



Research on the Impact of ESG Performance on Corporate Financial Performance

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Abstract. Under increasing global ecological pressure and social equity concerns, ESG has attracted widespread attention. Using Chinese A-share firms listed on the Shanghai and Shenzhen stock exchanges from 2009 to 2024, this study examines ESG performance's impact on corporate financial performance. Results show a significant positive effect, robust to tests including variable substitution, lagging, quantile regression, PSM, and instrumental variables. Heterogeneity analysis reveals stronger effects in non-state-owned and low-debt enterprises. Mechanism tests indicate that ESG alleviates financing constraints, increases analyst attention, and reduces agency costs, thereby improving financial performance. The paper recommends that enterprises treat ESG as strategic investment, investors recognize its value-creation path, and regulators enhance ESG disclosure systems to promote sustainable development and efficient capital allocation.

Keywords: ESG performance; financial performance; financing constraints; analyst coverage; agency costs; firm heterogeneity

1 Introduction

Global climate change, ecological degradation, and social inequality have increasingly challenged traditional economic growth models that prioritize short-term profits. As key market participants, firms generate externalities affecting not only financial performance but also environmental and social welfare. In response, the ESG (Environment, Society, Governance) framework was introduced by the UN Global Compact in 2004 to systematically balance economic and non-financial goals. Multilateral initiatives such as the UN Principles for Responsible Investment have since promoted ESG integration worldwide, with institutional investors increasingly using ESG ratings for asset allocation.

China, as the world's second-largest economy, has prioritized green transformation. President Xi's 2020 "3060" carbon goals and the 20th National Congress report's emphasis on harmonious human-nature coexistence reflect this commitment. Policies such as the 2016 "Guiding Opinions on Building a Green Financial System" and the 2018 revised "Corporate Governance Code for Listed Companies" have established an

institutional framework for ESG disclosure, making ESG performance a key indicator of sustainable development capability.

However, ESG practices entail additional costs. Some firms, driven by profit maximization, may neglect responsibilities or engage in false disclosure, raising a core debate: does ESG harm financial performance or create economic value? While stakeholder and signaling theories suggest positive long-term effects, neoclassical economics argues that ESG diverts productive resources. To address this debate, this study examines the impact and mechanisms of ESG performance on financial performance using Chinese A-share listed firms from 2009 to 2024. By constructing a multiple mediation model, the research fills theoretical gaps and offers practical guidance for managers and investors in emerging markets.

2 Literature Review

2.1 Determinants of Financial Performance

Ownership Structure. Some scholars argue that ownership concentration has a two-way effect on financial performance. Studies have shown that ownership concentration has a positive U-shaped relationship with corporate performance. In contrast, other scholars hold that the shareholding ratio of the largest shareholder has an inverted U-shaped relationship with corporate performance. Additionally, some scholars argue that equity balance can improve financial performance.

Executive Compensation. Currently, many scholars believe that the relationship between executive compensation and financial performance is mainly divided into two types. One view holds that the internal pay gap between executives and ordinary employees in state-owned enterprises is significantly positively correlated with corporate performance. Another view is that the relative pay among executives is negatively correlated with corporate performance.

Capital Structure. Some studies verified a significant negative correlation between the two. Other scholars argued that a moderate increase in the debt ratio helps improve financial performance. In summary, the relationship between capital structure and corporate performance is not linear but varies across corporate life cycles, industry characteristics, and institutional backgrounds.

2.2 Economic Consequences of ESG Performance

Corporate Value. Most studies show that good ESG performance has a significant positive promoting effect on corporate financial performance. However, some scholars argue that ESG performance has a significantly negative correlation with corporate value. Li & Guo argued that ESG rating divergence may reduce corporate value through three paths: exacerbating information asymmetry, increasing corporate financing constraints, and weakening investor confidence^[4].

Financing Cost. A large body of literature indicates that good ESG performance helps reduce corporate financing costs. Lian, He, & Zhang further deepened the understanding of the mechanism by which ESG reduces debt financing costs. They confirmed that ESG performance significantly reduces debt financing costs, and this effect is primarily achieved through three paths: reducing corporate financial risk, information risk, and agency risk^[5].

