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UNVEILING THE ROLE OF AUDIT QUALITY IN STRENGTHENING THE ESG PERFORMANCE-FIRM VALUE NEXUS: EVIDENCE FROM EMERGING ASIA

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Abstract

This research investigates the relationship between Firm value and Environmental, Social, and Governance (ESG) performance, considering the conditioning influence of audit quality. Utilizing data from seven emerging economies over the period 2011-2022. We have conducted empirical analysis using two-stage least squares (2SLS) and fixed effect regression. According to our results, ESG performance has a significant and positive impact on corporate value in emerging economies. The Quartile analysis showed a stronger ESG performance-firm value relationship in higher ESG engagement quartiles. The positive effect of ESG performance on firm value is primarily mediated through two channels: mitigating financial constraints and enhancing analyst coverage. Additionally, we discovered that the relationship between ESG performance and firm value is significantly moderated by audit quality. The higher the audit quality, the stronger the positive effect of ESG on firm value. These findings stand up well against a number of robustness tests and offer insightful policy recommendations for stakeholders in boosting company value through ESG involvement.

INTRODUCTION

The emphasis on environmental, social, and governance (ESG) considerations has evolved from an aside to a crucial strategy for sustained profitability as global markets shift. This shift is particularly pronounced in emerging Asian markets, where rapid economic expansion is often accompanied by increased scrutiny regarding sustainability practices. As investors and stakeholders increasingly demand transparency and ethical conduct, the performance of firms in adhering to ESG standards has become a critical determinant of their market value (Eccles et al., 2014).The significance of Environmental, Social, and Governance (ESG) performance in shaping firm value has gained considerable attention in both academic research and corporate practice. ESG performance is increasingly viewed as a key determinant of long-term sustainability and competitiveness, with firms that integrate ESG factors into their strategies often experiencing improved financial performance and market valuation (Friede et al., 2015). According to studies, businesses that implement sound ESG policies typically benefit from increased reputation, reduced risk, and easier access to capital all of which raise the firm's worth.(Cheng et al., 2014; Fatemi et al., 2015). In particular, ESG factors can mitigate risks related to environmental regulation, social responsibility,

and governance practices, making them critical components in investors' decision-making processes (Flammer & Luo, 2017). As global markets increasingly prioritize sustainability, ESG performance has become a central aspect of corporate strategy, with direct implications for a firm's financial health and market success (Eccles et al., 2014). Existing research has largely focused on developed markets, emerging economies in Asia present a unique context where the impact of ESG on firm value is less explored. These markets, characterized by rapid growth, evolving regulatory frameworks, and cultural diversity, offer fertile ground for studying how ESG practices influence corporate outcomes (Laskar & Maji, 2016; Zheng et al., 2022).

Against this backdrop, this study aims to investigate the role of ESG performance in enhancing firm value within emerging Asian markets, with a particular focus on two critical channels: analyst coverage and financial constraints. Analyst coverage reduces information asymmetry, especially in markets with limited transparency, by making ESG data more accessible and enhancing market perceptions (Ioannou & Serafeim, 2015). Strong ESG performance attracts greater analyst attention, boosting a firm's visibility and credibility, and leading to higher firm value, particularly in emerging markets with weaker financial reporting standards (Blinkhorn, 2020).Financial constraints are another key channel through which ESG performance influences firm value. The Resource-Based View (RBV) argues that strong ESG practices improve reputation and stakeholder trust, reducing risks and easing capital access, which is crucial in emerging markets with underdeveloped financial systems (Barney, 1991 (Barney, 1991; Ioannou & Serafeim, 2015).

This study also looks into the relationship between firm value and ESG performance and how audit quality influences it. The relationship between ESG performance and corporate value is moderated by audit quality, which improves investor confidence, reduces information asymmetry, and ensures the accuracy of ESG disclosures. Low audit quality weakens the link and undermines trust in ESG reports, whereas high audit quality boosts the positive impacts of ESG performance on business value.

Based on 5,737 company-year observations from 2012 to 2022 and data from 475 non-financial companies in emerging Asian nations, we conclude that ESG performance raises firm value through fewer financial limitations and more analyst coverage. Robustness checks support our findings, and quartile analysis discloses a stronger correlation among company value and ESG in higher ESG involvement quartiles. Additionally, our results show that the effect of ESG performance on company value is favorably moderated by audit quality. The higher the audit quality, the greater the positive impact of ESG on corporate value.

This study makes a valuable contribution to the literature by demonstrating that strong ESG performance enhances business value in rapidly developing Asian markets. This positive effect is largely driven by increased analyst coverage and fewer financial constraints. A key innovation of the research lies in its exploration of the role of audit quality in shaping the relationship between ESG performance and firm value. High-quality audits lend greater credibility to ESG disclosures, helping to reduce information asymmetry and build investor trust. As a result, the positive impact of ESG performance on firm value is amplified when audit quality is strong. Conversely, poor audit quality undermines confidence in ESG reports and weakens this relationship. These findings underscore the importance of reliable auditing in maximizing the benefits of ESG efforts and offer important insights for policymakers and stakeholders seeking to promote sustainable and transparent business practices.

