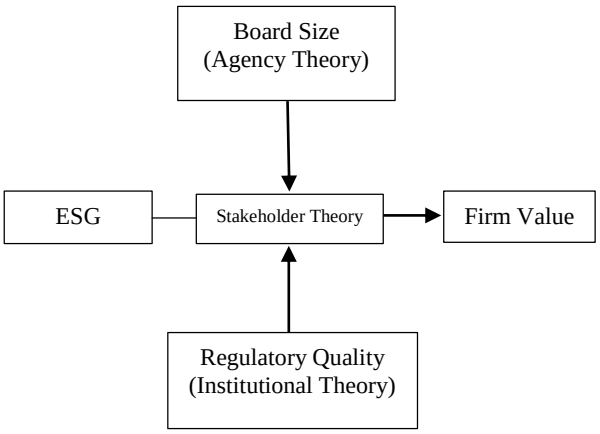


Figure 1. Conceptual framework

Research Methods

This study employs a quantitative explanatory design to examine the relationship between Environmental, Social, and Governance (ESG) scores and firm value, including the moderating roles of Board Size and Regulatory Quality. The analysis covers listed non-financial firms in Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam during 2018-2023. Financial companies are excluded because their accounting structures, methods, and practices differ from the sample (Al-Matari et al., 2014; Barontini & Caprio, 2006; Bøhren & STRøM, 2010).

The initial population was identified through Refinitiv Eikon and comprised 3,461 listed non-financial firms, equivalent to a maximum of 20,766 potential firm-year observations over the six-year period. Financial firms had already been excluded when the initial dataset was constructed; therefore, the subsequent sample-selection process was based solely on data availability.

Criterion-based purposive sampling was applied because the regression models require complete information for several variables within the same firm-year. This approach allows observational units to be selected according to predetermined criteria that are consistent with the objectives and information requirements of the study (Campbell et al., 2020; Palinkas et al., 2015). A firm-year observation was retained when: (1) the ESG score was available; (2) the market and accounting data required to calculate Tobin's Q and the control variables were complete; (3) Board Size data were available; and (4) the observation could be matched with the corresponding country-year Regulatory Quality data.

Table 1
Population and final sample by country

Country	Initial firms	Potential observations	Final firms	Final Observation	Final firm share (%)
Indonesia	808	4,848	77	329	8.17
Malaysia	1,017	6,102	533	1,373	56.52
Philippines	231	1,386	31	155	3.29
Singapore	546	3,276	86	413	9.12
Thailand	836	5,016	194	713	20.57
Vietnam	23	138	22	64	2.33
Total	**3,461**	**20,766**	**943**	**3,047**	**100**

Note: The initial population consists entirely of listed non-financial firms. The final sample was determined based on the availability of all variables required for the empirical analysis.

ESG scores, Board Size, market data, and financial information were obtained from Refinitiv Eikon, while Regulatory Quality data were collected from the World Bank's Worldwide Governance Indicators. After the selection criteria were applied, the final sample consisted of 943 non-financial firms and 3,047 firm-year observations. The resulting dataset is an unbalanced panel because complete data were not available for every firm in each observation year. Table 1 presents the initial population and final sample distribution.

Variable Measurement and Operational Definitions

The dependent variable in this study is firm value, which is measured using Tobin's Q, namely the ratio between a firm's market value and total assets (Aydo & Ergun, 2022; Chairani & Siregar, 2021; Z. Chen & Xie, 2022; Meeprom et al., 2024). The main independent variable is ESG, which is measured by an ESG score that reflects the firm's value in environmental, social, and governance dimensions. The moderating variable used in this study is internal corporate governance, which is proxied by Board Size (number of board members) (Arhinful et al., 2024; Meeprom et al., 2024; Muazaroh et al., 2025), as well as governance at the country level, measured using Regulatory Quality from Worldwide Governance Indicators (WGI). WGI summarizes the perceptions of various stakeholders regarding the quality of governance in many countries, including developing and developed countries. Referring to Uddin et al. (2020) and Muizzuddin et al. (2021), this study uses WGI indicators as a measure of institutional quality, focusing on one of its six dimensions, namely Regulatory Quality. The Regulatory Quality score ranges from around -2.5 (weak) to 2.5 (strong), so a higher value indicates better regulatory quality and a more market-supportive policy environment.