Corporate Risk. Xi & Wang found that ESG information disclosure can significantly reduce stock price crash risk^[8]. Sun, Zhu, & Zhang found that good ESG performance can significantly enhance corporate reputation, with corporate transparency playing a mediating role^[6]. Reputation, as an intangible capital of the enterprise, can enhance its risk resistance and social recognition, thereby ensuring greater enterprise stability amid external shocks.

Corporate Innovation. Regarding the impact of ESG performance on corporate innovation, there are two views in academia. In terms of positive impact research, foreign scholar Bhaskaran also confirmed from theoretical and practical levels that ESG can alleviate corporate short-termism, create shared value, and thereby drive innovation investment and technological breakthroughs^[1]. In contrast, some studies have found that ESG performance has a short-term negative impact or non-linear relationship with corporate innovation. Wang, Tian, & Dang showed that short-term ESG inputs crowd out corporate cash flow and R&D resources^[7].

3 Research Hypotheses

According to stakeholder theory, the enterprise is a nexus of contracts whose survival depends on satisfying multiple stakeholders. Good ESG performance meets these demands: environmentally, it avoids penalties and attracts green consumers and partners; socially, it builds reputational capital that cushions crises; and in governance, it gains long-term trust from creditors and investors. Hence, good ESG performance secures key complementary resources from stakeholders, leading to superior financial performance.

According to signaling theory, ESG disclosure mitigates information asymmetry by serving as a credible non-financial signal. High-quality ESG performance signals strong management, long-term orientation, and effective risk control, thereby reducing investor concerns, enhancing stock liquidity and market value, and lowering creditors' perceived default risk and financing costs. Detailed, readable reports further strengthen signal credibility, enabling high-quality firms to attract patient capital. Ultimately, ESG performance reduces information asymmetry and financing costs, enhancing corporate value.

According to principal-agent theory, the separation of ownership and management creates conflicts of interest, leading managers to prioritize short-term gains over long-term value^[3]. ESG practices, particularly governance, mitigate such agency conflicts

by constraining self-interested behavior through sound governance structures and increasing disclosure transparency, which subjects managerial decisions to scrutiny and curbs earnings management or fraud. This reduces agency costs and mitigates risks such as stock price crashes driven by managerial myopia, thereby safeguarding financial soundness. Thus, good ESG performance enhances decision-making via monitoring and incentive mechanisms, providing a solid internal governance foundation for sustained financial performance.

Good ESG performance is not a simple cost expenditure but a strategic investment that can yield multiple returns. It works through three paths: optimizing external stakeholder relationships to obtain key resources, transmitting positive signals to the capital market to alleviate information asymmetry, and improving internal governance mechanisms to reduce agency costs. These three paths together ultimately have a positive impact on corporate financial performance. Based on the above rigorous logical deduction, this paper proposes the following core hypothesis:

H1: Under the condition of controlling for other factors, a firm's good ESG performance has a significant positive impact on its financial performance.

4 Research Design

4.1 Sample Selection and Data Sources

This paper selects Chinese Shanghai and Shenzhen A-share listed companies from 2009 to 2024 as the initial sample. To ensure sample representativeness and data validity, the original sample is filtered according to the following criteria: (1) excluding financial industry firms; (2) excluding ST and *ST firms; (3) excluding observations with missing main variables. This process yields 16,544 valid observations from 1,034 companies. To eliminate the influence of extreme values, all continuous variables are winsorized at the 1% and 99% quantiles. Financial performance, corporate governance, and financial indicators are sourced from the CSMAR database, while ESG rating data are from the Huazheng ESG rating system via the Wind database.

4.2 Variable Definitions

Dependent Variable. This paper selects Return on Assets (*ROA*) as the proxy variable for financial performance. *ROA* reflects the company's ability to generate profits using all its assets, comprehensively reflecting the company's operational efficiency and profitability.

Independent Variable. For corporate ESG performance, this paper uses the Huazheng ESG rating for quantification. To facilitate empirical analysis, this paper assigns ESG levels values from 1 to 9 from low to high, and uses the annual average value.

Mediating Variables.

