ESG and Firm Value: Unlocking the Power of Internal Control

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ABSTRACT

As environmental, social, and governance (ESG) performance increasingly becomes a core component of corporate and investment strategies, its influence on sustainable development and firm value has garnered extensive academic and practical interest. This paper investigates how ESG performance affects firm value among Chinese listed companies, with a focus on the moderating role of internal control mechanisms. Based on a panel dataset comprising 16,810 firm-year observations from 1,681 listed companies between 2013 and 2022, the empirical analysis confirms a notable positive correlation between ESG performance and firm value. In particular, social and governance factors exhibit positive effects, while environmental performance demonstrates a significant negative correlation. Moreover, enterprises with well-established internal control systems can amplify the value-enhancing impact of ESG initiatives, underlining the critical role of governance structures in fostering sustainable corporate outcomes. These results offer practical implications for business leaders and regulatory bodies seeking to integrate ESG considerations into long-term value creation strategies within China's dynamic market environment.

Keywords
ESG performance, firm value, sustainability, internal control, principal-agent theory

Introduction

Academic interest in evaluating firm value through the integration of ESG dimensions has grown significantly in recent research (Tang et al., 2024). Once considered a specialized investment filter, ESG has now become a central pillar influencing business strategy, risk oversight, and sustained profitability. As a holistic investment methodology, it integrates sustainability-related concerns across ecological, societal, and managerial domains into corporate strategic planning, thereby expanding principles of responsible finance and strengthening its presence across international financial systems (Ahmed & Khalaf, 2025). ESG, reflecting sustainability-oriented principles, facilitates the adoption of environmentally conscious actions, socially responsible behavior, and robust administrative practices within firms' management and planning systems. This shift reflects growing investor expectations, regulatory pressures, and market demands for corporate accountability and sustainability (Aguilera et al., 2021). In light of these developments, assessing firm value through the ESG lens has become both a relevant and essential approach for promoting enduring global economic resilience and sustainability.

Against the backdrop of economic challenges in China, the ESG framework is increasingly recognized as essential to driving firm value and ensuring business resilience (Wu et al., 2022). While ESG-focused investment funds in China remain in relatively small, their rapid growth signals a paradigm shift in corporate finance and investment strategies. Firms, as key economic actors, are increasingly integrating ESG principles to enhance long-term competitiveness, attract international investors, and align with China's broader economic goals (Ge et al., 2022). Furthermore, policy shifts have hastened the integration of ESG practices, since 2023, central state-owned enterprises in China have been mandated by the government to spearhead mandatory ESG disclosure efforts. This policy underscores the state's commitment to embedding sustainability into corporate governance, reinforcing ESG's role in shaping firm value and supporting China's transition toward high-quality economic growth.

Recent literature increasingly recognizes ESG performance as a key determinant in shaping firm valuation (DasGupta, 2022). Existing research has explored how ESG performance relates to firm value, revealing an evident association between these factors (Chouaibi et al., 2022; Singh et al., 2023). Existing research has consistently underscored the favorable effects of ESG performance on firm value, both in developed countries (Nguyen et al., 2023) and in developing regions (Duan et al., 2023). Nonetheless, current research findings remain inconclusive, as ESG performance has been reported to exert positive, negative, or negligible influence on firm value. Moreover, few studies have simultaneously evaluated the effects of ESG performance from both an overall and a sub-dimensional perspective.

Hence, this study first focuses on exploring how ESG performance and each of its three components impact firm value. Internal control, as a core element of corporate governance, plays a pivotal role in overseeing business operations, ensuring compliance with regulations, and enhancing the accuracy and efficiency of information disclosure (Huang & Chen, 2017). Firms with well-developed internal control frameworks are often more capable of effectively communicating the value of their ESG performance to stakeholders, thereby enhancing corporate image and increasing firm value (Koo & Ki, 2020) Conversely, inadequate internal control mechanisms may hinder the effective execution of ESG performance, weakening its influence on firm value (Jia & Wang, 2018). Although numerous studies have analyzed the influence of internal control on firm value (Ma et al., 2022), there is limited research investigating whether internal control influences the strength of the relationship between ESG performance and firm value. Thus, the second research focus is to investigate how the influence of ESG performance on firm value is shaped by variations in internal control in the setting of Chinese listed firms.