2. Literature Review and Hypothesis Development

2.1 ESG performance and firm value

In recent years, the role of Environmental, Social, and Governance (ESG) criteria has shifted from a marginal consideration to a central component of corporate strategy, particularly in emerging Asian markets. This transition reflects a broader global trend where ESG performance is increasingly seen as a crucial determinant of firm value. Studies have consistently demonstrated that firms excelling in ESG practices often experience improved financial

performance and market valuation (Eccles et al., 2014; Friede et al., 2015). For instance, strong ESG practices have been associated with better access to capital, lower risk profiles, and enhanced reputational benefits, all contributing to higher firm value (Cheng et al., 2014; Fatemi et al., 2015). ESG factors help mitigate risks related to environmental regulations, social responsibilities, and governance issues, which are increasingly critical in investors' decision-making processes (Flammer & Luo, 2017). Emerging Asian economies markets, characterized by rapid growth, evolving regulatory environments, and diverse cultural landscapes, provide a distinct setting for examining ESG's impact on firm value (Laskar & Maji, 2016; Zheng et al., 2022). In these regions, the effect of ESG practices on corporate outcomes remains underexplored, presenting an opportunity to understand how ESG performance influences firm value through specific mechanisms. Analyst coverage plays a pivotal role in reducing information asymmetry, especially in markets with limited transparency. Enhanced ESG performance can attract more analyst attention, thereby improving a firm's visibility and credibility and, consequently, its market value (Ioannou & Serafeim, 2015). Financial constraints are another significant aspect affecting the relationship between company value and ESG performance. Strong ESG practices, in accordance with the Resource-Based View (RBV), enhance a company's standing and stakeholder confidence while reducing risks and facilitating capital access, which gives it an edge in emerging economies with less established financial systems (Barney, 1991; Cheng et al., 2014). Companies that excel in ESG standards are better positioned to overcome financial restraints and increase their market value.

Moreover, firms in more developed financial markets enjoy better access to capital and greater investor interest (Bhaskaran et al., 2020; De Lucia et al., 2020);). Conversely, in less developed financial systems, strong ESG performance may yield fewer benefits due to higher information asymmetry and restricted capital access. Similarly, high institutional quality can amplify ESG performance's advantages byimproving regulatory enforcement and rewarding robust ESG practices, thus further enhancing firm value (Garcia & Orsato, 2020). Based on the literature review, we propose the following hypotheses:

H1: ESG performance has significant positive impact on firm value.

2.2 Moderating Role of Audit Quality

Jensen and Meckling's (1976) agency theory offers a solid theoretical foundation for comprehending how audit quality influences the link between corporate value and ESG performance. According to this theory, there is a chance for opportunistic behaviour when management and stakeholders have unequal access to information. Auditing serves as a critical tool to mitigate these agency problems by improving transparency, reducing information gaps, and fostering trust among stakeholders (Agyei-Mensah, 2018; Habbash & Alghamdi, 2017). The capacity of the auditor to identify and disclose material misstatements in financial reporting while maintaining accuracy and credibility is known as audit quality (De Angelo, 1988). High audit quality minimizes errors and ensures that financial and non-financial reports, including ESG disclosures, are reliable. Accurate ESG performance disclosures reduce agency conflicts and strengthen the trust of investors and other stakeholders, which, in turn, positively influences firm value (Dewi & Monalisa, 2016).

The size and reputation of audit firms also play a significant role in determining audit quality. Larger firms, such as the Big Four, maintain stringent auditing standards to safeguard their reputational capital and ensure independence from their clients (De Angelo, 1988; Bacha et al., 2020). These firms invest in advanced technology and highly skilled personnel, enabling them to provide more reliable ESG disclosures. Studies have shown that firms audited by the Big Four exhibit stronger financial and social performance due to the enhanced credibility of their ESG reporting (Phan et al., 2020; Agyei-Mensah, 2018). Audit costs are another indicator of audit quality, as higher fees often reflect greater diligence and rigor in the audit process (Ali & Lesage, 2013; Griffin et al., 2010). Accurate reporting of ESG practices is guaranteed by trustworthy audits, which boosts stakeholder confidence and strengthens the connection among business value and Environmental Social

Governance performance. High-quality audits increase the perceived value of ESG activities by lowering the risk of misrepresentation and guaranteeing the correctness of ESG disclosures. Additionally, audit theory highlights that the quality of external audits determines their efficacy (Kausar et al., 2016; Knechel et al., 2013). High audit quality reduces information asymmetry and curtails opportunistic behavior, strengthening the positive relationship between ESG performance and firm value. Consequently, firms with better ESG performance and high audit quality are more likely to experience enhanced firm value due to increased investor confidence and reduced agency conflicts. The hypothesis that follows is drawn out in light of the theoretical and empirical evidence:

H2: Audit quality positively moderates the relationship between ESG performance and firm value.

3. Data and Methodology

3.1 Sample and Data

The non-financial companies that are listed on stock markets in China, India, Indonesia, Malaysia, Korea, the Philippines, Taiwan, and Thailand are the subject of this research. We examine 5,736 panel data observations from 478 publicly traded firms between 2012 and 2022 using ESG ratings from the Refinitiv database. This long period of time makes it possible to thoroughly analyse the effects and trends in government, society, and the environment. These economies are categorised as emerging according to the MSCI Global Market Accessibility criteria. The Thomson Reuters database, which is renowned for its dependability and thorough coverage of financial and sustainability statistics, provided the data for this study.

The study's dependent variable is firm value, which is assessed using a variety of proxies in the body of current research. Some scholars prefer Tobin's Q rather than Book value to measure company's values (Dalal & Thaker, 2019; Naeem & Çankaya, 2022; Saygili et al., 2021). While, Return on Assets (ROA) and Return of Equity (ROE) is also utilized for the same purpose by studies (Naeem & Çankaya, 2022; Saygili et al., 2021). We apply Tobin's Q to measure firm value, as well as we use Return on Assets (ROA) and Return of Equity (ROE) for robustness testing. Here is formula that we use to calculate Tobi's Q:

$$Tobin's\ Q = \frac{(\text{Equity Market Value} + \text{Liabilities Market Value})}{(\text{Equity Book Value} + \text{Liabilities Book Value})}$$

Four independent variables are used in this study: the individual Environment, Social, and Governance scores as well as the overall ESG performance score. Due to its extensive and long-term dataset, which has been accessible since 2002, these ESG measures, which come from Refinitiv, are well respected in scholarly study (Chairani & Siregar, 2021; Duque-Grisales & Aguilera-Caracuel, 2021). Refinitiv compiles data from public sources, such as business websites and annual reports, and supplements it with direct company information, which is then audited to produce the ESG scores.

