

The Impact of ESG Ratings on Market Outcomes of Chinese Listed Companies

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Abstract. The ESG (Environmental, Social, and Governance) evaluation framework has arose as a critical metric for assessing corporate sustainability. While opinions on the role of ESG diverge, some argue that it enhances enterprise value, whereas others caution against potential greenwashing practices, which could mislead stakeholders. Conducting data analysis on Chinese listed companies between 2010 and 2023, we employs panel regression models to assess the influence of Huazheng ESG ratings on market outcomes, as measured by ROA and ROE. Our analysis incorporates controls for fixed effects across both industry and year dimensions to ensure robust findings. The results reveal that enhancements in Huazheng ESG ratings significantly correlate with improved financial outcomes. The initial robustness check demonstrates that Bloomberg ESG and Wind ESG ratings similarly exhibit a significant and positive relationship with market outcomes. Further analysis reveals that the lagged overall ESG rating, Social rating, and Governance rating have significant positive correlations with the current period's ROA and ROE.

Keywords: ESG Ratings, Market Outcomes, Chinese Listed Companies.

1. Background

The concept of ESG traces its roots back to the 1970s, emerging as a response to the environmental and social challenges posed by rapid industrialization. In 1971, two United Methodist ministers pioneered the Pax World Funds (now known as Impax Funds, managed by Impax Asset Management). This marked the inception of the first publicly accessible mutual fund in the United States to integrate social and environmental considerations into investment decisions, setting a precedent for the evolution of ESG investing [1].

In 2004, the United Nations Environment Programme (UNEP) introduced the concept of ESG in its *Who Cares Wins* report. To foster the balanced outcomes of economy and environment, the United Nations Principles for Responsible Investment (UNPRI) established the corporate ESG evaluation framework in 2006. Subsequently, the Sustainable Accounting Standards Board (SASB) was founded in 2011, followed by the establishment of the Taskforce on Climate-Related Financial Disclosure (TCFD) in 2015. In 2016, the Global Reporting Initiative (GRI) introduced its GRI standards. These frameworks are recognized as leading global benchmarks for ESG reporting [1]. The ESG evaluation framework has arose as a critical metric for assessing corporate sustainability.

2. Literature Review

Corporate ESG practices encompass initiatives undertaken by enterprises to advance sustainable development in three critical areas: environmental, social, and governance. In the environmental domain, companies demonstrate their commitment by obtaining environmental certifications, adopting green office practices, and reducing carbon emissions. Within the social sphere, they fulfill their obligations through philanthropy, enhancing employee benefits, and supporting community development. In terms of governance, firms improve transparency and credibility by establishing clear corporate social responsibility (CSR) strategies and strengthening leadership capabilities. By integrating these three dimensions, businesses can bolster their competitiveness and achieve long-term sustainability [2].

The influence of ESG on corporate value can be analyzed through three key dimensions: ESG information disclosure, ESG ratings, and ESG investment. Existing research largely supports the notion that effective ESG information disclosure reduces information asymmetry, enhances corporate reputation, and ultimately boosts value. Similarly, as firms with strong ratings are more likely to secure resource backing from interested parties, including government subsidies, financing opportunities, and top talent. Over the long term, ESG investments contribute to risk reduction, promote sustainable growth, and strengthen enterprise value [3]. Recent studies collectively highlight that ESG ratings enhance corporate investment efficiency through mechanisms including easing financing constraints mitigating, agency costs, and curbing management's political rent-seeking behavior [4]. In the manufacturing sector specifically, ESG implementation demonstrates significant positive impacts on production efficiency, with technological innovation enhancement and financing constraint alleviation forming dual mediating pathways [5].

However emerging concerns suggest potential diversionary tactics in ESG implementation. Firms may exploit elevated ESG ratings to mask financial underperformance rooted in low financial reporting quality (FRQ). Some firms may engage in "greenwashing" by exaggerating or embellishing their ESG information to mislead consumers and investors. However, positive findings also exist. Mandatory disclosure regimes show FRQ improvement potentials [6]. Meanwhile, greenwashing has been shown to significantly negatively affect foreign direct investment decisions, including investment scale, the number of target countries or regions, and investment frequency [7].