Financing Constraints (FC). This paper uses the SA index proposed by Hadlock & Pierce to measure the degree of corporate financing constraints^[2]. Its calculation formula is:

$$SA = -0.737 \times Size + 0.043 \times Size^2 - 0.040 \times Age \tag{1}$$

where *Size* is the natural logarithm of the firm's total assets at year-end, and *Age* is the number of years from the firm's establishment to the observation year. To facilitate the interpretation of the regression results, let $FC = -SA$. That is, the larger the FC value, the smaller the degree of financing constraints faced by the enterprise.

Analyst Coverage (Analyst). This paper uses the natural logarithm of one plus the number of analysts covering the firm as the proxy variable for analyst coverage.

Management Fee Ratio (MF). The management fee ratio, measured as management expenses divided by operating income, reflects internal agency costs and management efficiency.

Control Variables. Following the practices in existing studies, this paper selects the following variables as control variables. Additionally, this paper also controls for the fixed effects of years and industries. Detailed definitions are reported in Table 1.

Table 1. Variable Definition and Explanation

Sym- bol	Variable Name	Variable Definition
<i>ESG</i>	Corporate ESG Performance	Annual average value of Huazheng ESG rating assignment
<i>ROA</i>	Financial Performance	Net Profit / Total Assets
<i>FC</i>	Financing Constraints	Measured using the SA index proposed by Hadlock and Pierce (2010), $FC = -SA$
<i>Analyst</i>	Analyst Coverage	Natural logarithm of one plus the number of analysts tracking the firm within the year
<i>MF</i>	Management Fee Ratio	Management Expenses / Operating Income $\times 100\%$
<i>SOE</i>	Property Rights Nature	Dummy variable: 1 if the ultimate controller is a state-owned entity, 0 otherwise
<i>Board</i>	Board Size	Number of board members is taken as the natural logarithm
<i>BDS</i>	Board Structure	Number of independent directors / Total number of board members
<i>Salary</i>	Executive Compensation	Natural logarithm of total compensation of the top three executives
<i>TAT</i>	Total Asset Turnover Ratio	Current period operating income / Average total assets
<i>Lev</i>	Asset-Liability Ratio	Year-end total liabilities / Year-end total assets

<i>Age</i>	Firm Age	Natural logarithm of company age
<i>Top1</i>	Ownership Concentration	Shareholding ratio of the largest shareholder
<i>Audit</i>	Audit Opinion	Dummy variable based on disclosed annual audit opinion type; 1 for standard unqualified opinion, 0 otherwise
<i>Size</i>	Firm Size	Natural logarithm of year-end total assets
<i>Gro</i>	Operating Income Growth Rate	(Current year operating income - Prior year operating income) / (Prior year operating income)
<i>Year</i>	Year	Dummy variable: 1 if the sample belongs to a specific year, 0 otherwise
<i>IND</i>	Industry	Dummy variable: 1 if the sample belongs to a specific industry, 0 otherwise

4.3 Model Specification

In order to examine the impact of an enterprise's environmental, social and governance performance on its financial performance, this paper constructs a multivariate linear regression model for empirical analysis. Following the common practices in existing research, the ordinary least squares method (OLS) is employed to estimate the model parameters. Considering the unbalanced panel structure of the sample data, this paper controls for the fixed effects of years and industries in the regression model.

Specifically, the following baseline regression model is specified:

$$ROA_{i,t} = \alpha_0 + \beta_1 ESG_{i,t} + \sum \gamma_k Control_{i,t}^k + \delta_t + \lambda_j + \varepsilon_{i,t} \quad (2)$$

where the subscripts i , t , and j represent firm, year, and industry, respectively. The dependent variable $ROA_{i,t}$ is the return on assets of firm i in year t , used to measure financial performance. The core independent variable $ESG_{i,t}$ is the Huazheng ESG rating assignment of firm i in year t , where higher values indicate better ESG performance. $Control_{i,t}^k$ represents a set of control variables. δ_t represents year fixed effects, λ_j represents industry fixed effects, and $\varepsilon_{i,t}$ is the random error term. The coefficient β_1 is the core parameter of interest in this model. If β_1 is significantly positive, it indicates that good ESG performance helps improve corporate financial performance, supporting the hypothesis.