This study underscores the importance of ESG performance in shaping firm value among listed companies in China. Based on panel data between 2013 to 2022, it also explores the moderating influence of internal control. The study's contributions are threefold. First, it advances firm value theory by thoroughly examining the interconnections among ESG performance, internal control, and firm value, thereby facilitating more efficient corporate resource allocation and broadening the theoretical framework of firm value. Second, it extends current scholarship by clarifying the moderating role of internal control, offering conceptual insights and theoretical backing for its intermediary function. Third, the research delivers policy-oriented recommendations grounded in sustainable development, providing empirical support at the firm level for translating macro policy goals into micro-level incentives, thus helping Chinese enterprises align more effectively with sustainability principles.

Literature Review and Hypotheses Development

Assessing ESG Performance in Relation to Firm Value

From the perspective of principal-agent theory, adopting sound ESG practices improve corporate accountability and openness, mitigate information gaps and agency problems, and ultimately contribute to greater firm value (Wu et al., 2022). Furthermore, under the stakeholder theory paradigm, it is posited that enhanced ESG performance more adequately addresses the concerns of non-owner stakeholders, thereby optimizing contract efficiency and facilitating avenues for additional expansion and risk mitigation (Fatemi et al., 2018). Enhancing ESG performance helps mitigate information asymmetry and lowers the likelihood of adverse selection, while also signaling company's commitment to responsibility and offering reliable data for stakeholders' decision-making (Lambert et al., 2007). Moreover, firms with strong reputations are more likely to access capital at reduced costs, which lowers financing expenses, channels resources into productive operations, boosts operational efficiency (Gao et al., 2022), and ultimately leads to higher firm value.

In the initial phase of ESG-related studies, neoclassical economic theory suggested that ESG investments possess significant externalities and may be exploited by managers to serve their own interests. As a result, ESG performance was found to have either no significant correlation or a negative association with firm value (Suresha et al., 2022; Agarwal et al., 2023). Drawing upon a dataset encompassing 104 multinational corporations from countries such as Brazil, Chile, Duque-Grisales and Aguilera-Caracuel (2021) concluded higher ESG scores were linked to weaker financial outcomes. This may be attributed to the high upfront costs of ESG initiatives that do not yield short-term financial gains, coupled with the fact that CSR activities in Latin America are often perceived as symbolic or transactional, limiting their reputational benefits. However, a growing body of academic literature has highlighted a favorable relationship (Nguyen et al., 2022; Rastogi & Singh, 2023). According to Wong et al. (2021), securing ESG certification helps decrease financing expenses while improving Tobin's Q, indicating that engaging in ESG or social responsibility initiatives brings tangible benefits to stakeholders. Evidence from Chinese-based research also supports a positive association. Yuan and Xiong (2021) revealed firms with elevated firms with stronger ESG scores generally achieve superior performance, while media coverage acts as a mediating factor in shaping how ESG initiatives influence corporate results. Similarly, Li et al. (2021) confirmed a favorable link between overall ESG efforts and corporate performance. Drawing empirical data from China's manufacturing sector, Wu et al. (2022) reported ESG performance substantially contributes to firm value improvement. Based on these insights, this research puts forward the first hypothesis as follows:

H1a: ESG performance has a positive relationship with firm value.
H1b: Environmental performance has a positive relationship with firm value.
H1c: Social performance has a positive relationship with firm value.
H1d: Governance performance has a positive relationship with firm value.

Internal Control as Moderator

Internal control, as a fundamental component of organizational governance and operational procedures, significantly contributes to enhancing business efficiency and regulatory compliance. Drawing on principal-agent theory, internal control mechanisms align the actions of agents with the interests of principals by overseeing and guiding operational decisions. Effective internal control can facilitate the implementation of ESG performance strategies, thereby contributing to higher firm value (Gao et al., 2023). Additionally, according to stakeholder theory, relevant parties such as investors and communities hold key resources essential to firm survival, necessitating effective management of stakeholder relationships (Zhang & Su, 2023). Internal control ensures that ESG practices conform to societal and environmental expectations, thereby strengthening stakeholder trust. While prior research has extensively examined the direct influence on corporate outcomes (Ma et al., 2022), its potential role as a moderating variable remains relatively underexplored.

