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The Impact of ESG Performance on Corporate Financial Performance: Evidence from Listed Manufacturing Companies in Jiangsu Province

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Abstract

This study examines the impact of ESG performance on corporate financial outcomes using listed manufacturing firms in Jiangsu Province from 2013--2023 as the sample. Drawing on Huazheng ESG ratings and financial data, a two-way fixed effects model is employed to explore transmission mechanisms through innovation capability and debt financing costs. Heterogeneity analysis is conducted on the basis of ownership structure and regional differences within Jiangsu Province. The innovation of this study lies in its focus on provincial-level manufacturing sectors and its comprehensive examination of the overall effects across all three ESG dimensions. The results indicate that strong ESG performance enhances corporate performance, with more pronounced effects observed in nonstate-owned enterprises and in northern and central Jiangsu. These findings provide empirical support for enterprises and regulators to advance differentiated ESG practices.

Keywords

ESG performance, corporate financial performance, innovation capability, debt financing costs

1. Introduction

As global climate change and environmental pollution intensify, sustainable development has become a shared challenge for human society. Against this backdrop, the ESG framework-integrating environmental, social, and governance considerations-has increasingly emerged as a vital benchmark for assessing corporate sustainability, guiding the strategic direction of global capital and enterprises. China's economy has transitioned from a phase of high-speed growth to one of high-quality development. The new development philosophy of "innovation, coordination, green development, openness, and sharing" imposes greater demands on corporate operations. As a pillar industry of the national economy and the foundation of the real economy, the green transformation and sustainable development of manufacturing hold significant strategic importance for China's pursuit of carbon peak and carbon neutrality goals. However, for many manufacturing enterprises, ESG practices entail substantial upfront investments and costs. Whether these investments can translate into tangible financial returns has become a focal point for managers and investors, as well as a core issue requiring urgent validation in current academic research.

2. Literature Review

2.1 Relationship between ESG Practices and Corporate Performance

Academic consensus remains elusive regarding the relationship between ESG performance and corporate financial outcomes, with findings categorized into positive correlations, negative correlations, no correlations, and inverted U-shaped relationships. Chen Jing, accounting for temporal factors, reported that increased ESG investment fosters positive corporate image, enhances competitiveness, elevates corporate value and sustainability, and ultimately improves long-term performance (Chen, 2019) . Proponents of the trade-off hypothesis, led by Friedman, argue that better CSR implementation is correlated with poorer financial performance-i.e., a negative relationship between CSR and financial outcomes (Friedman, 2007). Additionally, some scholars propose an inverted U-shaped relationship between ESG performance and corporate outcomes, noting diminishing marginal returns on ESG investments: moderate spending boosts performance, but excessive investment may cause costs to exceed benefits, ultimately undermining performance (Shan et al., 2019). Some scholars contend that environmental performance is not correlated with corporate performance (Yang and Zhou, 2004) .

2.2 Mechanisms by which ESG Behavior Impacts Corporate Performance

ESG performance influences corporate financial outcomes through multiple indirect pathways. Existing research generally indicates that ESG performance primarily impacts performance through financing costs, innovation capabilities, corporate risk, and media attention. Liu Xiuli utilized a multidimensional fixed-effects panel model and reported that strong ESG performance secures government subsidies and tax incentives, further optimizing financing structures and reducing operational costs (Liu, 2024). Tao Xiaolong et al. reported that strong ESG performance attracts resource support from governments and stakeholders, reduces green innovation costs, fosters a virtuous cycle of green innovation, and ultimately enhances corporate performance (Tao et al., 2025). Wang Linlin et al. discovered that strong performance increases corporate value by mitigating business (Wang et al., 2022) risk. Yuan Yehu and Xiong Xiaohan reported that media attention moderates the impact of ESG performance on corporate performance, with companies receiving high media attention tending to exhibit superior performance levels (Yuan and Xiong, 2021).

Although many studies have explored the relationship between ESG performance and corporate value, most have focused on developed markets or overall listed company samples, with insufficient analysis targeting specific provinces or industries in China. Furthermore, previous studies predominantly analyse single pathways between ESG performance and corporate performance and lack in-depth and comprehensive mechanism analysis.