Audit quality is used as a moderating variable in the study. We measure it by using a dummy variable which has a value of 1 if the company's financial statements are audited by one of the Big Four firms, and 0 otherwise. Big Four firms are more driven to deliver superior auditing services in order to maintain their reputation because of their well-known brand names (Angelo, 1988; Watkins et al., 2004).

Determining the firm's value involves a number of elements. To investigate how ESG performance affects business value, we take into consideration control variables derived from earlier research, such as firm size (LN of total Assets), financial leverage(Debt to equity Ratio), Tangibility(PP&E to Total Asset), Firm Age (Sample year –listing year), Board Gender Diversity (percentage of female board members to totals members) Sale Growth (% Change in Annual Sale), financial development and GDP Growth (Atan et al., 2018; Giannopoulos et al., 2022; Naeem et al., 2021; Stock & Watson, 2020) .

The descriptive statistics results are shown in Table 1. Tobin's Q has a mean of 4.710. The stock may be overpriced if the Tobin's Q is more than one. Thus, we may conclude that most of the companies in our dataset are overpriced. The average return on assets (ROA) is 0.045. Generally speaking, the high ROA, the more efficiently the company makes profits. The ESG Combined Score is 43.800, the Environment Score is 42.204, the Social Score is 44.608, and the Governance Score is 44.605. Regarding the control

variables, the corresponding means for Size and Leverage are 15.500and 0.436, respectively. With the exception of a few instances where a firm has far more debt than assets, it is important to note that the leverage ratio appears to be appropriate for the majority of businesses.

Table 1 Descriptive Statistic

Variable Name	N	Mean	SD	Min	Max
Tobin's Q	10220	4.710	5.197	0.006	9.531
ROA	10220	0.045	0.063	−0.052	0.273
ROE	10220	0.035	0.058	−0.032	0.345
ESG-Performance	10220	43.800	7.479	6.450	72.430
Env-Performance	10220	42.204	10.705	0.000	90.000
Soc-Performance	10220	44.608	7.660	4.270	89.702
Gov-Performance	10220	44.605	7.672	0.000	87.769
Leverage	10220	0.436	0.192	0.092	0.827
Size	10220	15.500	1.682	9.086	19.608
Tangibility	10220	0.241	0.145	0.003	0.740
Firm Growth	10220	0.112	0.360	-0.683	1.150
Audit Quality	10220	0.091	0.286	0.000	1.000
BG-Diversity	10220	9.533	9.882	0.000	57.095
Economic-Growth	10220	5.152	2.897	-5.831	9.550
FSD	10220	0.821	0.280	0.134	1.000

3.2 Econometric Model and Methods

Building on the existing literature, we specified the following econometric models to empirically test our hypotheses

$$FV_{i,t} = \beta_0 + \beta_1 ESG_{i.t} + \beta_2 AQ_{i.t} + \beta_3 X_{i.t} + \beta_4 \text{Countries Dummies} + \beta_5 \text{Year Dummies} + €_{i,t} \quad (1)$$

$$FV_{i,t} = \beta_0 + \beta_1 ESG_{i.t} + \beta_2 AQ_{i.t} + \beta_3 (ESG_{i.t} * AQ_{i.t}) + \beta_4 X_{i.t} + \beta_5 \text{Countries Dummies} + \beta_6 \text{Year Dummies} + €_{i,t} \quad (2)$$

Where firm value, ESG performance, and audit quality are represented by$FV_{i,t}$, $ESG_{i.t}$ and$AQ_{i.t}$, respectively. Additionally, $X_{i.t}$ is the vector of control variables, which includes economic growth, company size, leverage, tangibility, firm growth, audit quality, board gender diversity, $€_{i,t}$is the error term for company i in period t, and Countries Dummies are for country fixed effect and Year Dummies are for year fixed effect.

In the research, we use a strict econometric approach to observe the effect of ESG performance on firm value and look at audit Quality as a moderating factor. We start by using a fixed effects model including both country and year fixed effects. We fix the endogeneity concern by using Two-Stage Least Squares (2SLS) and the industry average ESG performance is used as the instrumental variable. To ensure our results are not restricted to one way of measuring firm value, we test on another proxy for firm value. We also use Feasible Generalized Least Squares to take care of heteroscedasticity and autocorrelation. Since FGLS is more precise and predictable than OLS, our results can be trusted more. Employing these methods ensures that Firm Value is well and accurately assessed in terms of ESG performance. All the pre-estimation tests, including correlations, VIF and unit roots, are contained in Table A1-A3 in the appendix A. All of this supports our choice of model and approaches.

4. Empirical Results

4.1Baseline Result

The results of ordinary least squares (OLS) regression with year and country fixed effects are shown in Table 2. The findings imply that a firm's value is positively impacted by the ESG score and all of its components in a statistically meaningful way. The study's findings support the theories that ESG practices and corporate value are positively

correlated. The Resource-Based View (RBV), which maintains that good ESG performance improves reputation and reduces risks, hence increasing company value, is in line with this. Similarly, Stakeholder Theory supports these findings by asserting that addressing stakeholder concerns through effective ESG practices improves reputation and attract investment, leading to higher firm value. Moreover, the findings also showed the strong and positive link between the social pillar and the firm value. Thus, the companies involved in social activities would have more market value than other companies in the capital market and it would also attract more potential investors who respond to these firms positively. The outcomes, on the other hand, also revealed the strong and positive link between the governance pillar and firm Value. Thus, the firms that are well-governed would be liked by the market. These firms have more market bids and superior financial performance in the capital market; hence, they can attract more investors.