According to principal-agent theory, internal control forms a foundational element of corporate governance and plays a vital role in promoting the maximization of shareholder interests (Alabdullah, 2021). Internal control mechanisms help design, implement, and monitor ESG performance initiatives effectively, thereby facilitating the conversion of ESG strategies into measurable business outcomes (Koo & Ki, 2020). In an empirical study of French-listed firms, Boulhaga et al. (2023) found that deficiencies in internal control exert a clear and adverse moderating influence on the relationship between ESG performance and corporate outcomes, suggesting that strong internal control enhances the reliability of financial disclosures and reduces operational misconduct, ultimately boosting firm value. From a Chinese context, Kang (2023) demonstrated that sound internal controls can offset the adverse effects of insufficient external supervision on stock price crash risks. Additionally, Li et al. (2024) showed that internal control amplifies the positive influence of green innovation on firm value. Based on these insights, the second hypothesis of this study is developed as follows:

H2a: Internal control positively moderates the relationship between ESG performance and firm value.
H2b: Internal control positively moderates the relationship between environmental performance and firm value.
H2c: Internal control positively moderates the relationship between social performance and firm value.
H2d: Internal control positively moderates the relationship between governance performance and firm value.

Methodology

Sample and Data

This study focuses on Chinese listed firms over the ten-year period from 2013 to 2022. The period is selected to reflect the decade-long development of ESG practices following *China's 2012 Green Credit Guidelines,* which marked the initial institutionalization of ESG considerations in national policy. This timeframe captures key regulatory and market shifts in ESG development and ensures sufficient data availability and comparability across firms for robust empirical analysis. This study utilizes secondary data sources. Specifically, information related to firm value and various control variables is extracted from the China Stock Market Accounting Research database. ESG performance data is obtained from the Sino-Securities ESG Index system, while the internal control data is sourced from the DIB Internal Control Index. To ensure data consistency and comparability, firms in the finance and insurance sectors were excluded due to their distinct accounting standards, which differ from those in other industries. In addition, entries with incomplete information were removed. After these adjustments, the final dataset comprises 1,681 firms, resulting in 16,810 firm-year observations over a ten-year period.

Variable Definition

In relation to the firm value, this research adopts the methodological framework established by Duan et al. (2023) and Foster et al. (2023), using Tobin's Q as an explained variable. Relative to financial metrics, market-based indicators offer a more efficacious evaluation of a firm's valuation. Tobin's Q, embodying both theoretical relevance and practical applicability, serves as a pivotal metric for appraising the growth prospects and intrinsic value of corporations. Independent variables, ESG performance and its three dimensions are measured using data from Wu et al. (2022) and Zheng et al. (2023), along with the dataset provided by the Sino-Securities ESG Index in China, form the basis for this study. The Sino-Securities ESG evaluation framework integrates international ESG practices with localized Chinese features to establish a comprehensive rating system. It has two evaluation systems: a percentage system and a AAA-C scale. Control variables, referring to Singh et al. (2023) and Shahrun et al. (2023), and mindful of the unique insights from this study, various control variables have been integrated. Table 1 provides descriptions of the primary variables used in the study.

Table 1 Explanations of primary variables

Variable Name		Variable Symbol	Variable Description
Explained variable	Tobin's Q	*FV*	Calculated as the combined market value of equity and debt divided by the sum of their book values
Explanatory variables	ESG performance	*ESGP*	ESGP rating score from Sino-Securities Index
	Environmental performance	*EP*	EP rating score from Sino-Securities Index
	Social performance	*SP*	SP rating score from Sino-Securities Index
	Governance performance	*GP*	GP rating score from Sino-Securities Index
Moderating Variable	Internal control	*IC*	DIB Internal Control Index, create a metric indicating the effectiveness of corporate internal and risk control systems, then compute its natural logarithm.
Control Variables	Size of the Firm	*SIZE*	Calculated by taking the natural logarithm of the company's year-end total assets.
	Debt Asset Ratio	*LEV*	Expressed as a percentage of total liabilities to total assets at the end of the period.
	Revenue Growth	*GROWTH*	(Current Period Operating Income minus Prior Period Operating Income) divided by Prior Period Operating Income
	Listed Age	*AGE*	Logarithmic transformation of (current fiscal year minus the IPO year, plus one).
	Shareholding Concentration	*TOP10*	Aggregated ownership percentage held by the firm's ten largest shareholders.
	Board Size	*BOARD*	The log-transformed value of the total number of board directors