In addition, this study also includes control variables commonly used in financial studies, such as total assets (SIZE) to control for economies of scale, while growth (GROWTH) captures the dynamics of expansion. Leverage (LEVER) represents capital structure and financial risk because a greater reliance on debt may increase financial obligations and affect investors' valuation of the firm. Asset Turnover (ATO) reflects operational efficiency by indicating the firm's ability to utilize its assets to

Table 2
Measurement of variables

Variable	Variable label	Description	Source
Tobin's Q	Tobin's Q	(Market Capitalization + Total Liabilities)/Total Assets	Refinitiv Eikon
ESG Score	ESG	ESG score (0-100) reflecting a firm's environmental, social, and governance performance	Refinitiv Eikon
Board Size	BOARD	Total number of board members	Refinitiv Eikon
Regulatory Quality	RQe	WGI estimate of regulatory quality	World Gover-nance Indicators
Firm Size	SIZE	Natural logarithm of total assets	Refinitiv Eikon
Corporate Growth	GROWTH	Current year revenue divided by previous year revenue minus one	Refinitiv Eikon
Leverage	LEVER	Total liabilities divided by total assets	Refinitiv Eikon
Assets Turnover	ATO	Revenue divided by total assets.	Refinitiv Eikon
GDP Growth	GDP	Annual growth rate of real per capita gross domestic product (GDP)	World Developm ent Indicator
Inflation	INF	Inflation rate based on consumer price (annual %)	World Developm ent Indicator
COVID	COVID	Dummy COVID (2020-2021)	

generate revenue (Xu et al., 2025). The models also include GDP growth (GDP) and inflation (INF) to account for differences in macro-economic conditions across countries and periods (Chairani & Siregar, 2021; David & Wang, 2026; Farrell & Gallagher, 2019). To control for disruption during the observation period, all model specifications included a COVID dummy (2020-2021). Given that macroeconomic data and annual firm data are noisy, we winsorized these variables at the 1% level on both the lower and upper sides to limit the influence of outliers. All variables used and the measurement scales employed are described in Table 2.

Data Collection Techniques and Instruments

The data used in this study is secondary data obtained from the Refinitiv Eikon database, World Governance Indicators, and World Development Indicators.

Data Analysis Techniques and Hypothesis Testing

The empirical analysis employs a Fixed-Effects Model (FEM), considering the panel structure of the dataset, which comprises firm and time dimensions. The FEM is appropriate because it controls for unobserved firm-specific heterogeneity that remains constant over time and may be correlated with the explanatory variables, thereby reducing potential bias arising from time-invariant unobserved characteristics (Baltagi, 2021; Wooldridge, 2022). The choice between the fixed-effects and random-effects estimators was further assessed using the Hausman specification test. Accordingly, the empirical models used to examine the relationship between ESG scores and firm value and the moderating roles of Board Size and Regulatory Quality are specified as follows:

$$Tobin's\ Q_{i,t} = \beta_0 + \beta_1 ESG_{i.t} + \beta_2 SIZE_{i,t} + \beta_3 GROWTH_{i,t} + \beta_4 LEVER_{i,t} + \beta_5 ATO_{i,t} + \beta_6 GDP_{i,j} + \beta_7 INF_{i,j} + \beta_8 COVID_t + \alpha_i + \varepsilon_{i,t} \quad (1)$$

$$Tobin's\ Q_{i,t} = \beta_0 + \beta_1 ESG_{i.t} + \beta_2 BOARD_{i.t} + \beta_3 (ESG_{i.t} x BOARD_{i.t}) + \beta_4 SIZE_{i,t} + \beta_5 GROWTH_{i,t} + \beta_6 LEVER_{i,t} + \beta_7 ATO_{i,t} + \beta_8 GDP_{i,j} + \beta_9 INF_{i,j} + \beta_{10} COVID_t + \alpha_i + \varepsilon_{i,t} \quad (2)$$

$$Tobin's\ Q_{i,t} = \beta_0 + \beta_1 ESG_{i.t} + \beta_2 RQe_{i.t} + \beta_3 (ESG_{i.t} \times RQe_{i.j}) + \beta_4 SIZE_{i,t} + \beta_5 GROWTH_{i,t} + \beta_6 LEVER_{i,t} + \beta_7 ATO_{i,t} + \beta_8 GDP_{i,j} + \beta_9 INF_{i,j} + \beta_{10} COVID_t + \alpha_i + \varepsilon_{i,t} \quad (3)$$

Where:
i denotes firm, j denotes country, and t denotes year. $Tobin's\ Q_{i,t}$ represents the firm value $ESG_{i,t}$ denotes the ESG score; $BOARD_{i,t}$ represents Board Size; and $RQ_{j,t}$ denotes Regulatory Quality. $SIZE_{i,t}$, $GROWTH_{i,t}$, $LEVER_{i,t}$, and $ATO_{i,t}$ represent firm-level control variables, whereas

$GDP_{j,t}$ and $INF_{j,t}$ represent country-level macroeconomic control variables. $COVID_t$ is a dummy variable capturing the COVID-19 period. The term α_i represents time-invariant firm-specific fixed effects, while $\varepsilon_{i,j,t}$ denotes the idiosyncratic error term.