Accordingly, this paper utilizes data from listed manufacturing companies in Jiangsu Province from 2013--2023 to empirically verify the impact of ESG performance on corporate financial performance. The marginal contributions of this paper are primarily reflected in three aspects. First, from a research perspective, the study focuses on listed manufacturing companies in Jiangsu Province, provides microlevel empirical evidence on the economic consequences of ESGs in key regional industries and fills a gap in existing research. Second, in research depth, it enriches the theoretical framework of agency theory analysis by incorporating innovation capabilities and debt financing costs. Third, in terms of practical value, the findings provide theoretical foundations and differentiated insights into how manufacturing enterprises in Jiangsu Province and across China should implement ESG strategies.

3. Theoretical Analysis and Research Hypotheses

3.1 ESG Performance and Corporate Financial Performance

Strong ESG performance is a key manifestation of stakeholder theory in practice, enhancing financial performance through three pathways: environmental (E), social (S), and governance (G). Environmental (E) performance demonstrates efficient resource utilization and pollution control, positively addressing the environmental concerns of governments and communities. This not only reduces environmental compliance

risks and penalty costs but also enables green innovation to secure government subsidies and market favour, thereby meeting investor expectations for sustainability and lowering financing costs. Socially (S), fulfilling responsibilities to employees, customers, and communities directly addresses core stakeholder needs. This builds corporate reputation capital, enhances employee satisfaction and productivity, strengthens customer loyalty, and ultimately translates into stable market share and sales revenue. Corporate Governance (G): Robust governance structures-such as board independence and executive incentive mechanisms-effectively safeguard shareholder and investor rights, mitigate agency conflicts, ensure strategic soundness and execution, and lay a solid foundation for long-term value creation. On this basis, the following hypothesis is proposed:

H1: Strong ESG performance enhances corporate financial performance.

3.2 ESG Performance, Innovation Capability, and Corporate Financial Performance

Companies with outstanding ESG performance often strengthen innovation through dual internal and external pathways. On the one hand, ESG practices establish green production standards, optimize governance structures, and enhance employee cohesion, providing a favourable internal environment and institutional safeguards for innovation activities. On the other hand, superior ESG performance helps companies secure more government R&D subsidies, green credit support, and tax incentives, significantly alleviating financing constraints on innovation and reducing uncertainty in R&D activities. This ESG-driven enhancement of innovation capacity enables companies to develop differentiated products, build technological barriers, and improve production efficiency, thereby strengthening market competitiveness and achieving sustained growth in financial performance. However, this pathway may fail if ESG investments fail to effectively translate into innovation resources or if external policy support is insufficient. On this basis, the following hypothesis is proposed:

H2a: Strong ESG performance enhances corporate innovation capabilities, thereby promoting improved financial performance.

H2b: Strong ESG performance cannot enhance corporate financial performance by strengthening innovation capabilities.

3.3 ESG Performance, Debt Financing Costs, and Corporate Financial Performance

The ESG practices of listed manufacturing firms may enhance corporate performance through the intermediary channel of reducing debt financing costs. From the perspectives of signalling and risk mitigation, strong ESG performance conveys positive signals to creditors regarding standardized corporate governance and sustainable operations. This helps alleviate information asymmetry and lower perceived risk premiums, thereby enabling access to debt financing at lower interest rates. Such financing reduces corporate financial expenses and frees up cash flow for long-term value investment. However, this transmission mechanism does not always hold. If circumstances such as increased identification costs due to suspected ESG “greenwashing” arise, debt financing costs may not decrease, and the intermediary effect may fail to materialize. Therefore, this paper proposes the following hypotheses:

H3a: Strong ESG performance can enhance corporate financial performance by reducing debt financing costs;

H3b: Strong ESG performance cannot enhance corporate financial performance by lowering debt financing costs.

3.4 ESG Performance and Ownership Structure

The nature of corporate property rights is a crucial contextual factor influencing the relationship between ESG performance and performance, leading to significant differences across enterprises with varying ownership structures. Compared with nonstate-owned enterprises, state-owned enterprises bear greater policy burdens and social functions. ESG practices often exhibit a stronger compliance orientation and administrative characteristics, with relatively weaker links to economic benefits. In contrast, nonstate-owned enterprises face tighter budget constraints and market competition pressures. Their ESG behaviors are typically more strategic and efficiency oriented, placing greater emphasis on leveraging ESG investments to secure policy resources,

reputational capital, and market recognition. This enables them to more effectively translate ESG inputs into financial performance. These differing frameworks make the positive impact of ESG performance on corporate outcomes more pronounced in nonstate-owned enterprises. On this basis, the following hypotheses are proposed:

H4: The positive impact of ESG performance on corporate financial performance is significantly greater for nonstate-owned enterprises than for state-owned enterprises.

