



The Influence of ESG on Firm Performance: Evidence from Listed Companies in China

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Abstract: The primary objective of this dissertation is to examine the influence of environmental, social, and governance (ESG) factors on the financial performance of a selected group of Chinese companies listed on the stock exchange. The results indicate a negative relationship between a firm's ESG performance and overall performance, suggesting that higher ESG performance is associated with worse firm performance. Furthermore, a considerable negative association exists between company performance and the environmental, social, and governance pillars. Upon further examination, the underlying cause for this outcome could be attributed to the company's allocation of resources towards environmental, social, and governance (ESG) initiatives. This investment incurs additional costs, but it is difficult for this expenditure to pay off in the short term. This situation contributes to a decline in the corporation's overall performance. Hence, corporations must prioritize long-term profitability and redirect their focus from immediate financial benefits to enduring social responsibility and sustainability commitments. Companies can incorporate environmental, social, and governance (ESG) plans into their fundamental business strategy to guarantee that ESG objectives align with their long-term goals. This practice aids in the prevention of supplementary expenses.

Keywords: ESG performance, environmental performance, social performance, governance performance, corporate performance, sustainability development

1. Introduction

1.1 Motivation and Problem Statement

In contemporary times, there has been a growing significance attributed to Corporate Social Responsibility (CSR) initiatives and the performance of organisations in terms of Environmental, Social, and Governance (ESG) factors. This heightened attention can be attributed to the widespread worldwide concerns around social inequality and climate change. ESG places significant importance on a company's environmental sustainability, social responsibility, and corporate governance performance. This includes reducing carbon emissions, enhancing energy efficiency, preserving biodiversity, fostering positive industrial relations, reinforcing regulatory compliance, and promoting greater transparency. ESG, or Environmental, Social, and Governance factors, are essential prerequisites for ensuring stability and sustainability inside a firm. They are critical indicators of a company's social consciousness and commitment to sustainability. Furthermore, this phenomenon dramatically influences a company's long-term strategic development, financing, and overall business climate.

1.2 Research Questions

Specifically, the study aims to answer the following questions:

- (1) What impact does ESG have on the financial performance of listed companies in China?
- (2) Is there a link between three Pillar of ESG and firm performance in China?

1.3 Research Objectives

This paper aims to contribute novel empirical data on the Environmental, Social, and Governance (ESG) system within the Chinese context. It does so by investigating the impact of ESG on the financial performance of publicly traded firms in China and by further explaining the interconnections between ESG and company performance. Furthermore, the findings of this research will be of significant use to corporate managers, investors, and other stakeholders, as it will shed light on various interconnected aspects of this subject matter.

2. Background

2.1 ESG practices and Regulations

ESG, an acronym for environmental, social, and governance, refers to a framework that evaluates a company or organisation's sustainability and ethical practices. According to Paolone et al. (2021), using ESG scores can be a viable method for assessing corporate social responsibility (CSR) performance. In the study conducted by Bassen and Kovács (2020), it was asserted that investors could utilize environmental, social, and governance (ESG) metrics as a means to obtain non-financial data about a firm, hence enabling the evaluation of its performance. Recently, there has been a progressive rise in the focus of shareholders and other stakeholders on the performance of Environmental, Social, and Governance (ESG) factors. This increased attention is driven by recognising that such disclosure is crucial for organisations' long-term viability and sustainable growth. Chen and Xie (2022) also have observed that organizations that demonstrate strong performance in environmental, social, and corporate governance are often favoured by investors, leading to enhanced investment returns. Hence, it is advantageous for corporations to develop prospective strategies and objectives by leveraging ESG data to foster organisational growth.

