

The Environmental, Social, and Governance (ESG) Rating, Firm Value and the Corporate Ownership Concentration

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Abstract

This study analyzed the relationship between ESG performance and corporate value using panel data from Chinese equipment manufacturing companies spanning from 2012 to 2021, and it also examined whether ownership structure moderates this relationship. We have contributed to filling the gap in existing research. The main conclusions of this study are as follows: Firstly, similar to previous researches, ESG performance was found to have a positive and statistically significant impact on corporate value. Secondly, when the three dimensions of ESG - Environmental (E), Social (S), and Governance (G) - were analyzed separately, it was observed that E and S have a positive and statistically significant impact on corporate value, while G has a negative and statistically significant impact. Thirdly, ownership concentration emerged as a significant moderating factor in explaining the connection between ESG performance and corporate value. Lastly, when the three dimensions of ESG were analyzed separately, ownership concentration was found to serve as a positive moderating factor in the relationship between corporate value and E and S, but it did not play a statistically significant role for G.

Keywords: *ESG Rating, Firm Value, Ownership Structure, Moderating Role*

1. Introduction

Environmental, Social, and Governance (ESG) is perceived as improving a company's financial performance and increasing its corporate value. Companies that engage in ESG investments are known to enhance their relationship with stakeholders and improve corporate value through sustainable management. Environmental protection, social responsibility, and governance directly impact a company's ESG activities, leading to an enhancement of corporate value. ESG is widely supported and evaluated in academia and industry. Companies with strong ESG performance receive government support and stakeholder support, while those with poor ESG performance face fines from regulatory agencies and neglect from stakeholders.

Despite the widespread support for ESG in academia and industry, empirical results regarding the relationship between ESG and corporate value have not yielded consistent conclusions. Differences exist

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between advanced and developing countries, as well as variations depending on the analysis period and model used. Some studies suggest a positive relationship, while others indicate a negative one. On the other hand, some studies argue that there is no significant relationship between the two. Therefore, this study aims to provide a more detailed analysis of the impact of ESG performance on corporate value by examining whether a company's ownership structure plays a moderating role in the relationship between them.

ESG performance is particularly important in the manufacturing sector, especially due to the industry's unique characteristics. Manufacturing operations can generate environmental issues during the production process, making ESG performance even more critical. Additionally, the manufacturing sector in emerging countries, such as China, is likely to be more sensitive to environmental concerns compared to advanced nations. Therefore, this study focuses on China's manufacturing industry, often referred to as the "world's factory," and specifically analyzes the environmentally sensitive equipment manufacturing sector. This paper examines the impact of ESG on corporate value in China's equipment manufacturing industry through the moderating effect of ownership concentration. In other words, by analyzing the moderating effect of ownership structure on the impact of ESG on corporate value, this study aims to fill existing research gaps.

2. Literature Review and Hypotheses

Most scholars argue that there is a positive relationship between ESG performance and corporate value. Companies included in ESG indices tend to have higher corporate value [1-3], and some classify ESG into three dimensions to highlight the differential effects on corporate value [4-5]. Results also suggest that ESG practices can enhance corporate value [3-4]. Based on this, this study presents the following hypothesis.

Hypothesis 1: ESG rating is positively related to firm value.

Hypothesis 1-1: The environment (E) sector rating is positively related to firm value.

Hypothesis 1-2: The social (S) sector rating is positively related to firm value.

Hypothesis 1-3: The governance (G) sector rating is positively related to firm value.

Ownership structure can reduce agency costs arising from the principal-agent problem [4]. Agency theory is a key theory used frequently in the literature to study the relationship between ownership structure and firm performance [5]. From 2007 to 2016, a significant positive relationship between ownership concentration and corporate value was found in Egyptian firms [6]. Research on Chinese companies has also indicated that ownership concentration has a moderating effect on the relationship between ESG and corporate value [7]. Consequently, the following hypothesis is proposed.

Hypothesis 2: The ownership concentration positively moderates the impact of ESG on firm value.

Hypothesis 2-1: The ownership concentration positively moderates the impact of E on firm value.

Hypothesis 2-2: The ownership concentration positively moderates the impact of S on firm value.

Hypothesis 2-3: The ownership concentration positively moderates the impact of G on firm value.

3. Data and Research Model

This study was conducted on Chinese equipment manufacturing companies' Class A stocks from 2011 to 2020. Data were obtained from Bloomberg and Guotaian databases, utilizing 164 companies and 1,640 observations.