3.5 ESG performance and Regional Variations

The regional environment in which a company operates is a crucial contextual factor for its strategic decisions and value creation. Differences in regional economic development levels, policy support intensity, and market maturity lead to varying marginal utility of ESG practices. In relatively underdeveloped regions such as northern Jiangsu and central Jiangsu or areas with substantial policy support, ESG practices more effectively convey corporate quality signals and secure scarce resources, thereby significantly enhancing financial performance. Conversely, in economically advanced regions such as southern Jiangsu with intense market competition, ESG performance has become a common practice or "standard feature," potentially diminishing its differentiation effect and marginal benefits. Consequently, its positive impact on corporate performance may be insignificant. Therefore, this paper proposes the following hypothesis:

H5: The positive impact of ESG performance on corporate financial performance is significantly stronger in northern and central Jiangsu than in southern Jiangsu.

4. Research Design

4.1 Sample Selection and Data Sources

The relevant financial data in this study are sourced from the Guotai An database, whereas ESG performance indicators are derived from the Huazheng ESG evaluation data. The study focuses on A-share manufacturing enterprises in Jiangsu Province from 2013--2023. Companies classified as ST or *ST were excluded, along with those lacking complete financial or ESG data. This resulted in 800 observations from 174 Jiangsu manufacturing enterprises over the 2013–2023 period. Empirical analysis was conducted via Stata18.0.

4.2 Variable Definitions

(1) Dependent Variable: Corporate Performance (ROA)

Academic studies commonly employ metrics such as Tobin's Q, return on assets (ROA), and return on equity (ROE) to measure corporate financial performance. Among these, ROA offers a more comprehensive assessment of profitability generated from combined shareholder capital and creditor capital (Li, 2023). Therefore, this paper adopts the approach of Peng et al. (2023) by selecting return on assets (ROA) to measure corporate performance in the initial regression model and using return on equity (ROE) for robustness testing.

(2) Explanatory Variable: ESG Performance (ESG)

Given the extensive coverage and high timeliness of the Huazheng ESG ratings, which essentially encompass all Chinese A-share listed companies (Yang et al., 2023), this study adopts Huazheng ESG evaluation data to measure corporate ESG performance. Evaluated firms are assigned one of nine rating tiers, with scores ranging from 0--100, where higher scores indicate better ESG performance.

(3) Instrumental Variables: Innovation Capacity, Debt Financing Costs (Innovation, Debtc)

Corporate innovation capability can be measured in two dimensions: innovation input and innovation output. Following the methodology of Du and Wang (2021). This paper uses the natural logarithm of corporate R&D expenditure as an indicator of innovation capability. Referencing the approach of Mei Yali et al., debt financing costs are measured by the ratio of financial expenses to total liabilities (Zhang et al., 2023).

(4) Control Variables

To control for the impact of other factors on corporate financial performance, this study incorporates control variables based on existing research (Jia, 2025) and introduces the following control variables: Firm Size (Size), represented by the natural logarithm of total assets; Debt-to-Asset Ratio (Lev), reflecting capital structure and financial risk; Total Asset Turnover (Tat), measuring operational efficiency; Fixed Asset Turnover (Ftr), reflecting fixed asset utilization efficiency; and Earnings Per Share (Eps), controlling for existing profit levels.

The specific variable names, symbols, and definitions are listed in Table 1.

Table 1: Definitions of Key Variables

Variable Type	Variable	Symbol	Definition Description
Dependent Variable	Corporate Performance	ROA	Net Profit/Average Total Assets
Explanatory Variable	ESG performance	ESG	Huazheng ESG Rating Data
Moderator Variable	Innovation Capability	Innovation	Logarithm of R&D Expenditure
	Debt Financing Cost	Debtc	Financial Expenses/Total Liabilities
Control Variables	Enterprise scale	Size	Natural Logarithm of Total Assets
	Debt-to-Asset Ratio	Lev	Total Liabilities/Total Assets
	Total Asset Turnover Ratio	Tat	Operating Revenue/Average Total Assets
	Fixed Asset Turnover Ratio	Ftr	Revenue/Average Net Fixed Assets
	Earnings Per Share	EPS	(Net Profit - Preferred Stock Dividends)/Annual Weighted Average Total Shares Outstanding