2.2 Corporate Governance Practices and Developments

The corporate governance framework is accountable for guaranteeing the company's adherence to pertinent rules. With the growing inclusion of ESG disclosures in corporate reporting requirements by regulators across different jurisdictions, it becomes imperative to integrate ESG disclosures into governance practices to guarantee organizations comply with these reporting requirements accurately and promptly. According to Madhani (2014), firms that emphasize sustainable and ethical business practices are more inclined to attract long-term investors and uphold a positive reputation for long-term wealth development. ESG disclosure systems, such as sustainability reports, can assist firms in addressing ESG concerns, hence potentially enhancing their overall financial performance. Simultaneously, corporate boards are pivotal in supervising a company's strategic and risk mitigation. Panels with varied experience are more inclined to comprehend the significance of environmental, social, and governance (ESG) factors and guide corporations in effectively incorporating them into their operational frameworks. For potential investors, there is a growing trend among institutional investors and asset managers to integrate environmental, social, and governance (ESG) criteria into their investment strategies. According to Wang, Sun, and Teo (2023), the adoption of robust corporate governance practices, such as the integration and transparent reporting of a company's environmental, social, and governance (ESG) performance metrics, as well as the formation of board committees dedicated to sustainability and risk management, can effectively signal to investors the company's commitment to addressing ESG concerns and its capacity to handle these matters appropriately. So, a comprehensive analysis of the relationship and influence between ESG disclosure and business performance can offer valuable references for managers in defining future strategic objectives for their organizations.

2.3 The State of ESG disclose in China

The emergence of the ESG concept may be traced back to the 1960s and 1970s in Europe and the United States. However, the notion of Corporate Social Responsibility (CSR) was solely established in China during the 1990s. Except for specific industries, the voluntary nature of disclosing corporate social responsibility (CSR) information by publicly traded firms in China has resulted in a limited number of corporations including social and environmental data in their reports before 2005 (Malik et al., 2023). Therefore, it can be observed that China, as a developing nation, needs to improve in establishing and implementing Environmental, Social, and Governance (ESG) practices compared to more advanced economies. Furthermore, it is worth noting that Chinese-listed firms have less emphasised ESG performance and disclosure. Consequently, there exists a need for more research in this domain, highlighting the need to investigate the impact of ESG on corporate performance within the Chinese Background.

3. Hypotheses Development

H1: ESG scores can significantly affect company performance.

H2: Environmental pillar scores in ESG can influence company performance to some extent.

H3: Social pillar scores in ESG can influence company performance to some extent.

H4: Governance pillar scores in ESG can influence company performance to some extent.

4. Data and Research Methodology

4.1 Research Paradigm

This dissertation will employ quantitative methodologies, specifically multiple regression analysis, to examine the secondary data gathered. The purpose of this analysis is to assess the hypothesis proposed in the dissertation, which explores the relationship between Environmental, Social, and Governance (ESG) factors and corporate performance.

4.2 Date Source and Sample Selection

All the secondary data in this research sample come from CSMAR and SynTao Green Finance databases. CSMAR can provide researchers with extensive, real-time financial data on Chinese-listed companies. As SynTao Green Finance was created in 2015, the earliest ESG-related data we could find in this database started in 2015. And, due to the COVID-19 impact, many listed companies in China rarely disclose ESG-related information from 2020 onwards, especially the complete data for 2021 and 2022. Therefore, to obtain complete and as new data as possible, this thesis collects data for the six years from 2015 to 2020.

In addition, after excluding firms that may be in financial distress or at risk of delisting, firms with missing data, and the financial sector, the final data sample collection results in a panel dataset consisting of 105 firms and 630 firm-level observations. The firms come from four main types of industries, including real estate, industrial, utilities, and commercial.

ESG performance scores from SynTao Green Finance range from zero to a perfect 100.

4.3 Variables and Measures

4.3.1 Dependent Variable

Firstly, the ROE indicator is a good choice for the financial dimension. As it is not affected by equity dilution, it is an essential economic indicator used to measure the level of profitability and performance of a company.

Secondly, Earnings Before Interest and Taxes (EBIT) is a critical indicator in determining a firm's profitability (Carnini Pulino et al., 2022).

Tobin's Q is a metric derived from market valuation, computed by dividing a company's market value by its replacement cost (Tobin and Brainard, 1976).