Equation (1) specifies the baseline relationship between ESG scores and firm value after controlling for firm-level and macroeconomic characteristics. The coefficient β_1 captures the within-firm association between ESG scores and Tobin's Q, holding the other explanatory variables constant.

Equation (2) extends Equation (1) by incorporating Board Size and the interaction term $ESG_{i.t} \times BOARD_{i.t}$. The coefficient β_3 represents the key moderation parameter and indicates whether Board Size alters the relationship between ESG scores and firm value. A positive β_3 indicates that a larger Board Size makes the ESG and firm value relationship more positive or attenuates a negative association between ESG scores and firm value.

Equation (3) extends Equation (1) by incorporating Regulatory Quality and the interaction term $ESG_{i.t} \times RQe_{i.j}$. The coefficient β_3 represents the key moderation parameter and indicates whether country-level Regulatory Quality alters the relationship between ESG scores and firm value. A positive β_3 indicates that stronger Regulatory Quality makes the ESG and firm value relationship more positive or attenuates a negative association between ESG scores and firm value.

Results and Discussion

Descriptive statistics in Table 3 show that the total number of observations during the 2018-2023 period was 3,047. The average Tobin's Q value was 1.59, with a minimum value of 0.45 and a maximum value of 8.54, reflecting considerable variation in market assessments of companies during the study period. The ESG score has an average value of 45.17 with a standard deviation of 18.64, indicating a relatively moderate level of ESG disclosure but with high heterogeneity between companies. The wide range of ESG scores, with a minimum value of 8.68 and a maximum of 86, shows significant differences in companies' sustainability commitments and practices.

The average board size is 8.63 members, with a minimum of 3 and a maximum of 17, reflecting variations in the internal governance structure of companies. The supervisory and decision-making capacities of boards differ substantially between companies. On the other hand, Regulatory Quality (RQe) has an average of 0.65, ranging from -0.04 to 2.31, reflecting differences in regulatory quality among ASEAN countries. This variation confirms the heterogeneity of the institutional environment in the ASEAN-6 region, which has the potential to influence market responses to ESG practices.

In addition, to accommodate the potential disruption of the pandemic, this study included a COVID dummy variable, which had a value of 1 during the pandemic period and 0 during other periods. Descriptive statistics show that COVID had an average of 0.29 (sd = 0.45), with a minimum value of 0 and a maximum value of 1, which means that approximately 29% of observations were during the pandemic. The inclusion of this dummy is important to ensure that the estimation of the relationship between ESG and firm value is not disrupted by extreme macro shocks during the COVID period.

Table 3
Descriptive statistics

	count	mean	sd.	min	max
Tobin's Q	3,047	1.59	1.30	0.45	8.54
ESG	3,047	45.17	18.64	8.68	86.00
SIZE	3,047	20.52	1.90	16.21	23.48
GROWTH	3,047	0.09	0.37	-0.66	2.00
LEVER	3,047	0.47	0.21	0.06	0.95
ATO	3,047	0.65	0.58	0.04	3.19
BOARD	3,047	8.63	2.87	3.00	17.00
RQe	3,047	0.65	0.68	-0.04	2.31
GDP	3,047	3.62	3.80	-6.05	9.76
INF	3,047	2.63	2.34	-1.61	8.48
COVID	3,047	0.29	0.45	0.00	1.00

Table 4 presents the Pearson correlation coefficients as an initial assessment of the bivariate relationships among the variables. ESG scores are positively and significantly correlated with Tobin's Q and Board Size, whereas their correlation with Regulatory Quality is not significant. These results describe only linear associations between pairs of variables and do not account for other firm or country-level factors. The positive correlation between ESG scores and Tobin's Q does not contradict the negative coefficient obtained from the fixed-effects regression. Pearson correlation reflects an unconditional bivariate relationship, while the fixed-effects model estimates the within-firm relationship after controlling for firm characteristics,