The dependent variable, corporate value, was measured using Tobin's Q (TQ), calculated by dividing

market capitalization by total assets. The explanatory variable, ESG, utilized Bloomberg's evaluation score. Control variables included firm size (SIZE), obtained by taking the natural logarithm of total assets; capital structure (LEV), using the debt ratio; and fixed asset ratio (FA), calculated as the ratio of fixed assets to total assets. The moderating variable, ownership concentration, was calculated as the proportion of the largest shareholder's stake in the total shares.

The models for testing H1 and H1-1 to H1-3 are as follows:

$$TQ_{it} = \alpha_0 + \beta_1 ESG_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 FA_{i,t} + \varepsilon_t \tag{1}$$

$$TQ_{it} = \alpha_0 + \beta_1 E_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 FA_{i,t} + \varepsilon_t \tag{2}$$

$$TQ_{it} = \alpha_0 + \beta_1 S_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 FA_{i,t} + \varepsilon_t \tag{3}$$

$$TQ_{it} = \alpha_0 + \beta_1 G_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 FA_{i,t} + \varepsilon_t \tag{4}$$

The models for testing H2 and H2-1 to H2-3 are as follows:

$$TQ_{it} = \alpha_0 + \beta_1 ESG_{i,t} + \beta_2 LASH_{i,t} + \beta_3 ESG_{it} \times LASH_{it} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 FA_{i,t} + \varepsilon_t \tag{5}$$

$$TQ_{it} = \alpha_0 + \beta_1 E_{i,t} + \beta_2 LASH_{i,t} + \beta_3 E_{it} \times LASH_{it} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 FA_{i,t} + \varepsilon_t \tag{6}$$

$$TQ_{it} = \alpha_0 + \beta_1 S_{i,t} + \beta_2 LASH_{i,t} + \beta_3 S_{it} \times LASH_{it} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 FA_{i,t} + \varepsilon_t \tag{7}$$

$$TQ_{it} = \alpha_0 + \beta_1 G_{i,t} + \beta_2 LASH_{i,t} + \beta_3 G_{it} \times LASH_{it} + \beta_4 SIZE_{i,t} + \beta_5 LEV_{i,t} + \beta_6 FA_{i,t} + \varepsilon_t \tag{8}$$

Where, i represents the firm, and t represents the year. β is a parameter, and ε represents the error term.

Table 1 displays the descriptive statistics of the variables used in the study. The average for TQ is 1.8564, with a standard deviation of 1.0495, showing a significant variation in corporate value among companies, as indicated by the substantial difference between the maximum and minimum values. The average for ESG is 21.3341, with a standard deviation of 6.6108, indicating that a considerable number of companies have not shown significant interest in ESG. Control variables such as firm size, capital structure, and fixed asset ratio also exhibit significant differences among companies.

Table 1. Descriptive statistics

Variables	Obs	Mean	Median	Min	Max	Std.Dev
TQ	1640	1.8564	1.5060	0.7430	9.6141	1.0495
ESG	1640	21.3341	20.6612	1.2397	52.4793	6.6108
E	1640	10.3244	20.6612	0.0000	51.9380	8.0018
S	1640	23.4000	22.8070	0.0000	61.4035	9.4543
G	1640	44.9174	44.6429	3.5714	62.5000	5.0348
SIZE	1640	23.0481	22.8733	19.5411	27.5470	1.3435
LEV	1640	48.1993	49.4736	4.1467	110.1940	18.3111
FA	1640	18.4552	16.8816	0.5537	62.5873	10.3092

Table 2 presents the correlation analysis among the variables. ESG shows a significant relationship with corporate value. Firm size and capital structure also exhibit significant relationships with corporate value, but the fixed asset ratio does not show a significant relationship. To check for multicollinearity, a Variation Inflation Factor (VIF) test was conducted, and the VIF coefficients were found to be less than 3, indicating the absence of multicollinearity.

Table 2. Correlation matrix

Variables	TQ	ESG	E	S	G	SIZE	LEV	FA
TQ	1							
ESG	-0.177***	1						
E	-0.166***	0.946***	1					
S	-0.103***	0.848***	0.699***	1				
G	-0.196***	0.532***	0.374***	0.327***	1			
SIZE	-0.380***	0.449***	0.444***	0.298***	0.324***	1		
LEV	-0.381***	0.212***	0.179***	0.120***	0.289***	0.555***	1	
FA	0.012	0.030	0.019	0.017	0.037	-0.120***	-0.020	1

4. Empirical Results

Based on the Hausman test, the models were analyzed using a fixed-effects model. Table 3 displays the results of the regression analysis for Models 1-4. In Model 1, ESG has a significant positive impact on Tobin's Q, indicating that ESG performance significantly increases corporate value. Therefore, Hypothesis H1 is supported. The environmental and social sectors of ESG, represented by E and S, also show a significant increase in corporate value, supporting H1-1 and H1-2. However, the corporate governance sector of ESG, represented by G, appears to significantly decrease corporate value, leading to the rejection of Hypothesis H1-3.