4.3.2 Independent Variable

The metric utilized in this dissertation to assess a corporation's ESG aspects is its ESG performance score. ESG scores are composite measures derived from ESG disclosure outputs, encompassing many dimensions. The influence of one dimension can potentially overshadow the impact of another dimension. The potential effects of each pillar on firm performance can vary in terms of approach and magnitude.

Therefore, in addition to the overall ESG score, three separate ESG subscores are considered in this dissertation: environmental pillar score, social pillar score and governance pillar score.

4.3.3 Control Variable

After referring to previous studies by scholars, this paper also introduces four control variables and one dummy variable in the regression model to reduce possible bias in the results during the analysis. These control variables are selected from the firm level: firm size, leverage, asset turnover, and firm age. In addition to the variables mentioned above, this paper includes year dummy variables.

4.4 Model Description

To test the hypotheses of this dissertation, a multiple regression model was used with the following basic equation:

$$FP_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \sum_{i=1}^n \beta_{i+1} control_{i,t} + \varepsilon_{i,t}$$

Where:

The meaning of $FP_{i,t}$ is the financial performance of firm i in the last year of year t ;

$ESG_{i,t}$ represents the score of company i in terms of ESG performance;

$Control_{i,t}$ represents each of the control variables selected for the study;

$\varepsilon_{i,t}$ is the error terms.

4.4.1 Model for Hypothesis 1

MODEL 1:

$$ROE_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 FS_{i,t} + \beta_3 LEV_{i,t} + \beta_4 AT_{i,t} + \beta_5 Age_{i,t} + \beta_6 Year_{i,t} + \varepsilon_{i,t}$$

MODEL 2:

$$EBIT_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 FS_{i,t} + \beta_3 LEV_{i,t} + \beta_4 AT_{i,t} + \beta_5 Age_{i,t} + \beta_6 Year_{i,t} + \varepsilon_{i,t}$$

MODEL 3:

$$\text{Tobin's } Q_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 FS_{i,t} + \beta_3 LEV_{i,t} + \beta_4 AT_{i,t} + \beta_5 Age_{i,t} + \beta_6 Year_{i,t} + \varepsilon_{i,t}$$

4.4.2 Model for Hypothesis 2

MODEL 4:

$$ROE_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 FS_{i,t} + \beta_3 LEV_{i,t} + \beta_4 AT_{i,t} + \beta_5 Age_{i,t} + \beta_6 Year_{i,t} + \varepsilon_{i,t}$$

MODEL 5:

$$EBIT_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 FS_{i,t} + \beta_3 LEV_{i,t} + \beta_4 AT_{i,t} + \beta_5 Age_{i,t} + \beta_6 Year_{i,t} + \varepsilon_{i,t}$$

MODEL 6:

$$\text{Tobin's } Q_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 FS_{i,t} + \beta_3 LEV_{i,t} + \beta_4 AT_{i,t} + \beta_5 Age_{i,t} + \beta_6 Year_{i,t} + \varepsilon_{i,t}$$

4.4.3 Model for Hypothesis 3

MODEL 7:

$$ROE_{i,t} = \beta_0 + \beta_1 SOC_{i,t} + \beta_2 FS_{i,t} + \beta_3 LEV_{i,t} + \beta_4 AT_{i,t} + \beta_5 Age_{i,t} + \beta_6 Year_{i,t} + \varepsilon_{i,t}$$

MODEL 8:

$$EBIT_{i,t} = \beta_0 + \beta_1 SOC_{i,t} + \beta_2 FS_{i,t} + \beta_3 LEV_{i,t} + \beta_4 AT_{i,t} + \beta_5 Age_{i,t} + \beta_6 Year_{i,t} + \varepsilon_{i,t}$$

MODEL 9:

$$\text{Tobin's } Q_{i,t} = \beta_0 + \beta_1 SOC_{i,t} + \beta_2 FS_{i,t} + \beta_3 LEV_{i,t} + \beta_4 AT_{i,t} + \beta_5 Age_{i,t} + \beta_6 Year_{i,t} + \varepsilon_{i,t}$$