Table 4
Pearson correlation matrix

Variables	VIF	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Tobin's Q		1.000										
(2) ESG	1.44	0.086*	1.000									
		(0.000)										
(3) SIZE	1.96	-0.152*	0.509*	1.000								
		(0.000)	(0.000)									
(4) GROWTH	1.03	0.031*	-0.002	0.018	1.000							
		(0.083)	(0.893)	(0.309)								
(5) LEVER	1.35	-0.062*	0.219*	0.459*	0.059*	1.000						
		(0.001)	(0.000)	(0.000)	(0.001)							
(6) ATO	1.12	0.283*	-0.046*	-0.240*	0.040*	0.034*	1.000					
		(0.000)	(0.011)	(0.000)	(0.029)	(0.064)						
(7) BOARD	1.24	-0.020	0.334*	0.331*	-0.003	0.163*	-0.040*	1.000				
		(0.268)	(0.000)	(0.000)	(0.860)	(0.000)	(0.026)					
(8) RQe	1.10	-0.163*	-0.023	0.133*	0.011	-0.102*	-0.166*	-0.096*	1.000			
		(0.000)	(0.195)	(0.000)	(0.535)	(0.000)	(0.000)	(0.000)				
(9) GDP	1.50	-0.055*	-0.154*	-0.197*	0.131*	-0.108*	0.016	-0.253*	0.039*	1.000		
		(0.002)	(0.000)	(0.000)	(0.000)	(0.000)	(0.388)	(0.000)	(0.030)			
(10) INF	1.23	-0.072*	-0.001	-0.047*	0.003	-0.025	-0.018	-0.115*	0.027	0.370*	1.000	
		(0.000)	(0.958)	(0.010)	(0.865)	(0.160)	(0.329)	(0.000)	(0.143)	(0.000)		
(11) COVID	1.39	0.037*	0.034*	0.159*	-0.048*	0.083*	-0.040*	0.082*	0.035*	-0.479*	-0.359*	1.000
		(0.042)	(0.064)	(0.000)	(0.008)	(0.000)	(0.027)	(0.000)	(0.053)	(0.000)	(0.000)	
Mean	1.34											

macroeconomic conditions, time-invariant firm heterogeneity, and year effects. The change in coefficient direction therefore indicates that the positive raw association may partly arise from differences across firms or other factors captured by the regression controls.

Multicollinearity was assessed using pairwise correlations and the variance inflation factor. All correlations among the explanatory variables are below 0.80, indicating no serious multicollinearity concern (Kennedy, 2008). Similarly, all VIF values are below 3 and therefore remain well below the threshold of 10 commonly associated with severe multicollinearity (Kutner et al., 2005). These results suggest that multicollinearity is unlikely to materially affect the regression estimates.

Main Results: ESG Scores and Firm Value

Prior to interpreting the regression results, the Hausman specification test was conducted to determine the appropriate panel-data estimator. As reported in Table 5, the Hausman test yielded $\chi^2 = 38.70$ ($p < 0.001$) for column (1) and $\chi^2 = 181.32$ ($p < 0.001$) for column (2).

These results reject the null hypothesis that the differences between the fixed-effects and random-effects coefficients are not systematic, supporting the use of the Fixed-Effects Model (FEM) rather than the Random-Effects Model (REM).

The regression results in Table 5 show that ESG is negatively and significantly associated with firm value, as measured by Tobin's Q. In column (1), the ESG coefficient is -0.0110 and statistically significant at the 1% level (t = -6.83). In column (2), after incorporating firm-level and macroeconomic control variables, the ESG coefficient remains negative and statistically significant at -0.00413 (t = -2.60). The consistency in the direction and statistical significance of these coefficients indicates that higher ESG scores are associated with lower firm value among non-financial firms in the ASEAN-6 countries during the observation period.

Table 5
The impact of ESG on Firm Value

	(1) Tobin's Q	(2) Tobin's Q
ESG	-0.0110***	-0.00413***
	(-6.83)	(-2.60)
SIZE		-0.740***
		(-9.92)
GROWTH		-0.00611
		(-0.18)
LEVER		0.836***
		(4.16)
ATO		1.090***
		(12.07)
GDP		-0.00293
		(-0.88)
INF		-0.0133***
		(-2.69)
COVID		0.125***
		(4.86)
Constant	2.084***	15.86***
	(28.42)	(10.51)
Observations	3,047	3,047
Firms	943	943
Within R^2	0.0217	0.157
Hausman test		
χ^2	38.70	181.32
p-Value	0.0000	0.0000

Note: Column (1) presents the baseline specification examining the direct effect of ESG on Tobin's Q without control variables, whereas Column (2) reports the fully specified model incorporating all control variables. Values in parentheses are t-statistics. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Moderation Results: Board Size and Regulatory Quality

Table 6 presents the moderating roles of Board Size and Regulatory Quality in the relationship between ESG scores and firm value. In column (3), the interaction between ESG scores and Board Size (ESGxBOARD) is positive and statistically significant at the 10% level, with a coefficient of 0.000710 (t = 1.69). Given the negative coefficient of ESG, the positive interaction coefficient indicates that a larger Board Size attenuates the negative association between ESG scores and firm value. This result provides support for H2a.