This indicates that divergent perspectives persist regarding the role of ESG. Consequently, our research empirically examines how ESG ratings influence the market outcomes of Chinese listed companies, aiming to advance scholarly understanding and inform policy decisions.

3. Empirical Analysis

3.1. Data and Basic Characteristics

The ESG rating data in this research are derived from the Huazheng ESG Rating in the WIND database, and enterprise-level financial data are obtained from the CSMAR database. For robustness checks, Bloomberg ESG and Wind ESG rating data are also utilized. The study sample includes the A-share listed companies between 2010 and 2023, screened according to the following criteria: (1) omitting companies in the financial and insurance industries; (2) removing samples with missing key financial variables; and (3) eliminating ST and *ST companies. The final sample comprises 38,242 enterprise-year observations.

We use two representative market outcome indicators, ROA and ROE, as dependent variables. Following existing literature, we employ ten control variables to analyze companies based on ESG ratings: Size, Leverage, Asset Turnover Ratio (ATO), Cashflow, Growth, Board, Independent Director Ratio (Indep), Dual Position, Equity Balance Ratio, and Audited by Big Four Accounting Firms (Big4) [8, 9, 10].

The variables are defined and measured as outlined in Table 1, with the corresponding descriptive statistics provided in Table 2.

Table 1. Variable Definition.

Variable	Definition	Variable measurement
ROA	Return on Assets	Net Profit divided by Average Total Assets
ROE	Return on Equity	Net Profit divided by Average Shareholders' Equity
ESG_rate	Huazheng ESG Rating	This indicator consists of nine levels: C, CC, CCC, B, BB, BBB, A, AA, and AAA. The ESG ratings of listed companies are assigned values ranging from 1 to 9, with higher values indicating better performance.
Size	Company Size	Logarithm of Total Assets
Lev	Leverage Ratio	Total Liabilities divided by Total Assets
ATO	Asset Turnover Ratio	Operating Income divided by Average Total Asset
Cashflow	Cash Flow Ratio	Net Cash Flow from Operating Activities divided by Total Assets
Growth	Operating Revenue Growth Rate	Change in Operating Revenue divided by Operating Revenue at the beginning of the period
Board	Board of Directors Size	Logarithm of the Number of Board Members
Indep	Independent Director Ratio	Number of Independent Directors divided by Total Number of Board Members
Dual	Dual Position	If the roles of chairman and CEO are occupied by the same individual, the value is set to 1; otherwise, it is 0.
Balance	Equity Balance Ratio	The ratio is calculated by dividing the combined shareholding percentages of the second to fifth largest shareholders by the shareholding percentage of the largest shareholder.
Big4	Audited by Big Four Accounting Firms	If the annual audit report is conducted by any of the Big Four accounting firms, the value is assigned as 1; otherwise, it is 0.

Table 2. Descriptive Statistics.

	(1) N	(2) mean	(3) sd	(4) min	(5) p25	(6) p50	(7) p75	(8) max
ROA	38,242	0.038	0.064	-0.223	0.012	0.038	0.070	0.216
ROE	38,242	0.057	0.134	-0.643	0.025	0.069	0.118	0.351
ESG_rate	38,242	4.149	1.007	1.000	4.000	4.000	5.000	8.000
Size	38,242	22.220	1.280	19.926	21.308	22.028	22.932	26.258
Lev	38,242	0.421	0.205	0.054	0.256	0.413	0.573	0.894
ATO	38,242	0.639	0.429	0.078	0.361	0.543	0.788	2.592
Cashflow	38,242	0.047	0.068	-0.155	0.008	0.046	0.087	0.241
Growth	38,242	0.153	0.372	-0.552	-0.035	0.098	0.257	2.177
Board	38,242	2.116	0.197	1.609	1.946	2.197	2.197	2.639
Indep	38,242	37.689	5.351	33.330	33.330	36.360	42.860	57.140
Dual	38,242	0.292	0.455	0.000	0.000	0.000	1.000	1.000
Balance	38,242	0.754	0.611	0.030	0.274	0.592	1.081	2.804
Big4	35,478	0.059	0.236	0.000	0.000	0.000	0.000	1.000