Table-2: Ordinary Least Squares (OLS) Regression Result

Variable Name	Firm Value	Firm Value	Firm Value	Firm Value
ESG-Performance	0.013***			
	(3.72)			
Env-Performance		0.012***		
		(3.73)		
Soc-Performance			0.014***	
			(3.80)	
Gov-Performance				0.012***
				(3.76)
Leverage	0.33***	0.329***	0.328***	0.334***
	(3.84)	(3.83)	((3.84)	(3.84)
Size	1.487***	1.481***	1.484***	1.484***
	(4.05)	(4.05)	(4.05)	(4.05)
Age	0.004**	0.009**	0.002**	0.002**
	(2.31)	(2.33)	(2.34)	(2.50)
Tangibility	1.273***	1.272***	1.277***	1.283***
	(3.77)	(3.71)	(3.77)	(3.70)
Change in sales	0.243	0.269	0.255	0.254
	(0.25)	(0.25)	(0.25)	(0.25)
Audit Quality	0.371**	0.378**	0.336**	0.418**
	(2.22)	(2.21)	(2.27)	(2.20)
BG-Diversity	0.011*	0.012**	0.011*	0.009*
	(1.72)	(2.01)	(1.78)	(1.76)
Economic-Growth	0.283***	0.286***	0.294***	0.274***
	(4.37)	(4.31)	(4.33)	(4.03)
FSD	1.843***	1.716***	1.991***	1.808***
	(4.21)	(4.20)	(4.23)	(4.27)
Country fixed effect	Yes	Yes	Yes	Yes
Year fixed effect	Yes	Yes	Yes	Yes
Constant	11.158***	11.718***	11.336***	11.460***
	(4.54)	(4.59)	(4.91)	(4.93)
Observations	5736	5736	5736	5736
F-stat	57.867	57.875	57.704	57.521
Adj R^2	0.346	0.347	0.348	0.347

*Parentheses indicate t-statistics. Significance level *p<0.10, **p<0.05, and ***p<0.01.*

4.2 Two Stages Least Square Estimation

Table-3A presents the results of instrument testing for ESG performance and its subcomponents—environmental, social, and governance performance—using industry means as instruments respectively. The **Anderson Canonical Correlation LM statistic** is used to test for under-identification, confirming whether the instruments are sufficiently correlated with the endogenous variables. The results show high LM statistic values for ESG performance (166.883), environmental performance (673.500), social performance (343.607), and governance performance (339.818), all with p-values of 0.000, indicating statistical significance at the 1% level. These findings validate the relevance of the instruments, ruling out under-identification concerns. The Cragg-Donald Wald F statistic, which tests for weak instruments, further supports the strength of the instruments. The F-statistics are high across all models—190.150 for ESG performance, 140.380 for environmental performance, 130.170 for social performance, and 120.132 for governance performance—far exceeding the commonly accepted threshold of 10. These results confirm that the instruments are not only relevant but also robust predictors of the respective ESG measures. In summary, the instrument testing results demonstrate that the industry means for ESG performance and its subcomponents are valid and strong instruments. The high LM and F statistics, coupled with significant p-values, ensure the reliability of the 2SLS regression results, providing a robust foundation for examining the relationship between ESG performance and stock liquidity.

Table- 3A: Instrument Testing

PanelA: Under identification test				
	(1) ESG performance	(2) Env-performance	(3) Soc-performance	(4) Gov-performance
Anderson canon. corr. LM statistic	166.883	673.500	343.607	339.818
P-Value	0.000	0.000	0.000	0.000
Panel B: Weak instrument test				
Cragg-Donald Wald F	190.150	140.380	130.170	120.132

Table-3B presents the results of two stage least square. The results confirm that ESG performance significantly enhances firm value. These results underscore the strategic importance of ESG engagement in driving long-term value creation.

Table-3B: Two Stages Least Square

Variable Name	Firm Value	Firm Value	Firm Value	Firm Value
ESG-Performance	0.013***			
	(3.72)			
Env-Performance		0.012***		
		(3.78)		
Soc-Performance			0.014***	
			(3.80)	
Gov-Performance				0.012***
				(3.69)
Leverage	0.33***	0.329***	0.328***	0.334***
	(3.84)	(3.83)	((3.84)	(3.40)
Size	1.487***	1.481***	1.484***	1.484***
	(4.05)	(4.52)	(4.56)	(4.04)
Age	0.004**	0.009**	0.002**	0.002**
	(2.32)	(2.23)	(2.41)	(2.43)

Tangibility	1.273***	1.272***	1.277***	1.283***
	(3.75)	(3.77)	(3.77)	(3.70)
Change in sales	0.243	0.269	0.255	0.254
	(0.25)	(0.58)	(0.28)	(0.27)
Audit Quality	0.371**	0.378**	0.336*	0.418*
	(2.212)	(2.211)	(1.78)	(1.70)
BG-Diversity	0.011*	0.012**	0.011*	0.009*
	(1.86)	(2.16)	(1.86)	(1.66)
Economic-Growth	0.283***	0.286***	0.294***	0.274***
	(4.03)	(4.31)	(4.33)	(4.30)
FSD	1.843***	1.716***	1.991***	1.808***
	(4.21)	(4.00)	(4.03)	(4.27)
Fixed effects	Yes	Yes	Yes	Yes
Constant	11.158***	11.718***	11.336***	11.460***
	(4.59)	(4.58)	(4.91)	(4.53)
Observations	5736	5736	5736	5736
F-stat	57.867	57.875	57.704	57.521
Adj R^2	0.346	0.347	0.348	0.347

*Parentheses indicate t-statistics. Significance level *p<0.10, **p<0.05, and ***p<0.01.*

4.3 Mechanism Explorations

4.3.1 ESG performance, Financial Constraints and Corporate value

Research indicates that strong ESG performance can bolster firm value by enhancing reputation and operational efficiency (Clark et al., 2015), though the magnitude of these effects may vary across industries and specific ESG components (Fatemi et al., 2015). Financial constraints, characterized as limitations on accessing external capital or encountering costly financing options (Almeida et al., 2004), potentially mediate this relationship. It has been observed that firms with higher ESG scores typically enjoy better access to capital, which could alleviate these constraints and subsequently enhance firm value (Cheng et al., 2014).