4.4.4 Model for Hypothesis 4

MODEL 10:

$$ROE_{i,t} = \beta_0 + \beta_1 GOV_{i,t} + \beta_2 FS_{i,t} + \beta_3 LEV_{i,t} + \beta_4 AT_{i,t} + \beta_5 Age_{i,t} + \beta_6 Year_{i,t} + \varepsilon_{i,t}$$

MODEL 11:

$$EBIT_{i,t} = \beta_0 + \beta_1 GOV_{i,t} + \beta_2 FS_{i,t} + \beta_3 LEV_{i,t} + \beta_4 AT_{i,t} + \beta_5 Age_{i,t} + \beta_6 Year_{i,t} + \varepsilon_{i,t}$$

MODEL 12:

$$\text{Tobin's } Q_{i,t} = \beta_0 + \beta_1 GOV_{i,t} + \beta_2 FS_{i,t} + \beta_3 LEV_{i,t} + \beta_4 AT_{i,t} + \beta_5 Age_{i,t} + \beta_6 Year_{i,t} + \varepsilon_{i,t}$$

5. Empirical Findings and Discussion

5.1 Descriptive Statistics

Table 1. Descriptive Statistics Result

Variable	N	Mean	p50	SD	Min	Max
ROE (%)	630	11.56	10.49	8.339	-24.24	43.28
EBIT	630	11330000000	5369000000	17460000000	-17170000000	133700000000
Tobin's Q	630	2.112	1.327	2	0.674	17.11
ESG Score	630	49.1	48.38	6.294	30.88	71.88
ENV	630	24.21	18.75	13.92	9.625	82.39
SOC	630	23.46	17.75	14.42	8.25	74.19
GOV	630	18.64	13.38	13.39	7.375	70.69
Size	630	25.18	25.24	1.371	21.9	28.64
LEV (%)	630	52	55.21	19.45	1.427	86.64
AT	630	0.637	0.544	0.411	0.022	2.427
Age	630	14.57	15	5.697	2	27

Table 1 shows the descriptive statistics for the essential variables in this paper, including the variable name, sample size, mean, median, standard deviation, and minimum and maximum values. For the dependent variable, ROE has a mean and median of 11.56% and 10.49%, respectively, with a range interval from a minimum value of -24.24% to a maximum weight of 43.28% and a standard deviation of 8.339%. This result reflects that profitability varies significantly among the companies in the sample, especially those at the minimum value of -24.24. This may mean they cannot use their assets' profitability for reinvestment to earn a return and may even incur a loss. Similarly, like ROE, the Earnings before interest and taxes range suggests a striking disparity in profitability between these companies, such that companies with deals near -17170000000 may be experiencing significant losses. Tobin's Q has an average value of 2.112, ranging between 0.674 and 17.11. This indicates that most of the companies in the sample may be overvalued. The large standard deviations in ROE and EBIT (especially EBIT) suggest that these companies are very volatile and have high volatility in their performance.

Secondly, for the dependent variable, the ESG performance of these listed companies is quite good, and the standard deviation of the variable is 6.294, which implies that the ESG scores of these 105 listed companies did not undergo a significant change. However, the scores for the three environmental, Social and Governance pillars are less stable than ESG. The Environmental Pillar Score ranges between 9.625 and 82.39 with a standard deviation of 13.92, while the Social Pillar Score ranges between 8.25 and 74.19 with a standard deviation of 14.42; The Governance Pillar Score ranges between 7.375 and 70.69 with a standard deviation of 13.39. From these data, it can be seen that there is a significant difference in the importance of these three pillars, which means that some companies show a high level of sustainability on these pillars. In contrast, others have a relatively low level. These three large standard deviations also show a significant difference between the companies regarding environmental, social, and governance performance.