Model Design

To examine the effects of ESG performance on firm value, we developed an equation as follows:

$$\text{Tobin's } Q_{i,t} = \alpha_0 + \beta_1 \left(ESGP_{i,t}\right) + \sum\beta_2 \left(\text{CONTROL}_{i,t}\right) + \mu_i + \lambda_i + \varepsilon_{i,t} \quad (1)$$

In Equation (1), the firms-fixed effect μ_i control for cross-sectional differences in the firm characteristics. λ_i represents year fixed effects, which are used to control for systematic variations between different years. The disturbance term is denoted as $\varepsilon_{i,t}$ and is assumed to be serially uncorrelated with mean zero.

In order to explore how internal control influences the interaction between variables, we introduced equation (2) as follows:

$$\text{Tobin's } Q_{i,t} = \alpha_0 + \beta_1 \left(ESGP_{i,t}\right) + \beta_2 \left(IC_{i,t}\right) + \beta_3 \left(ESGP * IC_{i,t}\right) + \sum\beta_4 \left(\text{CONTROL}_{i,t}\right) + \mu_i + \lambda_i + \varepsilon_{i,t} \quad (2)$$

In Equation (2), this research explores how internal control acts as a moderating factor. The variable IC represents the moderating variable. The regression equation's cross-product term coefficient (β_3) is examined. A positive coefficient signifies that this mechanism acts as a facilitator, enhancing the influence of ESG performance on firm value. Conversely, a negative coefficient denotes a deterrent effect, thereby attenuating the impact of ESG performance on the valuation of the firm.

Empirical Results

Descriptive Statistics

The summary statistics of the core variables are shown in Table 2. FV has a mean of 2.0854 and a standard deviation of 2.3503, reflecting a high degree of volatility in the distribution of firm value. Concerning both the explanatory and moderating factors, the average ESGP stands at 73.2682, and the mean values of EP, SP, and GP are also favorable. The mean value of the IC is 6.2327 and there is little variation among the observations. The control variables also reveal the variability of the sample data across multiple dimensions, providing important foundational information for subsequent analyses.

Table 2 Descriptive statistics of the main variables

Variable	N	Mean	Median	Standard deviation	Minimum value	Maximum value
FV	16810	2.0854	1.5827	2.3503	0.6245	122.1895
ESGP	16810	73.2682	73.63	5.9593	43.67	92.93
EP	16810	61.156	60.92	8.1457	33.82	93.34
SP	16810	74.5487	75.05	10.8415	0.000	100
GP	16810	78.5451	80.36	8.137	19.6	97.6
IC	16810	6.2327	6.4902	1.2266	0.000	6.8483
SIZE	16810	22.6082	22.4273	1.3674	17.6413	28.6365
LEV	16810	0.4427	0.4385	0.2022	0.008	0.9944
GROWTH	16810	1.5498	0.1296	80.4492	-11.6834	9290.9106
AGE	16810	2.435	2.5649	0.651	0.000	3.4657
TOP10	16810	0.1547	0.121	0.1157	0.000	0.8099
BOARD	16810	2.1374	2.1972	0.1988	1.0986	2.8904

Findings from Multiple Regression

Table 3 displays the regression outcomes assessing how ESG performance and its three individual dimensions influence firm value. The coefficients of ESG performance and its three dimensions are significant at the 1% level in all four models. Specifically, ESG performance, social performance and governance performance are significantly and positively correlated with Tobin's Q, suggesting the possibility that investors may place greater valuation on firms that adhere to high ESG standards. This finding supports hypotheses H1a, H1c and H1d. However, environmental performance exhibits a statistically significant negative coefficient at the 1% threshold. The negative environmental performance coefficient indicates that the firm's environmental performance, which is significantly negatively correlated with Tobin's Q value, may adversely affect the firm's value, thus not supporting hypothesis H1b.