Studies have proved that ESG outcomes affect the value of a company through various ways such as risk management, stakeholder engagement, and competitive advantage. In line with the Stakeholder Theory, it is said that the firms with a better ESG performance have a better way of dealing with the stakeholders, thus, the stakeholder's trust and cooperation are increased, as a result of which, the firm performance and value are improved (Freeman & Phillips, 2002) . Besides, as the Resource-Based View (RBV) suggests, ESG practices can be regarded as valuable, rare, and inimitable resources that give the firm competitive advantage and, therefore, higher firm value (Barney, 1991). Financial constraints are the mediators in this relationship and they determine the degree to which a company can take full advantage of its ESG initiatives. For example, the companies that have the best ESG performance are the ones that often have the lower cost of capital because lenders and investors see them as less risky (Dhaliwal et al., 2011). Their ESG performance and business value are enhanced as a result of the reduced financial friction, which enables them to invest more in sustainable activities.

In order to quantify financial limitations, this study uses the Kaplan-Zingales (KZ) index as an indicator variable to investigate experimentally the mechanism via which ESG performance affects corporate value. The KZ index is based on renowned academics' in-depth studies of financial restrictions (Baker et al., 2003; Chen et al., 2007; Kaplan & Zingales, 1997; Lamont et al., 2001). To lessen the impact of extreme values, it is built for each firm-year as a linear combination of many financial measures, with components winsorized at the first and 99th percentiles.

We construct the KZ index for each firm-year as the linear combination:

$$KZ = -1.002\frac{\text{CF}}{\text{TA}} - 39.368\frac{DIV}{TA} - 1.315\frac{CA}{TA} + 3.139Lev + 0.283Q$$

Where LEV is the total debt over book assets, Q is the ratio of the market-to-book value of the company's assets, CF/TA is cash flow over lagged book assets, DIV/TA is cash dividends over lagged book assets, and CA/TA is cash balances over lagged book assets. Before building the KZ index, we winsorize its components at the 1st and 99th percentiles to lessen the impact of a few extreme results. A statistically significant negative association at the 1% level indicates that ESG performance considerably improves a firm's financial state by easing financial restraints, according to estimation findings from the financial-constraint-mechanisms test, which are shown in Table 4. Furthermore, at the 1% significance level, the data show that financial limitations considerably lower business value. These findings are consistent with Stakeholder Theory and the Resource-Based View (RBV). Strong ESG practices, according to RBV, enhance resources and reputation, reducing financial limitations and increasing corporate value (Barney, 1991; Cheng et al., 2014). Stakeholder Theory supports this by highlighting that effective ESG performance aligns with stakeholder expectations, reducing financial constraints and improving firm value (Freeman, 1984; Mitchell et al., 1997).

Table-4: Financial Constraints Mechanism Analysis

Variable Name	KZ-index	KZ-index	Firm Value	Firm Value
ESG-Performance	-0.005***	-0.006***		
	(-3.59)	(-3.66)		
KZ-index			-0.055***	-0.108***
			(-3.94)	(-3.28)
Leverage	0.199***	0.209***	0.062***	0.075***
	(3.14)	(3.60)	(3.15)	(3.63)
Size	-0.079***	-0.099***	0.008	0.005
	(-3.86)	(-3.23)	(3.20)	(3.25)
Age	-0.002***	-0.001***	0.001***	0.002***
	(-3.11)	(-3.13)	(3.88)	(3.89)
Tangibility	-0.101***	-0.095***	0.010***	0.006***
	(-3.78)	(-3.29)	(3.04)	(3.00)
Change in sales	0.128	0.105	0.036	0.035
	(0.14)	(0.44)	(0.03)	(0.34)
Audit Quality	-0.062***	-0.058***	0.036***	0.037***
	(-3.14)	(-3.13)	(3.22)	(3.26)
BG diversity	0.001***	0.007***	0.002***	0.002***
	(3.13)	(3.51)	(3.75)	(3.79)
Economic-Growth	-0.002**	-0.002**	0.009***	0.014***
	(-2.16)	(-2.01)	(4.03)	(4.15)
FSD	-0.390***	-0.441***	-0.096***	-0.074***
	(-4.13)	(-4.13)	(-4.22)	(-4.05)
Fixed effects	Yes	Yes	Yes	Yes
Constant	0.349***	0.921***	0.022***	0.049***
	(4.30)	(4.52)	(4.67)	(4.06)
Observations	5736	5736	5736	5736
F-stat	31.835	26.103	23.156	33.153
Adj R^2	0.288	0.289	0.268	0.252

*Parentheses indicate t-statistics. Significance level *p<0.10, **p<0.05, and ***p<0.01.*

4.3.2 ESG Performance, Analyst Coverage and Corporate Value

The academic literature suggests significant association between high ESG (environmental, social, and governance) performance and increased analyst coverage and its effect on corporate value. Research has confirmed that firms with good ESG practices are followed by financial analysts because of the increasing needs of the investors for ethical and sustainable investment options (Ioannou & Serafeim, 2015). Hence, the company is being valued in the market with more precision .The high environmental, social and governance (ESG) performance a company has, is the key factor that analysts pay more attention to, which in turn reduces the information asymmetry and results in a higher level of firm transparency (Solomon et al., 2011). With the enhanced transparency and visibility, the firm becomes more marketable, thus the firm is valued more. To support this claim, the research done by Dhaliwal et al. (2012) shows that the companies with strong ESG performance not only attract the more analysts but also face lower capital costs and get higher stock valuations because analysts are the more careful and optimistic in their forecasts. Thus, in the end, strong ESG performance turns into a reliable market signal, which is acknowledged by the analysts who then adjust their evaluations. This change results in the market being more widely known and the investors having a better view of the company, which in turn increases corporate value (Dhaliwal et al., 2012; Ioannou & Serafeim, 2015).