4.3 Model Specifications

(1) ESG Performance and Corporate Performance Relationship Model

To test the hypothesis regarding the correlation between ESG ratings and corporate performance, the following model is established:

$$ROA_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 \text{Controls}_{i,t} + \sum Year + \sum Id + \varepsilon_{i,t} \quad (1)$$

In the above equation, the subscript i denotes the firm, t denotes the year, $\varepsilon_{i,t}$ represents the random error term, and β represents the estimated coefficients. $\sum Year$ *and* $\sum Id$ represents control over time, and individuals

(2) Path Model of the Impact of ESG performance on Corporate Performance

To explore the pathways through which innovation capability and debt financing costs affect corporate performance, this study employs a mediation effect model, setting up the following framework:

$$Mechanism_{i,t} = \alpha_0 + \alpha_1 ESG_{i,t} + \alpha_2 \text{Controls}_{i,t} + \sum Year + \sum Id + + \varepsilon_{i,t} \quad (2)$$

$$ROA_{i,t} = \alpha_3 + \alpha_4 Mechanism_{i,t} + \alpha_5 \text{Controls}_{i,t} + \sum Year + \sum Id + + \varepsilon_{i,t} \quad (3)$$

$$ROA_{i,t} = \alpha_6 + \alpha_7 ESG_{i,t} + \alpha_8 Mechanism_{i,t} + \alpha_9 \text{Controls}_{i,t} + \sum Year + \sum Id + \varepsilon_{i,t} \quad (4)$$

In the above equation, the subscript i denotes the firm, t denotes the year, $\varepsilon_{i,t}$ represents the random error term, α is the coefficient to be estimated, and Mechanism denotes the instrumental variables-innovation capability (Innovation) and debt financing cost (Debtc).

5. Empirical Results and Analysis

5.1 Descriptive Statistics

Table 2 presents descriptive statistics for the variables. The ROA ranges from a minimum of -0.70 to a maximum of 0.43, indicating significant variation in financial performance across firms. The mean ESG score is 73.84, with a standard deviation of 4.05, reaching only a B-grade level, suggesting room for improvement in ESG performance among Jiangsu manufacturing enterprises. The standard deviations for Innovation and Debtc are 0.94 and 0.01, respectively, indicating that the variation in innovation capabilities among firms is greater than the variation in debt financing costs.

Table 2: Descriptive Statistics

Variable	Sample Size	Mean	Standard Deviation	Minimum	Maximum
ROA	800	0.04	0.07	-0.70	0.43
ESG	800	73.84	4.05	51.77	85.90
Innovation	800	17.92	0.94	13.29	21.30
Debt	800	0.01	0.01	-0.01	0.08
Lev	800	0.38	0.17	0.02	0.90
Tat	800	0.59	0.24	0.12	1.68
Ftr	800	4.30	5.55	0.26	70.70
Size	800	21.49	0.75	19.91	24.22
EPS	800	0.62	1.11	-10.71	13.75

5.2 Correlation Analysis

Table 3 shows the correlation results among the variables. The Pearson correlation coefficient between ESG performance and ROA is 0.156, indicating a significant positive correlation at the 1% level, preliminarily validating H1.

Table 3: Correlation analysis

Variables	ROA	ESG	Lev	Tat	Ftr	Size	Eps
ROA	1.000						
ESG	0.156***	1.000					
Lev	-0.337***	-0.090**	1.000				
Tat	0.241***	0.015	0.067***	1.000			
Ftr	0.169***	0.030	0.091**	0.341***	1.000		
Size	-0.005	0.040	0.492***	0.078**	0.112***	1.000	
Eps	0.713***	0.083**	-0.082**	0.169***	0.251***	0.213***	1.000

*Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.*

5.3 Regression Analysis

To ensure the reliability of the regression results, this study conducted multicollinearity tests. The mean variance inflation factor (VIF) was 1.24, well below the critical value of 10, indicating that there were no severe multicollinearity issues in the model. Furthermore, the model's F test yielded a P value of 0.000, confirming that the overall model specification is statistically significant. Finally, the Hausman test (P=0.000) rejected the null hypothesis, confirming that the fixed-effects model is more appropriate for estimation.