This finding is consistent with the view that a larger board may provide greater monitoring and advisory capacity, thereby strengthening the credibility and effectiveness of ESG implementation. Stronger board oversight may reduce investor concerns regarding inefficient or symbolic ESG expenditures and consequently mitigate the negative valuation associated with ESG activities.

In column (4), the interaction between ESG scores and Regulatory Quality (ESGxRQe) is positive but statistically insignificant, with a coefficient of 0.00197 (t = 0.97). Thus, the results do not provide evidence that Regulatory Quality significantly moderates the contemporaneous relationship between ESG scores and firm value. Accordingly, H2b is not supported by the baseline specification.

Robustness Test

As a robustness test, this study re-estimates the models using one-year lagged ESG scores (ESG_{t-1}) (Rahat & Nguyen, 2024). The use of lagged variables reduces the number of observations because lagged ESG values are unavailable for the first year of each firm. Moreover, because the dataset is an unbalanced panel, gaps in the observation periods and missing ESG data in preceding years further reduce the number of usable observations. Therefore, the estimations are conducted on a subsample with sufficient historical information. To ensure that the results were not affected by sample differences, the baseline specification was also re-estimated on the same subsample.

The results shown in Tables 7 and 8 indicate that the effect of ESG on firm value remains negative and significant in both contemporaneous and one-year lagged specifications. This consistency indicates that the main finding is not driven solely by differences in sample composition or by the timing of ESG measurement. The interaction between ESG scores and Board Size also remains positive and significant across the specifications, providing further evidence that stronger board monitoring consistently attenuates the negative association between ESG scores and firm value.

Table 6
The moderating role of board size and regulatory quality on the relationship between ESG and Firm Value

	(3) Tobin's Q	(4) Tobin's Q
ESG	-0.0105**	-0.00385*
	(-2.55)	(-1.85)
BOARD	-0.0104	
	(-0.46)	
ESGxBOARD	0.000710*	
	(1.69)	
RQe		-0.534**
		(-2.43)
ESGxRQe		0.00197
		(0.97)
SIZE	-0.739***	-0.704***
	(-9.88)	(-9.26)
GROWTH	-0.00780	-0.00279
	(-0.23)	(-0.08)
LEVER	0.848***	0.830***
	(4.22)	(4.13)
ATO	1.082***	1.085***
	(11.98)	(12.01)
GDP	-0.00306	-0.00385
	(-0.92)	(-1.15)
INF	-0.0134***	-0.0114**
	(-2.69)	(-2.25)
COVID	0.123***	0.140***
	(4.77)	(5.24)
Constant	15.95***	15.42***
	(10.57)	(10.12)
Observations	3,047	3,047
Firms	943	943
Within R^2	0.159	0.159

Note: Values in parentheses are t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Regulatory Quality, however, produces a different pattern. In the baseline contemporaneous model, the interaction between ESG scores and Regulatory Quality is not statistically significant, indicating that Regulatory Quality does not condition the ESG and firm value relationship within the same observation period. In contrast, when ESG is lagged by one year, the interaction between ESG_{t-1} and Regulatory Quality (Table 7) becomes statistically significant. Rather than contradicting the baseline finding, this result suggests that the influence of the country-level institutional environment may require time before

it is reflected in market valuation. Investors may not immediately incorporate regulatory conditions into their assessment of corporate ESG activities because the credibility of regulations, consistency of policy implementation, and effectiveness of enforcement become observable only gradually. Accordingly, the lagged specification points to a possible delayed institutional effect, rather than providing evidence of an immediate moderating effect of Regulatory Quality.