How ESG affects a company's value is a complicated issue with many aspects. The primary method through which ESG performance affects corporate value is sharing good information with stakeholders, which leads to them providing positive returns. Companies use analyst coverage to share information with stakeholders, and ESG reports vary greatly in terms of the information provided, the quality, and the goals. The coverage of analysts is focused on how much information is shared. Analysts can obtain more reliable information by further examining the report due to their expertise. When analysts are positive about a company, investors and creditors feel more confident about its future.(Keloharju et al., 2012). Analyst coverage can play the role of "soft supervision" in the capital market (Liu & Du, 2024). The expertise of analysts makes it possible to more clearly identify and exclude any overstated statements in the ESG report, allowing more issues to be revealed. In short, when a company performs well in ESG, analysts take note, leading to increased confidence among stakeholders and adding indirect value to the business. We believe that Analyst coverage is a factor that helps link ESG performance with corporate value.

The results in Table-5 presents the estimation results of the analyst -mechanisms test. The results illustrate that ESG performance positively and significantly improves firm's analyst coverage. (i.e. as the reported results indicates positive significant relationship at 1%).Moreover, the findings show that firm value is significantly increased by analyst coverage at the 1% significance level. The signaling theory supports these findings by suggesting that high ESG ratings serve as a signal of firm quality to market participants, enhancing visibility and attracting more analyst attention, which ultimately contributes to improved corporate valuation.

Table-5: Analyst Coverage Mechanism Analysis

Variable Name	Analyst Coverage	Analyst Coverage	Firm Value	Firm Value
ESG-Performance	0.038***	0.040***		
	(3.26)	(3..70)		
Analyst Coverage			0.004***	0.006***
			(3.81)	(3.35)
Leverage	0.004	0.009	0.051***	0.052***
	(0.04)	(0.04)	(3.67)	(3.78)
Size	0.144**	0.182**	0.012***	0.010***
	(2.09)	(2.24)	(3.56)	(3.58)
Age	0.011*	0.015**	0.001***	0.001***

	(1.78)	(2.26)	(3.76)	(3.75)
Tangibility	0.123	0.113	0.016***	0.016***
	(0.06)	(0.69)	(3.54)	(3.67))
Change in sales	0.736	0.870	0.032	0.026
	(0.42)	(0.21)	(0.33)	(0.03)
BG-Diversity	0.028**	0.018**	0.002***	0.002***
	(2.01)	(2.13)	(3.78)	(3.46)
Economic-Growth	0.080	0.012	0.010***	0.013***
	(0.09)	(0.45)	(4.05)	(4.56)
FSD	1.74***	2.220***	0.125***	0.136***
	(4.38)	(4.42)	(4.23)	(4.02)
Fixed effects	Yes	Yes	Yes	Yes
Constant	0.742***	2.223***	0.032***	0.007***
	(4.97)	(4.78)	(4.08)	(4.61)
F-stat	25.222	31.081	29.226	22.407
Adj R^2	0.298	0.293	0.310	0.316

*Parentheses indicate t-statistics. Significance level *p<0.10, **p<0.05, and ***p<0.01.*

4.4 *The Moderating Effect of Audit Quality*

Table-6 reveals that audit quality considerably moderates the link between ESG performance and firm value. The positive coefficient of 0.021 for the interaction term ESG performance * audit quality, significant at the 5% level, suggests that ESG performance has a stronger influence on firm value in those businesses which has better audit quality.

The agency theory (Jensen & Meckling, 1976) cites auditing as a crucial monitoring tool for reducing information asymmetry, preventing opportunistic behaviour, and improving ESG performance and transparency, and our findings support this idea (Agyei-Mensah, 2018; Cho et al., 2019; Habbash & Alghamdi, 2017). According to Ado et al. (2020), because they invest a lot of money in enhancing audit quality and promoting the use of best practices, such as ESG, Big 4 auditors are viewed as more reliable (Bacha et al., 2020).

Table-6: The Moderating Effect of Audit Quality

Variable Name	Firm Value	Firm Value	Firm Value	Firm Value
ESG-Performance	0.028***			
	(3.27)			
*ESG-Performance * Audit Quality*	0.021***			
	(3.29)			
Env-Performance		0.010***		
		(3.67)		
*Env-Performance * Audit Quality*		0.004***		
		(3.68)		
Soc-Performance			0.001**	
			(2.46)	
*Soc-Performance * Audit Quality*			0.014**	
			(2.28)	
Gov-Performance				0.010**
				(2.37)
*Gov-Performance * Audit Quality*				0.009**

				(2.38)
Leverage	0.319***	0.320***	0.319***	0.324***
	(3.55)	(3.27)	(3.21)	(3.23)
Size	1.451***	1.457***	1.462***	1.463***
	(3.57)	(3.55)	(3.62)	(3.56)
Age	0.009**	0.003**	0.002**	0.001**
	(2.18)	(2.27)	(2.15)	(2.34)
Tangibility	1.295***	1.287***	1.291***	1.296***
	(3.784)	(3.782)	(3.780)	(3.779)
Change in sales	0.317	0.166	0.154	0.209
	(0.18)	(0.87)	(0.16)	(0.15)
Audit Quality	0.359**	0.369**	0.328**	0.398**
	(2.15)	(2.21)	(2.11)	(2.29)
BG-Diversity	0.014**	0.014**	0.013**	0.012*
	(2.06)	(2.14)	(2.12)	(1.71)
Economic-Growth	0.127***	0.152***	0.157***	0.141***
	(4.25)	(4.06)	(4.02)	(4.16)
FSD	2.816***	1.719***	1.250***	1.742***
	(4.17)	(4.70)	(4.13)	(4.51)
Fixed effect	Yes	Yes	Yes	Yes
Constant	11.419***	12.350***	12.671***	12.256***
	(4.51)	(4.77)	(4.20)	(4.62)
Observations	5736	5736	5736	5736
F-stat	108.451	107.688	107.527	107.535
Adj R^2	0.341	0.341	0.342	0.341