Table 3 Effects of ESG performance on firm value

Variable	FV	FV	FV	FV
	(1)	(2)	(3)	(4)
ESGP	0.008***			
	(2.84)			
EP		-0.011***		
		(-7.35)		
SP			0.006***	
			(4.40)	
GP				0.009***

				(2.87)
SIZE	-0.591***	-0.552***	-0.588***	-0.591***
	(-9.27)	(-9.34)	(-9.74)	(-9.25)
LEV	0.021	-0.024	-0.015	0.088
	(0.07)	(-0.08)	(-0.05)	(0.28)
GROWTH	0.000	0.000	0.000	0.000
	(0.16)	(0.11)	(0.17)	(0.13)
AGE	0.373***	0.356***	0.383***	0.360***
	(7.57)	(7.43)	(7.82)	(7.67)
TOP10	0.674***	0.664***	0.708***	0.628***
	-6.8	(6.7)	(7.07)	(6.47)
BOARD	-0.077	-0.075	-0.088	-0.061
	(-1.15)	(-1.12)	(-1.32)	(-0.91)
_Cons	13.963***	14.443***	14.069***	13.831***
	(13.11)	(12.80)	(12.59)	(13.33)
Year	YES	YES	YES	YES
Indcd	YES	YES	YES	YES
N	16810	16810	16810	16810
Adj R-squared	0.1583	0.1606	0.1585	0.1588

*Note: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively; t-values are in parentheses; standard errors are robust standard errors; Year represents time effects; and Indcd represents individual effects.*

Robustness Tests

Dependent Variable Adjustment

This study adopts the methodology of Luan and Wang (2023) and Maji and Lohia (2023) using market value to measure the firm's value to do the robustness test. The market value of listed Chinese companies is calculated by summing the current value of A and B shares at today's closing price, plus an adjusted value based on the ratio of total owner's equity to paid-in capital, factoring in total liabilities. The calculated market value was taken in logarithms to get the market value (MV) used in this study. The results show that ESG performance, social performance and governance performance are significantly positively correlated with market value, while environmental performance remains significantly negatively correlated with market value, which is also evidenced by columns 1 to 4 in Table 4, indicating that the regression results remain in robust.

Alternative independent variable

This study in addition adopts the method of Yu & Xiao (2022) and Zhou et al. (2022) using the replacement ESG measurement to do the robustness test. SynTao Green Finance performs evaluations by analyzing ESG-related disclosures from enterprises, benchmarking against both international and domestic norms, standards, and best practices. The scores for the ESG rating topic index, including the subitem evaluations for E, S, and G, along with the final comprehensive ESG assessment score, are derived using a bottom-up calculation and weighting within the index framework. Consequently, the ratings are classified from A+ to D. For the purposes of this study, we assign numerical values to the ESG performance and three dimensions ratings (ESGR, ER, SR and GR) from SynTao Green Finance as follows: a rating of A+ is allocated a value of 10, A receives 9, A- is given 8, B+ is allocated 7, B receives 6, B- is assigned 5, C+ receives 4, C is allocated 3, C- is assigned a value of 2 and D is assigned a value of 1. The regression results are shown in columns 5 to 8 of Table 4, and as can be seen from Table 4, the conclusions are consistent with the previous one.

Table 4 Robustness tests

Variable	**MV**	**MV**	**MV**	**MV**	**FV**	**FV**	**FV**	**FV**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
ESGP	0.002***							
	(4.20)							
EP		-0.003***						
		(-6.87)						
SP			0.003***					
			(8.84)					

GP				0.001***				
				(3.28)				
ESGR					0.039***			
					(2.76)			
ER						-0.027***		
						(-3.10)		
SR							0.037***	
							(4.48)	
GR								0.054***
								(2.97)
Constant	4.357***	4.483***	4.354***	4.373***	14.386***	14.131***	14.406***	14.309***
	(47.81)	(50.01)	(48.17)	(48.96)	(12.52)	(12.51)	(12.8)	(12.62)
Control variables	YES	YES	YES	YES	YES	YES	YES	YES
Year	YES	YES	YES	YES	YES	YES	YES	YES
Indcd	YES	YES	YES	YES	YES	YES	YES	YES
N	16810	16810	16810	16810	16810	16810	16810	16810
Adj R-squared	0.8871	0.8873	0.8875	0.8870	0.1583	0.1581	0.1586	0.1589