Table 7
ESG_lag (ESG_{t-1})

	(1) Tobin's Q	(2) Tobin's Q	(3) Tobin's Q
ESG_lag	-0.00626***	-0.0153***	-0.00780***
	(-3.53)	(-3.46)	(-3.44)
BOARD		-0.0232	
		(-0.92)	
ESG_lagxBOARD		0.000994**	
		(2.24)	
RQe			-0.527**
			(-2.14)
ESG_lagxRQe			0.00412**
			(1.97)
SIZE	-0.818***	-0.811***	-0.794***
	(-9.08)	(-8.96)	(-8.71)
GROWTH	0.0496	0.0479	0.0532
	(1.26)	(1.22)	(1.35)
LEVER	0.732***	0.756***	0.720***
	(3.05)	(3.16)	(3.00)
ATO	1.028***	1.030***	1.027***
	(9.60)	(9.64)	(9.60)
GDP	-0.00670**	-0.00726**	-0.00664**
	(-2.03)	(-2.20)	(-2.00)
INF	-0.0134***	-0.0139***	-0.0130***
	(-2.78)	(-2.87)	(-2.69)
COVID	0.131***	0.128***	0.137***
	(4.60)	(4.50)	(4.79)
Constant	17.90***	17.95***	17.70***
	(9.64)	(9.69)	(9.50)
Observations	2,096	2,096	2,096
Firms	822	822	822
Within R^2	0.206	0.212	0.210

Note: Values in parentheses are t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

This interpretation is consistent with Institutional Theory, which suggests that institutional arrangements influence corporate behavior by establishing formal expectations, legitimacy, and constraints within which firms operate (Maji & Lohia, 2023). However, commonly used measures of Regulatory Quality capture the broader capacity of governments to formulate and implement policies rather than ESG-specific regulation and enforcement (Kaufmann et al., 2011). Consequently, improvements in general Regulatory Quality may not immediately translate into more credible ESG implementation or more informative ESG signals for capital-market participants.

Table 8
Matched sample

	(1) Tobin's Q	(2) Tobin's Q	(3) Tobin's Q
ESG	-0.00491**	-0.0158***	-0.00516**
	(-2.50)	(-3.08)	(-2.06)
BOARD		-0.0332	
		(-1.16)	
ESGxBOARD		0.00118**	
		(2.30)	
RQe			-0.553**
			(-2.13)
ESGxRQe			0.00254
			(1.00)
SIZE	-0.813***	-0.806***	-0.785***
	(-8.98)	(-8.86)	(-8.59)
GROWTH	0.0491	0.0462	0.0554
	(1.25)	(1.18)	(1.40)
LEVER	0.730***	0.766***	0.728***
	(3.04)	(3.19)	(3.03)
ATO	1.058***	1.059***	1.052***
	(9.89)	(9.93)	(9.84)
GDP	-0.00614*	-0.00679**	-0.00669**
	(-1.85)	(-2.05)	(-2.01)
INF	-0.0160***	-0.0159***	-0.0150***
	(-3.41)	(-3.38)	(-3.17)
COVID	0.140***	0.140***	0.144***
	(4.94)	(4.92)	(5.05)
Constant	17.74***	17.87***	17.46***
	(9.53)	(9.62)	(9.35)
Observations	2,096	2,096	2,096
Firms	822	822	822
Within R^2	0.203	0.208	0.205

Note: Values in parentheses are t-statistics. ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

The distinction between regulatory design and regulatory enforcement may be particularly important in emerging economies. Formal regulations can be established relatively quickly, whereas their effectiveness depends on implementation capacity, monitoring, and consistent enforcement. Weak enforcement and higher levels of opportunistic behavior may limit the extent to which formal regulations enhance the credibility of ESG information (Cole, 2007; Ibrahim & Law, 2016). Similarly, the economic benefits associated with ESG may be more difficult to realize when institutional development and enforcement remain limited (Rahmaniati & Ekawati, 2024). These conditions may help explain why Regulatory Quality is insignificant in the contemporaneous model but becomes relevant when ESG is evaluated with a one-year lag.

Internal governance mechanisms may also be more immediately observable to investors than broad country-level institutional indicators. Board

characteristics are directly associated with corporate decision-making and monitoring, whereas changes in national regulatory credibility may require a longer period to influence firms' practices and investors' expectations. This distinction is consistent with the finding that Board Size produces a stable moderating effect across specifications, while the influence of Regulatory Quality emerges only in the lagged model.

Overall, the robustness results reinforce the main conclusion regarding ESG scores and Board Size while providing a more nuanced interpretation of Regulatory Quality. The baseline analysis does not support a more nuanced interpretation of Regulatory Quality. The baseline analysis does not support a contemporaneous moderating role of Regulatory Quality; therefore, H_{2b} remains unsupported in the main specification. Nevertheless, the lagged result suggests that country-level institutional conditions may become relevant over time as regulatory credibility, policy consistency, and enforcement mechanisms are gradually incorporated into firms' ESG practices and investors' valuation decisions. Thus, the baseline and lagged findings should be viewed as complementary rather than contradictory.