5.2 Empirical Findings

5.2.1 The Impact of ESG on ROE

Table 2. Regression results with ROE as the dependent variable

Models	1	4	7	10
Variables	ROE	ROE	ROE	ROE
ESG Score	-0.126** (0.054)			
ENV		-0.136** (0.065)		
SOC			-0.061 (0.084)	

Models	1	4	7	10
Variables	ROE	ROE	ROE	ROE
GOV				-0.159* (0.090)
Size	-0.228 (0.300)	-0.26 (0.299)	-0.361 (0.296)	-0.257 (0.301)
LEV	-0.072*** (0.021)	-0.071*** (0.021)	-0.068*** (0.021)	-0.071*** (0.021)
AT	4.221*** (0.776)	4.242*** (0.777)	4.189*** (0.779)	4.297*** (0.779)
Age	0.094 (0.059)	0.089 (0.059)	0.09 (0.059)	0.093 (0.059)
_cons	23.281*** (7.056)	20.622*** (6.953)	21.536*** (7.156)	19.916*** (6.964)
N	630	630	630	630
r2	0.105	0.104	0.098	0.102
r2_a	0.091	0.089	0.084	0.088
Year	YES	YES	YES	YES

Note: Standard errors in parentheses * p < 0.1, ** p < 0.05, *** p < 0.01

Table 2 demonstrates using the same control variables to explore the relationship between different independent variables and ROE when the dependent variable is ROE and the year is fixed.

The results show that the ESG score significantly negatively impacts ROE at a 5% significance level, and the environmental score is also negatively associated with ROE at the 5% significance level. The social score coefficient is -0.061 with a p-value greater than 0.1, which indicates that the social pillar exhibits an insignificant negative correlation with ROE. In addition, the governance score coefficient is -0.159 with a p-value less than 0.1, indicating that governance factors significantly negatively impact ROE.

5.2.2 The Impact of ESG on EBIT

Table 3. Regression results with EBIT as the dependent variable

Models	2	5	8	11
Variables	EBIT	EBIT	EBIT	EBIT
ESG Score	-197400000 (74303017.9)			
ENV		-317000000 (88617853.3)		
SOC			-280100000 (116000000)	
GOV				120300000 (124900000)
Size	1241000000 (413300000)	1243000000 (409300000)	1218000000 (407000000)	1214000000 (415700000)
LEV	-419900000 (28325647.6)	-420800000 (28166682.4)	-412700000 (28247993.9)	-411400000 (28435598.7)
AT	537400000 (1069000000)	543900000 (1065000000)	529400000 (1070000000)	526400000 (1077000000)

Models	2	5	8	11
Variables	EBIT	EBIT	EBIT	EBIT
Age	-139600000* (81436819.7)	-147200000* (81018622.9)	-144100000* (81477569.9)	-149600000* (81834289.1)
_cons	-270900000 0000*** (9725000000)	-274900000 0000*** (9531000000)	-270100000 0000*** (9833000000)	-275100000 0000*** (9627000000)
N	630	630	630	630
r2	0.612	0.616	0.612	0.608
r2_a	0.606	0.610	0.605	0.602
Year	YES	YES	YES	YES

Note: Standard errors in parentheses * p < 0.1, ** p < 0.05, *** p < 0.01

Table 3 shows EBIT as the dependent variable and explores the effect of each of the other variables on it. According to the ESG score coefficient of Model 2, indicating that the ESG score significantly negatively impacts EBIT at a 1% significance level. Similarly environmental score and the social score indicating that it is also significantly negatively related to EBIT. In addition, the coefficient of the governance factor in model 11 is 120,300,000, with a p-value more significant than 0.1, indicating that the governance factor may positively affect EBIT.

5.2.3 The Impact of ESG on Tobin's Q

Table 4 shows the regression with Tobin's Q as the dependent variable. Initially, it can be briefly seen from the table that all four independent variables show a significant and negative correlation to the dependent variable. The results of Pettersson and Travergård's (2023) study also show a significant negative correlation between Tobin's Q and ESG, ENV and SOC.