Building upon the aforementioned correlation analysis, this study employs multiple linear regression to examine the impact of ESG performance on corporate performance. The regression results are presented in Table 4. Column (1) includes only the core explanatory variable-ESG performance. As shown, the regression coefficient for ESG performance is 0.002, which is significant at the 1% level, indicating a well-fit model and enhancing the reliability of the findings. Column (2) incorporates control variables. The results show that the regression coefficient for ESG performance is 0.001, which is significant at the 1% level. This finding indicates that even after controlling for other factors affecting corporate performance, ESG performance still significantly enhances corporate financial performance. Therefore, Hypothesis H1 is supported. Column (3) simultaneously controls for individual and time fixed effects to mitigate endogeneity issues arising from unobservable individual heterogeneity and temporal trends. Under this more rigorous model specification, the

ESG coefficient further diminishes and ceases to be significant. This finding suggests that the positive impact of ESG performance on corporate performance may involve more complex transmission mechanisms or be influenced by unobservable factors at the individual and temporal levels. Its direct short-term financial return effects remain unclear and warrant further investigation.

Table 4: Regression analysis results of ESG performance on corporate financial performance (ROA)

Variable	ROA		
	(1)	(2)	(3)
ESG	0.002*** (0.001)	0.001*** (0.000)	0.000 (0.000)
Lev		-0.092*** (0.009)	-0.059*** (0.014)
Tat		0.038*** (0.006)	0.048*** (0.000)
Ftr		-0.000 (0.000)	0.000 (0.001)
Size		-0.002 (0.002)	-0.010** (-0.405)
Eps		0.045*** (0.002)	0.050*** (0.002)
ID	Control	Control	Control
Year	Control	Control	Control
Contant	-0.120*** (0.037)	-0.003 (0.046)	0.223*** (0.087)
N	800	800	800
R2	0.024	0.615	0.665
Adj-R2	0.023	0.612	0.565

*Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.*

5.4 Robustness Test

(1) Replacing the dependent variable

To enhance the reliability of the above findings, this study replaces return on assets (ROA) with return on equity (ROE) for revalidation, with the results shown in Table 5. The regression analysis between ROE and ESG performance indicates a significant positive correlation between ESG performance and corporate performance at the 1% level, with a regression coefficient of 0.003. This confirms that ESG performance significantly promotes ROE, further validating Hypothesis H1. Column (3) further controls for individual and year fixed effects, with the ESG coefficient declining to 0.000 and no longer significant.

These results indicate that after the dependent variable is replaced with ROE, the positive impact of ESG performance on corporate performance remains supported in the base model, further validating the robustness of Hypothesis H1. Although the direct effect of ESG performance is not significant in the two-way fixed effects model, overall ESG performance still positively influences corporate financial performance.

Table 5: Replacing the dependent variable

Variable	ROA		
	(1)	(2)	(3)
ESG	0.003*** (0.001)	0.002*** (0.001)	0.000 (0.001)
Lev		-0.033** (0.016)	-0.033 (0.025)
Tat		0.068*** (0.010)	0.066*** (0.019)
Ftr		-0.001 (0.001)	-0.002* (0.001)
Size		-0.006* (0.003)	-0.022*** (0.007)
Eps		0.082*** (0.003)	0.101*** (0.003)

ID	Control	Control	Control
Year	Control	Control	Control
Contant	-0.187*** (0.063)	-0.016 (-0.080)	0.450*** (0.158)
N	800	800	800
R2	0.020	0.600	0.671
Adj-R2	0.019	0.579	0.572

*Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.*

(2) Endogeneity Test

To address potential endogeneity issues between ESG performance and corporate financial performance, this study employs one-period lagged ESG (ESG_lag1) as an instrumental variable and conducts a two-stage least squares (2SLS) estimation, as shown in Table 6. Column (2) presents the first-stage regression results. ESG_lag1 is significantly positively correlated with current-period ESG at the 1% level, indicating a strong correlation between the instrumental variable and the endogenous variable. The first-stage F statistic of 38.17 far exceeds the empirical threshold of 10, ruling out the possibility of a weak instrumental variable and confirming the validity of the instrumental variable. Column (3) displays the second-stage regression results. After controlling for endogeneity, the positive effect of ESG performance on corporate financial performance (ROA) remains statistically significant, with coefficient magnitudes consistent with the benchmark OLS regression results in Column (1). This finding indicates that the positive impact of ESG performance on corporate financial performance remains robust after accounting for potential endogeneity issues, further strengthening the reliability of the conclusions of this study.