Endogeneity Test

To mitigate potential endogeneity issues, this paper accounts for the potential two-way causal relationship. In time-series panel data, explanatory variables may be influenced by past shocks or firm characteristics, leading to correlations with the error term. Accordingly, conducting an endogeneity test is essential to verify the credibility and stability of the regression findings. That means using a lagged one-period independent variable can help separate the expected change in the explanatory variable from the error term. Therefore, incorporating lagged explanatory variables into the model not only to alleviate the endogeneity problem due to potential bidirectional causality among variables but also improves the predictive accuracy of the model (Hou & Zhang, 2024). Therefore, this study estimated the regression of the explained variables using the lagged one period of the explanatory variables respectively. The outcomes depicted in Table 5 demonstrate that the estimated coefficients for the principal variables (L.ESG, L.EP, L.SP, L.GP) are in alignment with prior results, affirming the robustness of the regression analysis and suggesting mitigation of the endogeneity issue.

Table 5 Endogeneity test

Variable	**FV**	**FV**	**FV**	**FV**
	(1)	**(2)**	**(3)**	**(4)**
L.ESGP	0.007**			
	(2.06)			
L.EP		-0.012***		
		(-6.90)		
L.SP			0.004***	
			(2.61)	
L.GP				0.009***
				(2.79)
Constant	14.405***	14.877***	14.522***	14.203***
	(12.56)	(12.23)	(11.99)	(12.93)
Control variables	YES	YES	YES	YES
Year	YES	YES	YES	YES
Indcd	YES	YES	YES	YES
N	15129	15129	15129	15129
Adj R-squared	0.1561	0.1571	0.1562	0.1567

Moderating Effects Test

While policy incentives and regulatory frameworks play a foundational role in a market economy, the critical factor lies in activating enterprises' internal drive to enhance economic gains and sustainability through improved ESG performance, thereby achieving synergy between social and economic value (Friede et al., 2015). This intrinsic motivation largely hinges on the strength of internal control (Ma et al., 2022). Robust internal control enables firms to manage resources, risks, and strategic goals more effectively, thereby aligning operations with ESG objectives (Li et al., 2023), and ultimately enhancing long-term firm value and market credibility. Conversely, in the absence of strong internal controls, even well-conceived ESG strategies may not yield tangible improvements in firm value due to flaws in execution or oversight (Koo & Ki, 2020). Therefore, this section delves into how internal control shapes the ESG performance-firm value relationship and evaluates whether this influence is beneficial or detrimental.

To evaluate the potential moderating role of internal control, this paper incorporates the multiplicative terms between internal control and relevant independent variables within a panel data framework. According to the results in column 1 of Table 6, the estimated coefficient for the combined effect of internal control and ESG performance is significantly positive, implying that effective internal control amplifies the impact of ESG performance in driving firm value. That is, the higher the quality of a firm's internal controls, the more significant the contribution of ESG performance to firm value, Hypothesis 2a is supported. In the analysis presented in column 2, the positive significant regression coefficient for the interaction between internal control and environmental performance against firm value confirms the beneficial moderating influence of internal control quality in this relationship, supporting Hypothesis 2b. Similarly, the results in column 3 show a significant positive coefficient for the interaction between internal control and social performance, affirming internal control's positive moderation between social performance and firm value, thereby validating Hypothesis 2c. Furthermore, column 4 demonstrates that strong internal control contributes positively to how governance-related factors shape firm value, as reflected in the significant coefficient, confirming Hypothesis 2d.

Table 6 Moderating role of internal control

Variable	FV (1)	FV (2)	FV (3)	FV (4)
*ESGP*IC*	0.009*** (3.92)			
*EP*IC*		0.003* (1.86)		
*SP*IC*			0.004*** (4.7)	
*GP*IC*				0.004*** (3.28)
Constant	17.476*** (12.15)	15.413*** （12.57）	15.624*** (14.24)	15.490*** (12.35)
Control variables	YES	YES	YES	YES
Year	YES	YES	YES	YES
Indcd	YES	YES	YES	YES
N	16810	16810	16810	16810
Adj R-squared	0.1593	0.1595	0.1591	0.1595