3.2. Regression Model

We utilize a linear panel data model to assess the influence of ESG ratings on market outcomes, as indicated by ROA and ROE. The main regression equations are

$$ROA_{i,t} = \beta_0 + \beta_1 ESG_rate_{i,t} + \beta_2 Size_{i,t} + \beta_3 Lev_{i,t} + \beta_4 ATO_{i,t} + \beta_5 Cashflow_{i,t} + \beta_6 Growth_{i,t} + \beta_7 Board_{i,t}$$

$$+ \beta_8 Indep_{i,t} + \beta_9 Dual_{i,t} + \beta_{10} Balance_{i,t} + \beta_{11} Big4_{i,t} + INDUSTRY + YEAR + \epsilon_{i,t}$$

$$ROE_{i,t} = \beta_0 + \beta_1 ESG_rate_{i,t} + \beta_2 Size_{i,t} + \beta_3 Lev_{i,t} + \beta_4 ATO_{i,t} + \beta_5 Cashflow_{i,t} + \beta_6 Growth_{i,t} + \beta_7 Board_{i,t}$$

$$+ \beta_8 Indep_{i,t} + \beta_9 Dual_{i,t} + \beta_{10} Balance_{i,t} + \beta_{11} Big4_{i,t} + INDUSTRY + YEAR + \epsilon_{i,t}$$

In the regression equation, the subscripts ‘i’ and ‘t’ respectively indicate the individual sample and the year. To account for the influence of macroeconomic and industry factors on enterprise market performance, this research accounts for fixed effects across both industry and year dimensions.

3.3. Baseline Regression

The baseline regression outcomes, displayed in Table 3, are obtained after running the model. The findings highlight that the ESG rating coefficient is significantly and positively correlated with both ROA and ROE.

Table 3: Baseline Regression Results.

	(1)	(2)	(3)	(4)
	ROA		ROE	
ESG_rate	0.0147*** (0.001)	0.0070*** (0.000)	0.0300*** (0.001)	0.0144*** (0.001)
Size		0.0081*** (0.000)		0.0216*** (0.001)
Lev		-0.1368*** (0.003)		-0.2197*** (0.008)
ATO		0.0255*** (0.001)		0.0581*** (0.003)
Growth		0.0390*** (0.001)		0.0797*** (0.002)
Cashflow		0.2953*** (0.007)		0.4731*** (0.014)
Board		0.0005 (0.003)		0.0011 (0.006)
Indep		-0.0002** (0.000)		-0.0004** (0.000)
Dual		0.0032*** (0.001)		0.0068*** (0.002)
Balance		-0.0025*** (0.001)		-0.0060*** (0.001)
Big4		-0.0057*** (0.002)		-0.0117*** (0.004)
Constant	-0.0229*** (0.002)	-0.1391*** (0.012)	-0.0673*** (0.005)	-0.4407*** (0.026)
Observations	38,242	35,478	38,242	35,478
R-squared	0.0869	0.4168	0.0748	0.3149
Year Fix Effect	Yes	Yes	Yes	Yes
Industry Fix Effect	Yes	Yes	Yes	Yes

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

3.4. Robustness Check

ESG initiatives help enterprises establish a socially responsible image and earn public trust. However, listed companies may have incentives to exaggerate their ESG performance for self-serving purposes, potentially misleading rating agencies and resulting in inconsistent ratings. To mitigate potential misjudgments of ESG performance caused by variations in disclosure quality, the study additionally employs Bloomberg ESG and Wind ESG rating data as key explanatory variables to re-run the regression. Additionally, we control the fixed effect of PROVINCE. We can find that the conclusions remain unchanged. The results in Table 4 indicates that both Bloomberg ESG and Wind ESG ratings have a significant positive relationship with ROA and ROE.