Table 4. Regression results with Tobin's Q as the dependent variable

Models	3	6	9	12
Variables	Tobin's Q	Tobin's Q	Tobin's Q	Tobin's Q
ESG Score	-0.030*** (0.011)			
ENV		-0.028** (0.013)		
SOC			-0.044*** (0.017)	
GOV				-0.073*** (0.018)
Size	-0.529*** (0.059)	-0.540*** (0.059)	-0.564*** (0.058)	-0.514*** (0.059)
LEV	-0.031*** (0.004)	-0.031*** (0.004)	-0.030*** (0.004)	-0.031*** (0.004)
AT	0.229 (0.154)	0.233 (0.154)	0.217 (0.154)	0.269* (0.153)
Age	-0.038*** (0.012)	-0.039*** (0.012)	-0.038*** (0.012)	-0.037*** (0.012)
_cons	18.702*** (1.396)	18.060*** (1.378)	18.856*** (1.412)	17.796*** (1.366)
N	630	630	630	630
r2	0.391	0.388	0.390	0.400
r2_a	0.381	0.378	0.380	0.390
Year	YES	YES	YES	YES

Note: Standard errors in parentheses * p < 0.1, ** p < 0.05, *** p < 0.01

6. Summary and Conclusion

6.1 Summary of Findings

The findings from the fixed effects regression model suggest a negative relationship between ESG and firm performance. When employing several proxy variables such as ROE, EBIT, or Tobin's Q, it is evident that ESG performance has a notable adverse effect on business performance. Consistent with some of the previous studies, the reason for this negative relationship may be that Chinese listed companies started to focus on ESG later than developed countries, so the long-term benefits of the company have not yet been fully realised.

Subsequently, the fixed-effects regression model results also show that the environmental score, similar to the ESG total score, has a significant negative impact on those three proxy variables for firm performance, indicating that the better the firm's environmental performance, the worse its performance. The social score has little effect on ROE and presents a significant negative effect on the other two variables (EBIT and Tobin's Q). Therefore, this could also indicate that good social performance may come at the expense of financial performance. Apart from not showing a significant association with EBIT, governance score exhibits a significant negative effect on ROE and Tobin's Q. Taken together. It can be seen that good performance in all pillars of ESG is detrimental to firm performance. These findings are also confirmed in previous literature. We analyse that the reasons for this result may be diverse. Firstly, our study only includes a sample of 105 companies over six years, making it challenging to reflect long-term returns effectively. Secondly, the industries in which we have selected our samples may require significant cost inputs (e.g., environmental performance) in building good ESG performance. These reasons together lead to lower firm performance.

In general, the development of ESG as a whole and its pillars results in lower firm performance in the short run. The four hypotheses we predicted in the previous section are also primarily validated.

6.2 Contributions and Implications of the Study

This dissertation argues that ESG performance harms the corporate performance of listed companies in China. By revealing the relationship between ESG performance and performance, company managers can better understand which areas need improvement to enhance overall company performance. The results of this study also have important implications for shareholders, investors, and other stakeholders in the Chinese market. For shareholders and managers, given that ESG generally serves the interests of shareholders in long-term planning, ESG expenditures do not pay off immediately but rather begin to show benefits after a certain level of ESG is reached. Therefore, until this goal is reached, it is recommended that company managers should pay attention to the rational allocation of capital investment and control costs to minimise the negative impact of short-term ESG on company performance. For investors, the findings of this dissertation provide a reference that good ESG performance does not necessarily mean good company performance, and it is recommended that investors should also consider other aspects to evaluate company performance before investing.

6.3 Recommendations for Future Research

In light of the discoveries and constraints outlined in this study, we offer a series of observations and suggestions for future research endeavours.

In the first place, the dissertation's sample size is restricted to 105 publicly listed firms in China. Future research can consider increasing the sample size or integrating listed companies from multiple countries as samples, such as the Global 500. This is because company size impacts company performance, and there are differences in ESG requirements in different countries.

Furthermore, moderating variables may be employed to investigate their impact on the association between environmental, social, and governance (ESG) factors and corporate performance. In their study, Rahman, Zahid, and Al-Faryan (2023) employed sustainability strategy and top management commitment as moderating variables to examine the impact of environmental, social, and governance (ESG) factors on business performance.

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