Table 6: Endogeneity Test

Variable	(1)	(2)	(3)
	ROA	ESG	ROA
ESG	0.001**		0.001**
	(0.000)		(0.001)
ESG_lag1		0.559***	
		(0.038)	
	(0.002)	(0.201)	(0.003)
Lev	-0.100***	-1.730*	-0.096***
	(0.012)	(0.968)	(0.013)
Tat	0.036***	-0.084	0.037***
	(0.006)	(0.521)	(0.008)
Ftr	0.000	-0.015	0.000
	(0.000)	(0.021)	(0.000)
Eps	0.041***	-0.049	0.041***
	(0.004)	(0.100)	(0.006)
_cons	-0.007	14.314***	-0.062
	(0.052)	(5.441)	(0.066)
N	800	626	626
r2	0.557	0.405	0.510
F	63.41	38.17	

*Note: *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.*

5 Channel and mechanism analysis

5.5 Testing Innovation Mechanisms

The results of the innovation mechanism test are shown in Table 7. Column (1) indicates that the direct effect of ESG performance on innovation capability is not statistically significant and that innovation capability does not play a significant mediating role between ESG performance and corporate performance. Column (3) shows that, after controlling for innovation capability, ESG performance still has a significant positive effect on ROA, suggesting that ESG performance primarily enhances corporate performance through channels other than innovation capability.

Table 7: Mechanistic study: Mediating effect of innovation ability

Variable	(1) Innovation	(2) ROA	(3) ROA
ESG	0.005		0.001**
	(0.956)		(2.061)
Innovation		0.007**	0.006**
		(2.339)	(2.272)
Lev	0.905***	-0.109***	-0.106***
	(6.074)	(-9.050)	(-8.755)
Tat	0.593***	0.033***	0.032***
	(6,470)	(4.359)	(4.353)
Ftr	-0.007*	7.893E-5	7.932E-5
	(-1.748)	(0.251)	(0.253)
Size	0.806***	-0.006*	-0.006*
	(24.546)	(-1.7113)	(-1.799)
Eps	0.098***	0.040***	0.040***
	(-4.899)	(24.981)	(24.890)
Constant	-0.492 (-0.656)	-0.050 (0.936)	-0.004** (-0.060)
Adjusted R^2	0.614	0.554	0.556
N	800	800	800

*Note: ****** indicates significance at the 10%, 5%, and 1% levels, respectively.*

5.6 Testing the Debt Financing Cost Mechanism

Table 8 reports the results of the mechanism test with financing cost (COD) as the mediating variable. Column (1) shows that ESG performance has a negative but insignificant effect on financing costs. Column (3) indicates that after controlling for financing costs, ESG performance remains significantly positive for firm performance (ROA) at the 5% level, whereas financing costs are significantly negative for ROA at the 1% level. These results suggest that ESG performance primarily enhances firm performance through channels other than reducing financing costs.

Table 8: Mechanistic study: Mediating effect of financing costs

Variable	(1) COD	(2) ROA	(3) ROA
ESG	-0.943E-5		0.001**
	(-1.155)		(1.974)
Debtc		-0.769***	-0.756***
		(-4.679)	(-4.503)
Lev	0.016***	-0.090***	-0.088***
	(-6.559)	(-7.532)	(-7.302)
Tat	-0.001	0.036***	0.036***
	(-0.487)	(-4.977)	(4.957)
Ftr	0.000***	0.000	0.000
	(3.941)	(0.741)	(0.737)
Size	0.001**	0.000	0.000
	(2.102)	(0.098)	(-0.073)
Eps	-0.002***	0.039***	0.039***
	(-7.425)	(-23.971)	(-23.897)
Constant	-0.010 (-0.784)	0.037 (0.689)	-0.014 (-0.239)
Adjusted R^2	0.172	0.562	0.564

N	800	800	800

*Note: ****** indicates significance at the 10%, 5%, and 1% levels, respectively.*

6. Heterogeneity Analysis

6.1 Heterogeneity Analysis of Enterprise Ownership Structure

To examine the moderating effect of corporate ownership structure, this study conducted grouped regression analysis, dividing the sample into state-owned enterprises (SOEs) and nonstate-owned enterprises (NSOEs). The results are presented in Table 9. The findings indicate that the positive impact of ESG performance on financial performance is more pronounced for NSOEs. Specifically, the regression coefficient for ESG performance was 0.001 for both SOEs and NSOEs. However, the regression results were significant at the 10% level for the NSOE sample, whereas the ESG coefficient failed the significance test for the SOE sample. This heterogeneity may stem from the differing operational objectives and resource constraints between the two types of enterprises. ESG behaviors in SOEs may be driven more by policy and social responsibility considerations, resulting in a relatively weaker association with short-term financial performance.