*Parentheses indicate t-statistics. Significance level *p<0.10, **p<0.05, and ***p<0.01.*

4.5 Quartile Analysis

Quartile analysis divides a dataset into four equal parts, providing insights into data distribution and variability. This technique helps identify outliers, understand spread within each quartile, and assess central tendency, facilitating detailed analysis and comparison. In our analysis of ESG performance and firm value, ESG scores are segmented into quartiles: Q1 (0-25), Q2 (26-50), Q3 (51-75), and Q4 (76-100). Results of Heterogeneity Analysis: ESG Quartile Analysis are presented in Table 7. The coefficient for Q1 is 0.019, showing a positive but non-significant impact on firm value. In Q2, the coefficient is 0.020*, indicating a significant positive effect. For Q3, the coefficient is 0.018*, reflecting a slightly significant impact. The highest quartile, Q4, has a coefficient of 0.052***, demonstrating a strong and highly significant impact at the 1% level. Overall, these results show that while even modest ESG performance positively impacts firm value, the most significant benefits are realized by firms with the highest ESG scores. This suggests that investors highly value superior ESG practices, rewarding firms that excel in their sustainability efforts.

Table-7: Quartile Analysis

Variable Name	Firm Value	Firm Value	Firm Value	Firm Value
ESG-Performance	0.019	0.020*	0.018*	0.052***
	(0.06)	(1.73)	(1.87)	(3.61)
Leverage	0.164***	0.340***	0.350***	0.370***
	(3.75)	(3.70)	(3.66)	(3.75)
Size	1.213***	1.739***	1.357***	1.627***
	(3.90)	(3.92)	(3.98)	(3.96)

Age	0.021	0.006**	0.005**	0.004**
	(0.05)	(2.22)	(2.37)	(3.57)
Tangibility	2.175***	1.363***	0.957***	1.140***
	(3.82)	(3.85)	(3.86)	(3.84)
Change in sales	0.160	1.012	0.005	0.065
	(0.47)	(0.76)	(0.40)	(0.31)
Audit Quality	0.688***	0.197***	1.013***	0.068***
	(3.12)	(3.59)	(3.90)	(3.62)
BG-Diversity	0.004	0.012	0.032***	0.006***
	(0.09)	(0.14)	(3.67)	(3.64)
Economic-Growth	0.223***	0.401***	0.178***	0.274***
	(3.90)	(3.94)	(3.56)	(3.59)
FSD	2.480***	1.856***	1.677***	1.983***
	(4.18)	(4.43)	(4.93)	(4.70)
Fixed effect	Yes	Yes	Yes	Yes
Constant	7.508***	13.285***	13.632***	9.353***
	(4.22)	(4.84)	(4.40)	(4.09)
Observations	1435	1434	1434	1433
F-stat	22.981	16.332	18.384	18.852
Adj R^2	0.427	0.339	0.371	0.331

*Parentheses indicate t-statistics. Significance level *p<0.10, **p<0.05, and ***p<0.01.*

4.6 Robustness Testing

Benchmark regression confirms that strong ESG performance significantly boosts firm value. To check the robustness of our baseline results we have used several robustness checks i.e. alternative measures (ROA and ROE) and the alternative estimator i.e., Feasible Generalized Least Squares (FGLS) estimator. Results are reported in table 8-10 respectively and show consistently positive and significant coefficients for ESG performance and its components across different measures and methods. This robustly supports the conclusion that superior ESG performance reliably enhances firm value.

Table-8: Robustness with alternative measure of DV-ROA

Variable Name	ROA	ROA	ROA	ROA
ESG-Performance	0.001***			
	(3.22)			
Env-Performance		0.008***		
		(3.77)		
Soc-Performance			0.009***	
			(3.90)	
Gov-Performance				0.002**
				(2.35)
Leverage	0.002***	0.006***	0.007***	0.025***
	(3.11)	(3.63)	(3.61)	(3.60)
Size	0.038***	0.037***	0.038***	0.036***
	(3.80)	(3.84)	(3.82)	(3.85)
Age	0.003**	0.002**	0.003**	0.004**
	(2.84)	(2.28)	(2.30)	(2.32)

Tangibility	0.090***	0.090***	0.098***	0.091***
	(3.69)	(3.54)	(3.55)	(3.60)
Change in sales	0.001	0.002	0.001	0.001
	(0.12)	(0.02)	(0.07)	(0.32)
Audit Quality	0.017**	0.017***	0.019***	0.015**
	(2.30)	(3.12)	(3.01)	(2.31)
BG-diversity	0.004**	0.005**	0.005**	0.005**
	(2.03)	(2.14)	(2.19)	(2.07)
Economic-Growth	0.007***	0.007***	0.008***	0.007***
	(4.28)	(4.31)	(4.30)	(4.02)
FSD	0.015***	0.007***	0.024***	0.013***
	(3.07)	(3.04)	(3.79)	(3.22)
Fixed effects	Yes	Yes	Yes	Yes
Constant	0.262***	0.302***	0.278***	0.296***
	(4.09)	(4.27)	(4.26)	(4.28)
Observations	5736	5736	5736	5736
F-stat	40.961	41.116	41.175	40.609
Adj R^2	0.429	0.429	0.431	0.425