5 Empirical Analysis and Tests

5.1 Descriptive Statistics

Table 2 reports the descriptive statistics of the main variables. As shown in the table, the financial performance of the sample enterprises shows significant differences. Some enterprises suffered losses, while others demonstrated strong asset return capabilities. The ESG performance as a whole is at a medium level, with significant differences among enterprises. No sample enterprise has reached the highest rating, indicating that Chinese listed companies still have considerable room for improvement in the areas of environment, society, and governance. In terms of control variables, the scale of

enterprises varies greatly, the overall debt-to-asset ratio is controllable, but some enterprises face high financial leverage risks. The growth rate of operating income fluctuates significantly, the size of the board of directors and the proportion of independent directors are relatively stable, the executive compensation varies with the characteristics of the enterprises in a certain gradient, the total asset turnover rate shows that the asset utilization efficiency of some enterprises is relatively low, the listing history of enterprises is generally long, and the concentration of equity is relatively high.

Table 2. Descriptive statistical results

VARIABLES	N	Mean	SD	Min	Max
<i>ROA</i>	16,544	0.0418	0.0509	-0.114	0.214
<i>ESG</i>	16,544	4.237	1.070	1	7
<i>Board</i>	16,544	2.173	0.195	1.609	2.708
<i>BDS</i>	16,544	0.373	0.0554	0.308	0.571
<i>Salary</i>	16,544	22.79	1.400	20.16	26.76
<i>TAT</i>	16,544	0.703	0.506	0.0729	3.004
<i>Lev</i>	16,544	0.476	0.192	0.0715	0.862
<i>Age</i>	16,544	3.015	0.336	1.946	3.664
<i>Top1</i>	16,544	3.463	0.475	2.166	4.317
<i>Size</i>	16,544	22.79	1.404	20.18	26.83
<i>Gro</i>	16,544	0.131	0.327	-0.497	1.901

5.2 Baseline Regression Results

Table 3 reports the baseline regression results of the impact of corporate ESG performance on financial performance. Column (1) includes independent variable *ESG* and dependent variable *ROA*, and controls for industry and year fixed effects. Column (2) further includes all control variables.

The regression results show that in the (1) column, the coefficient of *ESG* is 0.008, which is significantly higher than the 1% level. This indicates a significant positive correlation between the ESG performance of the enterprises and their financial performance, supporting the research hypothesis H1. In the (2) column, after including all control variables, the coefficient of *ESG* is 0.004, still significantly higher than the 1% level. This shows that after controlling for other factors, the promoting effect of ESG performance on the financial performance of the enterprises remains robust, further verifying hypothesis H1.

Table 3. Baseline regression results

VARIABLES	(1) <i>ROA</i>	(2) <i>ROA</i>
<i>ESG</i>	0.008*** (22.69)	0.004*** (12.14)
<i>SOE</i>		-0.012*** (-16.50)
<i>Board</i>		0.005*** (2.65)
<i>BDS</i>		-0.020*** (-2.99)

<i>Salary</i>		-0.000 (-0.08)
<i>TAT</i>		0.022*** (28.64)
<i>Lev</i>		-0.133*** (-62.59)
<i>Age</i>		0.001 (0.90)
<i>Top1</i>		0.009*** (12.07)
<i>Audit</i>		0.024*** (8.49)
<i>Size</i>		0.009*** (26.82)
<i>Gro</i>		0.029*** (28.77)
<i>Constant</i>	0.035***	-0.157*** (5.64)
Observations	16,544	16,544
R-squared	0.154	0.384
IND	YES	YES
Year	YES	YES

5.3 Endogeneity Test

Instrumental Variable. To address potential endogeneity between ESG and financial performance, this paper employs two-stage least squares (2SLS) with an instrumental variable (IV). This paper uses the average ESG performance of other companies in the same industry in the same year as the instrumental variable. Table 4 reports the test results. The Kleibergen-Paap rk LM statistic is 155.4 ($p < 0.01$), rejecting under-identification. The Kleibergen-Paap rk Wald F statistic is 156, exceeding the Stock-Yogo 10% critical value of 16.38, rejecting weak IV. The first-stage coefficient of the IV is 0.294 ($p < 0.01$), confirming its strong positive explanatory power for ESG. The second-stage coefficient of *ESG* is 0.012 ($p < 0.01$), indicating that after controlling for endogeneity, ESG still positively affects financial performance, consistent with the baseline results.