Discussion

The results indicate that ESG is negatively associated with firm value in ASEAN-6. These findings align with evidence from emerging markets, where ESG does not always receive a favorable market response (Ng et al., 2024; P. & Busru, 2021; Prabawati & Rahmawati, 2022). Mechanistically, there are several explanations that support this negative direction. In the developing phase of ESG adoption, companies may face tangible and immediate adjustment costs, such as increased compliance costs, strengthened reporting systems, changes in operational processes, and cross-functional coordination costs. These costs can put pressure on short-term cash flow efficiency, while the economic benefits of ESG tend to be realized gradually (Bushra et al., 2025). As a result, in the short term, the market may view ESG as a cost burden that is not yet offset by measurable financial benefits.

From the perspective of Stakeholder Theory, ESG activities can strengthen legitimacy, stakeholder relationships, and corporate reputation (Freeman, 1984). However, these benefits depend on whether investors regard firms' ESG commitments as credible and economically meaningful. When ESG information is difficult to compare or when the distinction between substantive and symbolic implementation is unclear, investors may be reluctant to incorporate the expected benefits of ESG fully into firm valuation. Under these conditions, the immediate costs of ESG may receive greater weight than its less certain future benefits.

The issue is particularly relevant in ASEAN-6, where countries differ in institutional development, regulatory capacity, ESG practices, and capital-market characteristics (Sustainalytics, 2021). Such heterogeneity may increase uncertainty regarding the quality and comparability of ESG information across firms and countries. As a result, investors may initially interpret ESG primarily as a mechanism for managing environmental, social, and governance risks rather than as an immediate source of additional firm value. This provides a plausible explanation for the negative ESG and firm value relationship identified in the baseline model.

The results further show that Board Size moderates the relationship between ESG and firm value by attenuating the negative effect of ESG. This finding highlights the role of internal governance in shaping how ESG initiatives are interpreted by the market (Meeprom et al., 2024). Under Agency Theory, the board of directors serves as a monitoring mechanism that constrains managerial discretion and aligns managerial decisions with the interests of shareholders and other stakeholders (Jensen & Meckling, 1976). A larger board may provide broader expertise, information-processing capacity, and monitoring resources, which are particularly relevant when firms undertake complex ESG-related investments.

Stronger oversight improves the credibility of ESG implementation by reducing managerial opportunism and improving accountability for ESG-related resource allocation (Aladdin Dwekat et al., 2020; Husted & Sousa-filho, 2019). When investors perceive that ESG activities are subject to effective internal monitoring, concerns regarding excessive expenditure, symbolic implementation, or managerial self-interest may decline. The positive ESGxBoard Size interaction therefore suggests that internal governance can reduce the negative valuation associated with ESG activities and facilitate their translation into firm value. This interpretation is consistent with the view that

effective governance enhances the economic relevance of responsible corporate practices (Godfrey et al., 2009).

In contrast, Regulatory Quality does not significantly moderate the contemporaneous relationship between ESG scores and firm value in the baseline model. This result indicates that differences in country-level Regulatory Quality are not sufficient to alter the market valuation of ESG within the same observation period. One possible explanation is that Regulatory Quality is a broad institutional measure that captures the government's general capacity to formulate and implement policies rather than the strength of ESG-specific regulation or enforcement (Kaufmann et al., 2011). Therefore, stronger general Regulatory Quality does not necessarily imply that corporate ESG activities are immediately perceived as more credible or economically valuable.

The robustness analysis, however, provides an important qualification to this baseline finding. When ESG scores are lagged by one year, the interaction between ESG_{t-1} and Regulatory Quality becomes statistically significant. This result suggests that the institutional effect may operate with a time delay. Rather than immediately changing the market response to ESG, stronger Regulatory Quality may influence firm value only after investors have had sufficient time to observe whether policy commitments are consistently implemented, regulations are effectively enforced, and firms adjust their ESG practices to the institutional environment.

From an institutional perspective, this delayed response is plausible because the credibility of country-level regulation is established through repeated implementation and enforcement rather than through the existence of formal policies alone. Investors may require time to assess whether regulatory changes produce substantive improvements in corporate accountability and ESG practices. Similarly, firms may need time to adapt their strategies, reporting processes, and resource allocation to regulatory requirements. The resulting benefits may therefore appear in market valuation only after these institutional signals have been internalized by firms and capital-market participants.