Table 4. Robust Check1 Regression Results.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ROA				ROE			
BloombergESG	0.0006* **	0.0002 *			0.0022* **	0.0007* **		
	(0.000)	(0.000)			(0.000)	(0.000)		
WindESG			0.0131* **	0.0044* **			0.0297* **	0.0108* **
			(0.001)	(0.001)			(0.002)	(0.001)
Control Variable	No	Yes	No	Yes	No	Yes	No	Yes
Year Fix Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry Fix Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province Fix Effect	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,430	11,430	21,781	19,019	11,430	11,430	21,781	19,019
R-squared	0.0991	0.4931	0.0782	0.4531	0.0747	0.3443	0.0652	0.3639

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Moreover, the study addresses potential reverse causality concerns, as firms with stronger financial positions may have greater capacity to invest in ESG initiatives. To mitigate this endogeneity issue and control for the lagged effects of ESG on financial performance, the explanatory variables are introduced with a one-period lag. Additionally, separate analyses are conducted on the three individual components of the ESG composite score: ecological impact, societal commitment, and organizational governance, to assess their distinct impacts on financial outcomes. The outcomes displayed in Table 5 reveals that the overall ESG rating, along with the social and governance ratings from the previous period, exhibit a significant positive relationship with the current period's ROA and ROE. Although the Environment rating shows no significant relationship with financial performance. This is mainly due to the additional expenditure required by the company to improve its environmental rating.

Table 5: Robust Check2 Regression Results.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	ROA				ROE			
L.ESG_rate	0.0073** *				0.0156** *			
	(0.000)				(0.001)			
L.E_rate		0.0006				0.0013		
		(0.000)				(0.001)		
L.S_rate			0.0030** *				0.0063** *	
			(0.000)				(0.001)	
L.G_rate				0.0067** *				0.0139** *
				(0.000)				(0.001)
Control Variable	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Province FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	32,077	32,077	32,077	32,077	32,077	32,077	32,077	32,077
R-squared	0.2789	0.2677	0.2726	0.2821	0.1984	0.1869	0.1919	0.2011

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

4. Analysis

Preliminary regression results in Table 3 investigate the influence of ESG ratings on firm market outcomes, utilizing ROA and ROE as indicators, while accounting for fixed effects across both industry and time dimensions. The coefficients for ESG rating in columns (1) and (2) are 0.0147 and 0.0070, respectively, both achieving statistical significance at the 1% level. This indicates that enhancing ESG ratings significantly improves corporate financial outcomes. Specifically, a one-unit increase in ESG rating corresponds to an average 1.47% rise in ROA, providing initial empirical support for the theoretical suggestion of a positive relationship between ESG ratings and market outcomes. In columns (3) and (4), where ROE is the dependent variable, the coefficients of ESG rating are 0.0300 and 0.0144, respectively, both retaining significance at the 1% level. The results further corroborate the beneficial effect of corporate ESG ratings on financial outcomes.

Regarding the control variables, firm Size demonstrates a positive influence on both ROA and ROE, consistent with the scale effect hypothesis that larger enterprises typically achieve superior financial performance. Financial leverage (Lev) exhibits a negative coefficient, suggesting that higher leverage may elevate financial risk and adversely affect corporate profitability. Both asset turnover (ATO) and Growth show positive coefficients, reflecting the beneficial effects of operational efficiency and favorable market prospects on financial outcomes. The independent director ratio (Indep) displays a negative coefficient, implying that increased independent director representation may heighten decision-making complexity and costs, thereby negatively impacting financial performance. Conversely, the positive coefficient for CEO-Chairman duality (Dual) indicates that

this leadership structure may reduce agency costs, enhance decision-making efficiency, and consequently improve financial outcomes.

In conclusion, the results reveal that improved corporate financial performance is significantly and positively associated with higher ESG ratings. This relationship persists consistently across various robustness checks, confirming the reliability of our results.

5. Conclusion

5.1. What I have done in this paper

Over the past few years, the increasing worldwide emphasis on environmental and social sustainable development has highlighted the importance of corporate ESG (Environmental, Social, and Governance) performance. This heightened focus has garnered substantial attention from governments, the public, and various stakeholders, significantly influencing corporate operations. A critical question arises: How does corporate ESG level affect market outcomes, and what is the nature of this effect—positive or negative?