Table 4. Endogeneity test results

VARIABLES	(1) <i>ESG</i>	(2) <i>ROA</i>
<i>ESG</i>		0.012*** (3.383)
<i>ESG_IND (IV)</i>	0.294*** (12.489)	
<i>Control Variables</i>	YES	YES
<i>Constant</i>	-4.590*** (-15.592)	-0.132*** (-7.934)
Observations	16,411	16,411
IND	YES	YES
Year	YES	YES
Kleibergen-Paap rk LM	155.4	155.4

Kleibergen-Paap rk LM p-value	0	0
Kleibergen-Paap rk Wald F	156	156
Stock-Yogo 10% critical value	16.38	16.38
R-squared	0.224	0.364

5.4 Robustness Test

Lagged explanatory variable. To reduce the influence of reverse causality on the regression results, this paper lags the ESG rating by one to two periods. The regression results are shown in columns (1) to (2) of the Table 5. Column (1) indicates that the coefficient of *ESG* lagged by one period is 0.005, which is significantly positive at the 1% level. Column (2) shows that the coefficient of *ESG* lagged by two periods is 0.004, which is also significantly positive at the 1% level. This indicates that, after controlling for potential endogeneity issues, the ESG performance of the enterprises still has a significant positive impact on the financial performance lagging by one and two periods, further confirming the robustness of the research results of this paper.

Table 5. Lag explanatory variable

VARIABLES	(1) <i>ROA</i>	(2) <i>ROA</i>
<i>L.ESG</i>	0.005*** (11.38)	
<i>L2.ESG</i>		0.004*** (10.41)
<i>Control Variables</i>	YES	YES
<i>Constant</i>	-0.108*** (-7.45)	-0.070*** (-5.06)
Observations	15,510	14,476
R-squared	0.224	0.226
IND	YES	YES
Year	YES	YES

5.5 Heterogeneity Tests

Heterogeneity in property rights. To further examine the heterogeneous impact of property rights nature on the relationship between ESG performance and corporate financial performance, this paper divided the full sample into two groups, state-owned enterprises and non-state-owned enterprises, based on the nature of the ultimate controller, and conducted group regressions. The results are shown in Table 6.

From the regression results, in the state-owned enterprise sample, the regression coefficient of *ESG* is 0.003; in the non-state-owned enterprise sample, the coefficient of *ESG* is 0.005. Both are significant at the 1% level. This indicates that regardless of the nature of corporate property rights, ESG performance has a significant positive promoting effect on *ROA*. However, the promoting effect of ESG performance on financial performance is more prominent in non-state-owned enterprises.

Table 6. The results of the heterogeneity test

	(1) SOE <i>ROA</i>	(2) Non-SOE <i>ROA</i>
<i>ESG</i>	0.003*** (7.66)	0.005*** (10.30)
<i>Control Variables</i>	YES	YES
<i>Constant</i>	-0.054*** (-4.72)	-0.164*** (-9.71)
<i>IND</i>	YES	YES
<i>Year</i>	YES	YES
<i>N</i>	9714.000	6830.000
<i>R-squared</i>	0.265	0.360

6 Mediation Effect Analysis

6.1 Agency Cost

According to principal-agent theory, agency costs arising from manager-shareholder conflicts affect corporate performance. Good ESG performance improves governance and monitoring, curbing managerial self-interest and reducing agency costs, which in turn enhances resource allocation and financial performance. Thus, agency costs mediate the ESG–ROA relationship. Using the management fee ratio (MF) to proxy agency costs, Table 7 reports the stepwise regression results. ESG has a coefficient of -0.0014 (10% significant), indicating better ESG performance is associated with lower MF (i.e., lower agency costs). Column (2) includes both ESG and MF in the ROA regression: MF has a coefficient of -0.0545 (1% significant), and ESG has a coefficient of 0.0039 (1% significant) but slightly decreased from its total effect. These results confirm that agency costs partially mediate the ESG–ROA relationship.