Discussions

Grounded in both principal-agent and stakeholder theoretical frameworks, this study sheds light on the influence of ESG performance and internal control on firm value through new empirical findings. The favorable ESG performance, especially in terms of governance, indicates that company management is taking steps to reduce information asymmetry and align the interests of shareholders and management through increased transparency and accountable decision-making processes (Rastogi & Singh, 2023). Firms demonstrating strong ESG performance typically exhibit greater capability in aligning with stakeholder expectations by implementing practices such as minimizing environmental harm, ensuring workplace safety, and upholding effective governance structures. These actions not only address the specific interests of employees, customers, suppliers, local communities, and regulatory bodies, but also align with investors' emphasis on long-term corporate sustainability (Diez-Cañamero et al., 2020). The theoretical significance of this study is that it extends the research on the relationship between ESG performance and firm value, while providing empirical evidence on the role of internal controls in ESG strategies. In terms of practical implications, the findings encourage Chinese listed companies to strengthen their ESG practices, particularly in the areas of social responsibility and governance, as well as to strengthen their internal control systems to enhance corporate value and meet the increasing demands of social responsibility. Our findings support the findings of Wong et al. (2021), Nguyen et al. (2022), Cheng et al. (2024) and Ahmed & Khalaf (2025).

In practice, while ESG performance is increasingly emphasized in China, firms still encounter challenges in aligning environmental efforts with short-term financial goals. The finding that environmental performance has a negative association with firm value may reflect the high upfront costs of environmental initiatives and the delayed realization of returns, especially in industries with weak regulatory or market incentives (Bongiovanni & Fiandrino, 2024). This effect may also vary across industries, where heavily polluting sectors face higher regulatory pressure and compliance costs, making environmental investments more burdensome in the short term (Khan & Liu, 2023). In contrast, social and governance efforts tend to produce more immediate benefits in terms of stakeholder trust and operational efficiency (Anderson et al., 2024). Furthermore, the moderating effect of internal control suggests that firms with sound governance structures are better equipped to translate ESG investments into financial performance (Zhou, 2024). This highlights the importance of internal capacity-building in enabling ESG effectiveness, which is particularly relevant for firms seeking to balance long-term sustainability with financial growth.

This work delivers valuable guidance to corporate decision-makers, market participants, and policy institutions. For management, adopting structured ESG management strategies can improve market competitiveness and foster sustainable growth. Enhancing ESG disclosure and transparency, along with developing a sound performance evaluation system, can help build stronger investor and stakeholder confidence. Introducing internal control as a moderating factor expands the scope of corporate governance research, offering a new perspective on improving ESG performance through better internal oversight. Managers are advised to continuously strengthen internal control systems to support effective and transparent governance. From the investor’s standpoint, emphasis should be placed on ESG-related information to identify firms with strong sustainability potential, thereby improving portfolio allocation and mitigating investment risk. Lastly, policymakers are encouraged to enhance oversight of corporate ESG practices through more rigorous disclosure requirements, refining ESG evaluation standards suited to China’s economic context, and promoting the integration of ESG factors into industrial policies to incentivize corporate sustainable practices.

Conclusion

Based on data from Chinese publicly listed firms spanning 2013 to 2022, this empirical analysis investigates how ESG performance and internal control affect firm value. The conclusion reveals a significant positive correlation, with social and governance performance in particular showing a notable positive effect. Conversely, the analysis indicates a notable negative relationship between environmental performance and firm value. The negative correlation may be because improved environmental performance often requires firms to make larger initial investments, such as improving pollution control technologies and implementing green production processes, which may not generate immediate economic returns in the short term. This study offers fresh insights into how ESG functions across varying economic and cultural environments. Finally, this study investigates the moderating role of internal control and concludes that effective internal control strengthens favorable outcomes associated with ESG efforts. This suggests that internal control is not only an important tool for corporate risk management but also a powerful mechanism for advancing the practice of social responsibility and enhancing firm value. Nevertheless, there are some limitations. The sample selection and data sources may have affected the generalisability of the results. Additionally, the generalizability of the findings may be constrained by the dataset’s temporal and regional scope. Future research could consider data from more countries and regions to enhance the generalisability of the study. In addition, other potential mechanism effects can be explored, such as firm culture, market environment.

Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

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