This study adds to the current discourse by examining the connection between ESG ratings and market outcomes. Utilizing data from firms listed on China's A-share market spanning the interval 2010-2023, we employ panel regression models to assess the influence of Huazheng ESG ratings on market outcomes, as measured by ROA and ROE. Our analysis incorporates controls for fixed effects across both industry and year dimensions to ensure robust findings.

To mitigate potential inaccuracies of ESG assessment resulting from disclosure quality, the model is re-estimated using Bloomberg ESG and Wind ESG rating data as primary explanatory variables.

Additionally, a one-period lag is incorporated into the explanatory variables to account for the delayed influence of ESG on market outcomes and to mitigate potential endogeneity concerns that may arise due to reverse causality. Moreover, separate regressions are conducted for the three individual components of the ESG composite score: ecological impact, societal commitment, and organizational governance, to analyze their distinct effects on financial performance.

5.2. What the conclusion is

The findings from the baseline regression analysis demonstrate that enhancements in ESG ratings significantly correlate with improved financial outcomes. The initial robustness check demonstrates that Bloomberg ESG and Wind ESG ratings similarly exhibit a significant and positive relationship with market outcomes. Further analysis reveals that the lagged overall ESG rating, Social rating, and Governance rating have significant positive correlations with the current period's ROA and ROE. While Environment rating is insignificantly related with the financial performance. This is mainly due to the additional expenditure required by the company to improve its environmental rating.

5.3. Policy implication

Given the significant positive influence of ESG ratings on market outcomes, the policy recommendations are suggested for enterprises, investors, and governments as followings:

For enterprises, ESG concepts should be incorporated into the long-term strategic planning, and ESG factors must be attached to the top-level agenda. Enterprises should take active measures to improve ESG performance in daily operation, such as adopting clean energy and green technology, and reducing carbon emissions and environmental pollution; paying attention to employee welfare, consumer rights protection, community development, etc.; improving the independence and professionalism of the board, and strengthening internal control and risk management. Enterprises should establish and improve ESG information disclosure systems in accordance with relevant regulations and standards, and enhance investors and other stakeholders' trust in enterprises. They should actively cooperate with suppliers, customers, industry associations and other stakeholders to jointly build a green supply chain, and advance long-term ecological and economic progress.

For investors, ESG rating should be taken as one of the important investment decision-making basis in order to reduce investment risk and obtain long-term stable returns. By exercising shareholder rights, they should drive continuous improvement in ESG standards. Investors can support the sustainable advancement of the capital market by actively participating in socially responsible investments.

The government should refine ESG policies, regulations, and regulatory standards for enterprises, and intensify supervision and accountability for corporate ESG behavior. The government should improve the scientific, impartiality and transparency of ratings, and establish an ESG information sharing platform to facilitate enterprise disclosure and investors to obtain ESG information. It should play an active role in shaping and coordinating global ESG frameworks, facilitating the alignment of domestic ESG norms with global benchmarks, and improve the competitiveness of Chinese enterprises in international markets.

5.4. What could be done in the future

This study utilizes data from Chinese-listed companies as its sample base, suggesting a need for further research to determine whether the findings apply to other countries, particularly developed ones. Additionally, the robustness checks reveal that the relationship of individual environmental factors with market performance is not significant, suggesting a need for further exploration of environmental factors' role in corporate market outcomes. Future studies could also explore quantifying more ESG-related non-financial metrics to facilitate better comparison and analysis, offering investors and stakeholders more intuitive decision-making tools. It also represents a promising research direction to explore the link of ESG level and enterprises' innovation, and to examine whether good ESG practice can promote investment and achievements in green technology innovation, business model innovation and other aspects. It would be very helpful to conduct international ESG research and comparison and cooperation, understand the impact of ESG development status, policy practice and cultural background on ESG in different countries and regions, and draw on advanced international experience to advance the global harmonization of ESG practices.

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