*Parentheses indicate t-statistics. Significance level *p<0.10, **p<0.05, and ***p<0.01.*

Table -9: Robustness with alternative measure of DV-ROE

Variable Name	ROE	ROE	ROE	ROE
ESG-Performance	0.004***			
	(3.54)			
Env-Performance		0.002***		
		(3.83)		
Soc-Performance			0.003***	
			(3.23)	
Gov-Performance				0.009***
				(3.87)
Leverage	0.052***	0.052***	0.052***	0.052***
	(3.91)	(3.18)	(3.14)	(3.25)
Size	0.002***	0.004***	0.001***	0.006***
	(3.01)	(3.53)	(3.55)	(3.50)
Age	0.006***	0.006***	0.006***	0.001***
	(3.65)	(3.63)	(3.64)	(3.46)
Tangibility	0.012***	0.014***	0.014***	0.016***
	(3.77)	(3.73)	(3.54)	(3.50)
Change in sales	0.029	0.025	0.027	0.028
	(0.07)	(0.27)	(0.27)	(0.17)
Audit Quality	0.039**	0.043**	0.034**	0.048**
	(2.19)	(2.21)	(2.94)	(2.20)
BG-Diversity	0.006***	0.001***	0.001***	0.001**
	(3.66)	(3.69)	(3.64)	(2.36)
Economic-Growth	0.013***	0.010***	0.012***	0.007***
	(4.02)	(4.27)	(4.21)	(4.04)

FSD	0.114***	0.139***	0.086***	0.123***
	(4.34)	(4.35)	(4.07)	(4.32)
Fixed effects	Yes	Yes	Yes	Yes
Constant	0.093**	0.071**	0.007***	0.049***
	(2.34)	(2.40)	(3.62)	(3.06)
Observations	5736	5736	5736	5736
F-stat	13.097	11.968	12.871	11.360
Adj R^2	0.234	0.219	0.231	0.212

*Parentheses indicate t-statistics. Significance level *p<0.10, **p<0.05, and ***p<0.01.*

Table-10: Robustness with alternative estimator FGLS

Variable Name	Firm Value	Firm Value	Firm Value	Firm Value
ESG-Performance	0.013***			
	(3.13)			
Env-Performance		0.012***		
		(3.80)		
Soc-Performance			0.014***	
			(3.52)	
Gov-Performance				0.012***
				(3.43)
Leverage	0.330***	0.329***	0.334***	0.328***
	(3.94)	(3.42)	(3.45)	(3.40)
Size	1.487***	1.481***	1.484***	1.484***
	(3.49)	(3.95)	(3.48)	(3.47)
Age	0.004**	0.009**	0.002**	0.000**
	(3.03)	(3.34)	(3.05)	(3.37)
Tangibility	1.273***	1.272***	1.283***	1.277***
	(3.54)	(3.95)	(3.56)	(3.50)
Change in sales	0.243	0.269	0.254	0.255
	(0.27)	(0.77)	(0.24)	(0.55)
Audit Quality	0.371**	0.378**	0.418*	0.336**
	(2.48)	(2.47)	(2.41)	(2.45)
BG-Diversity	0.011**	0.012**	0.009**	0.011**
	(2.27)	(2.25)	(2.26)	(2.29)
Economic-Growth	0.283***	0.286***	0.274***	0.294***
	(3.84)	(3.36)	(3.32)	(3.38)
FSD	1.843***	1.716***	1.808***	1.991***
	(4.55)	(4.59)	(4.56)	(4.58)
Fixed effects	Yes	Yes	Yes	Yes
Constant	11.158***	11.718***	11.460***	11.336***
	(4.65)	(4.60)	(4.62)	(4.63)
Observations	5736	5736	5736	5736
F-stat	13.097	11.968	12.871	11.360
Adj R^2	0.234	0.219	0.231	0.212

*Parentheses indicate t-statistics. Significance level *p<0.10, **p<0.05, and ***p<0.01.*

5. Conclusion

This study uses a dataset of 475 non-financial public limited companies from 2012 to 2022 to offer new insights into how Environmental, Social, and Governance (ESG) performance impacts business value in growing Asian markets. The findings support our hypothesis that firm value and ESG performance are positively correlated. According to our findings, there are two channels through which ESG performance increases firm value: improved analyst coverage and less financial constraints. Enhanced analyst coverage, by reducing information asymmetry, elevates a firm's visibility and credibility, thereby increasing its market value. Additionally, strong ESG practices improve a firm's reputation and facilitate easier access to capital, further mitigating financial constraints and boosting firm value. Additionally, the analysis reveals that the association between firm value and ESG performance is strongly moderated by audit quality.

Firms with batter audit quality experience a greater positive impact from strong ESG performance due to better capital access and enhanced investor recognition. Robustness checks confirm our results, and quartile analysis shows a stronger ESG-firm value relationship in higher ESG engagement quartiles.

Based on these findings, we recommend that regulators and market participants should enhance analyst coverage through improved ESG disclosure requirements and transparency initiatives. Policymakers should focus on advancing financial development to improve market efficiency and resource allocation. The impact of ESG performance on firm value might be further amplified by offering incentives to companies that include ESG considerations into their fundamental strategy.

The study has a number of limitations. First off, only non-financial public limited companies are included in the dataset, which could not accurately reflect the range of businesses present in these marketplaces. Due to their distinct financial structures and regulatory frameworks, financial firms may show a variety of patterns in the link between firm value and ESG performance. The link between ESG performance and corporate value may be influenced by variables that are not entirely accounted for, such as macroeconomic variables or industry-specific traits. In order to overcome these constraints, future studies might examine a wider variety of companies, take longer time horizons into account, and look at other factors that could affect the link between ESG and Firm value.

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