This interpretation is especially relevant for developing and emerging economies, where the effectiveness of regulation may depend more on enforcement capacity than on formal regulatory design. Weak enforcement and opportunistic behavior can limit the credibility of institutional mechanisms even when formal regulations are relatively well developed (Cole, 2007; Ibrahim & Law, 2016). Previous evidence also suggests that the benefits of ESG may be weaker in environments where regulatory institutions and enforcement mechanisms remain underdeveloped (Rahmaniati & Ekawati, 2024).

The different results for Board Size and Regulatory Quality also illustrate the distinction between firm-level and country-level governance mechanisms. Board monitoring is directly embedded in corporate decision-making and may therefore be more immediately visible to investors. In contrast, Regulatory Quality operates through broader institutional channels, including policy certainty, enforcement credibility, and the gradual standardization of corporate behavior. These mechanisms may require a longer period before affecting investors' assessments of ESG performance.

Accordingly, H_{2b} is not supported by the baseline model because Regulatory Quality does not significantly moderate the contemporaneous ESG and firm value relationship. Nevertheless, the lagged robustness result suggests a possible delayed institutional effect. These two findings are not contradictory; the baseline model captures the absence of an immediate moderating effect, whereas the lagged specification indicates that country-level Regulatory Quality may become relevant after sufficient time has elapsed for institutional mechanisms to influence firms' ESG implementation and investors' valuation decisions.

Overall, the findings indicate that improving the value relevance of ESG in ASEAN-6 may require more than the formal development of regulatory frameworks. Effective implementation, consistent enforcement, credible institutional oversight, and strong firm-level governance appear important for enabling ESG activities to be recognized as economically meaningful by capital markets. Without these supporting conditions, ESG initiatives may continue to be perceived as costly or uncertain in the short term, limiting their immediate contribution to firm value.

Conclusions and Implications

This study examines the relationship between Environmental, Social, and Governance (ESG) scores and firm value, measured using Tobin's Q, among non-financial listed firms in ASEAN-6

during the 2018-2023 period, while considering governance mechanisms at both the firm level (Board Size) and the country level (Regulatory Quality). The results show that ESG scores are negatively associated with firm value, indicating that in a heterogeneous emerging-market context such as ASEAN, the economic benefits of ESG may not be immediately incorporated into market valuation and may instead be perceived as short-term adjustment costs whose expected benefits remain uncertain. The findings also show that Board Size mitigates this negative association, supporting the role of internal board monitoring in strengthening the accountability and credibility of ESG implementation. Regulatory Quality, however, is not found to significantly moderate the ESG and firm value relationship in the baseline model. Nevertheless, the robustness analysis using one-year lagged ESG scores reveals a significant interaction with Regulatory Quality, suggesting that the influence of country-level institutional conditions may emerge with a time delay rather than within the same period. This lagged result complements rather than contradicts the baseline finding, as regulatory credibility, policy consistency, and enforcement mechanisms may require time before they are reflected in firms' ESG practices and investors' valuation decisions.

The practical implication for corporate managers is that ESG activities need to be managed efficiently and aligned with material business risks so that they are not perceived by investors merely as short-term costs. Firms should prioritize ESG initiatives that are relevant to their business models, establish measurable targets, and strengthen board involvement through effective monitoring and accountability. For regulators and policymakers, the findings indicate that improving general Regulatory Quality alone may not be sufficient to enhance the market relevance of ESG. Greater attention should also be directed toward ESG-specific implementation, consistent enforcement, comparable reporting requirements, and credible verification mechanisms that can strengthen investors' confidence in the information reflected in ESG scores.

Limitations and Future Research

This study is subject to several limitations. First**,** the sample is restricted to non-financial listed firms in the ASEAN-6 countries during 2018-2023; therefore, the findings may not be directly generalizable to financial institutions, other regions, or different institutional settings**.** Second, Regulatory Quality is a broad country-level governance indicator and does not specifically capture ESG-related regulation, reporting requirements, or enforcement intensity. This limitation may partly explain why its moderating effect is not significant in the contemporaneous baseline specification.

Future studies may extend the observation period and examine other countries or industries. Further research could also incorporate more specific firm-level governance mechanisms, such as ESG assurance, board independence, board expertise, and the presence of an ESG or sustainability committee. At the country level, future studies may employ more targeted institutional measures that capture ESG-specific regulations, disclosure mandates, enforcement quality, or sustainability-related policy development. Such extensions may provide a more comprehensive understanding of how internal and external governance mechanisms shape the relationship between ESG scores and firm value over time.

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