Table 7. The mediating effect of agency cost and financing constraints

VARIABLES	Agency cost		Financing constraints	
	(1) <i>MF</i>	(2) <i>ROA</i>	(1) <i>FC</i>	(2) <i>ROA</i>
<i>ESG</i>	-0.0014* (-1.83)	0.0039*** (7.61)	0.002*** (2.744)	0.005*** (13.579)
<i>MF</i>		-0.0545*** (-4.55)		
<i>FC</i>				0.025*** (8.020)
<i>Control Variables</i>	YES	YES	YES	YES
	(-8.22)	(19.85)	(291.596)	(-13.670)
<i>Constant</i>	0.3862*** (11.10)	-0.1721*** (-7.60)	22.835*** (732.072)	-0.702*** (-9.612)
<i>N</i>	16480	16480	16156	16156
<i>R-squared</i>	0.339	0.384	0.996	0.307

6.2 Financing Constraints

According to stakeholder theory, good ESG performance enhances trust with key stakeholders, reduces information asymmetry, improves financing availability, and alleviates financing constraints. This, in turn, provides adequate financial support and promotes financial performance. Thus, financing constraints mediate the ESG–financial performance relationship. Table 7 reports the mediation test results. Column (1) shows that *ESG* has a coefficient of 0.002 (1% significant), indicating better ESG performance is associated with lower financing constraints (FC). Column (2) includes both *ESG* and *FC* in the regression on *ROA*: the coefficient of *FC* is 0.025 (1% significant), and the coefficient of *ESG* is 0.005 (1% significant) but lower than its total effect. These results indicate that financing constraints partially mediate the relationship; i.e., ESG performance improves ROA by alleviating financing constraints.

6.3 Analyst Coverage

According to signaling theory, strong ESG performance conveys positive signals of stable operations and sound governance, attracting greater analyst coverage. Increased coverage enhances information transparency and external monitoring, thereby improving financial performance. Thus, analyst coverage mediates the ESG–financial performance relationship. To test this mechanism, this paper employs a mediation model. Table 8 reports the results. Column (1) shows that *ESG* has a coefficient of 0.0501 (significant at 1%), indicating better ESG performance leads to higher analyst coverage. Column (2) adds analyst coverage to the baseline regression: the coefficient of *Analyst* is 0.0178 (1% significant), and the coefficient of *ESG* is 0.0021 (5% significant) but lower than its total effect on ROA in the baseline regression, suggesting that analyst coverage partially mediates the relationship.

Table 8. The mediating effect of analyst coverage

VARIABLES	(1) <i>Analyst</i>	(2) <i>ROA</i>
<i>ESG</i>	0.0501*** (3.3771)	0.0021** (2.3546)
<i>Analyst</i>		0.0178*** (12.5618)
<i>Control Variables</i>	YES	YES
<i>Constant</i>	-7.4075*** (-4.0350)	0.2104** (2.3907)
<i>N</i>	13938	13938
<i>R-squared</i>	0.4452	0.5326

7 Research Conclusion and Policy Implications

Using a sample of Shanghai and Shenzhen A-share listed companies from 2009 to 2024, this study examines the impact of ESG performance on corporate financial performance. The empirical results yield three main findings. First, good ESG performance

significantly improves financial performance, a conclusion that remains robust after variable substitution, PSM, and instrumental variable tests. Second, ESG performance promotes financial outcomes through three synergistic mechanisms: alleviating financing constraints, increasing analyst coverage, and reducing agency costs. Third, heterogeneity analysis reveals that the performance-enhancing effect of ESG is more pronounced in non-state-owned enterprises and low-debt firms.

These findings carry several policy implications. First, differentiated strategies should target ownership type and debt level: for non-state-owned enterprises, focus on building signal transmission channels to reduce institutional costs for financing; for high-debt firms, strengthen incentives and constraints to guide ESG improvements while controlling financial risks. Meanwhile, rating standards should be harmonized to reduce disagreements and enhance comparability. Second, financial authorities should incorporate ESG performance into corporate financing, listing, and refinancing processes, adhering to “incentive first, supplemented by constraint” by offering green credit and listing priority to strong ESG performers. External monitors including analysts, auditors, and media should jointly curb ESG greenwashing. Third, enterprises must elevate ESG from a compliance burden to strategic investment, unlocking value through financing constraint alleviation, governance optimization, and enhanced external attention. Governments should implement tiered regulation based on leverage and ownership, applying differentiated guidance to improve the economic transformation efficiency of the ESG system.

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