Table 9: Heterogeneity regression results (ownership structure)

Variable	(1) Non-State-Owned Enterprises	(2) State-Owned Enterprises
ESG	0.001*	0.001
	(1.819)	(1.237)
Lev	-0.097**	-0.047**
	(-7.590)	(-1.856)
Tat	0.035**	0.017
	(-4.471)	(1.165)
Ftr	0.00004	0.000
	(0.140)	(0.129)
Size	-0.004	-0.001
	(-1.210)	(-0.213)
Eps	0.040**	0.081**
	(-24.686)	(9.986)
Constant	-0.052 (-0.785)	-0.057 (-0.523)
Adjusted R-squared	0.549	0.859
N	800	800

*Note: *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.*

6.2 Analysis of Regional Heterogeneity in Enterprises

Table 10 reports the results of the heterogeneity analysis based on regional differences. The study revealed that the impact of ESG performance on corporate financial performance varies significantly across different regions. Specifically, in northern and central Jiangsu, the regression coefficient for ESG performance is 0.001 and significant at the 10% level. In southern Jiangsu, although the ESG coefficient is also 0.001, it fails to pass the significance test. This heterogeneity may stem from differences in regional economic development levels, policy support intensity, and market environments. Enterprises in northern and central Jiangsu demonstrate a relatively more pronounced effect of ESG practices on performance enhancement.

Table 10: Heterogeneity Analysis (Regional Differences)

Variable	(1) Northern Jiangsu	(2) Central Jiangsu Region	(3) Southern Jiangsu Region
ESG	0.001*	0.001*	0.001
	(1.672)	(1.732)	(0.538)

Lev	-0.094**	-0.209**	-0.136**
	(-7.060)	(-5.106)	(-4.014)
Tat	0.035**	0.018	0.067**
	(4.147)	(1.198)	(2.656)
Ftr	0.000	0.002	-0.001
	(0.400)	(0.834)	(-0.689)
Size	-0.005*	0.018**	0.019**
	(-1.748)	(2.361)	(-2.831)
Eps	0.040**	0.041**	0.074**
	(23.580)	(7.063)	(9.733)
Constant	0.88 (-1.284)	-0.408** (-2.415)	-0.440** (-3.047)
Adj2 N	0.559 800	0.655 800	0.693 800

*Note: ****** indicates significance at the 10%, 5%, and 1% levels, respectively.*

7. Conclusions and Recommendations

Using data from 174 listed manufacturing companies in Jiangsu Province from 2013--2023, this study examines the impact of ESG performance on corporate financial performance and draws the following conclusions. First, ESG performance enhances corporate financial performance, confirming that sound environmental, social, and governance practices effectively translate into corporate financial value. Second, this promotional effect exhibits significant property rights heterogeneity, with particularly pronounced effects on nonstate-owned enterprises. Third, ESG practices in enterprises located in northern and central Jiangsu have stronger performance-enhancing effects than those in southern Jiangsu do.

On the basis of these findings, the following recommendations are proposed. First, nonstate-owned enterprises should deepen their ESG practices by fully integrating ESG into corporate strategy systems and building sustainable competitive advantages through enhanced environmental management, employee welfare, and governance innovation. Second, state-owned enterprises must shift their ESG focus from compliance to value orientation, optimizing resource allocation while balancing investment efficiency and economic returns. Third, local governments should develop differentiated ESG incentive policies tailored to regional development realities. For example, northern and central Jiangsu could receive greater policy support through tax incentives and green credit programs to guide enterprises in enhancing competitiveness through ESG practices. Fourth, regulatory bodies should further refine ESG disclosure standards and evaluation systems, improving data comparability and transparency to provide more accurate decision-making references for investors and enterprises.

This study has certain limitations. First, the research subjects are limited to manufacturing enterprises in Jiangsu Province, and the conclusions require further validation for nationwide application across other industries. Second, ESG data rely primarily on Huazheng Ratings without integrating results from other rating systems, which are potentially influenced by rating methodologies. Third, this paper focuses mainly on medium- to short-term financial performance, whereas the impact of ESG performance on long-term competitiveness, innovation capabilities, and risk resilience warrants further exploration.

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Conflicts of Interest

The authors declare no conflict of interest.

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