As for control variables, firm size has a negative significant relationship with corporate value, while capital structure shows a positive significant relationship. However, the fixed asset ratio does not exhibit a significant relationship with corporate value.

Table 3. Regression results of model (1)-(4)

	Model 1	Model 2	Model 3	Model 4
Intercept	7.7397 (7.8427)***	7.7320 (7.8238)***	8.1863 (8.3378)***	7.3250 (7.8806)***
ESG	0.0088 (1.7429)*			
E		0.0066 (1.7003)*		
S			0.0105 (3.1464)***	
G				-0.0142 (-2.3109)**
SIZE	-0.2780 (-6.0196)***	-0.2723 (-6.0445)***	-0.2998 (-6.6075)***	-0.2225 (-5.1900)***
LEV	0.0048 (1.9875)**	0.0047 (1.9320)*	0.0049 (2.0309)**	0.0376 (1.5314)
FA	0.0056 (1.4854)	0.0058 (1.5285)	0.0053 (1.3963)	0.0063 (1.6598)*
adj.R ²	0.5089	0.5089	0.5112	0.5097
F Value	10.9911***	10.9892***	11.0826***	11.0218***

*P<0.10, **P<0.05, ***P<0.01

Table 4 presents the regression results for the moderating effect of capital concentration. The coefficient for ESG_{LASH} shows a significant positive effect, indicating that ESG enhances corporate value, especially in

firms with concentrated capital. Therefore, Hypothesis H2 is supported. ELASH, SLASH, and GLASH all have positive coefficients. ELASH and SLASH show significant values at the 10% significance level, supporting H2-1 and H2-2. However, the coefficient for G*LASH is not statistically significant, leading to the non-support of Hypothesis H2-3.0 not use double-spacing. Leave a space between word and parenthesis. Special words of Latin or French origin should be in italic (e.g., in vitro, et al.). Be sure your text is fully justified-that is, flush left and flush right.

Table 4. Regression results of model (5)-(8)

	Model 5	Model 6	Model 7	Model 8
Intercept	8.7679 (7.8436)***	8.5510 (7.7016)***	9.0272 (8.1924)***	8.6884 (7.3166)***
ESG	-0.0092 (-0.8079)			
E		-0.1176 (-0.8047)		
S			-0.0009 (-0.1184)	
G				-0.0273 (-1.8689)*
LASH	-0.0152 (-2.2464)**	-0.0091 (-2.1343)**	-0.0113 (-2.0887)**	-0.0208 (-1.2899)
ESG*LASH	0.0005 (1.7424)*			
E*LASH		0.0004 (1.6485)*		
S*LASH			0.0003 (1.6850)*	
G*LASH				0.0003 (0.9324)
SIZE	-0.2990 (-6.1162)***	-0.2944 (-6.1228)***	-0.3181 (-6.6416)***	-0.2474 (-5.3912)***
LEV	0.0052 (2.1314)**	0.0052 (2.1087)**	0.0051 (2.0981)**	0.0042 (1.7036)*
FA	0.0052 (1.3683)	0.0055 (1.4573)	0.0048 (1.2807)	0.0055 (1.4424)
adj.R ²	0.5099	0.5099	0.5120	0.5102
F Value	10.9162***	10.9123***	10.9974***	110.9279***

*P<0.10, **P<0.05, ***P<0.01

5. Conclusion

Using panel data from Chinese equipment manufacturing companies from 2012 to 2021, we analyzed the moderating role of ownership structure in the relationship between ESG performance and corporate value. The key findings are as follows. First, ESG performance has a positive and statistically significant impact on corporate value, although the statistical significance is not very high. Second, when analyzing ESG's three dimensions - E (environmental), S (social), and G (governance) separately, it was found that E and S have a positive and significant impact on corporate value, while G has a negative and significant impact. Third,

ownership concentration was found to be an important moderating factor explaining the connection between ESG performance and corporate value. Fourth, when analyzing the three dimensions of ESG separately, ownership concentration was found to be an important moderating factor explaining the connection between E and S and corporate value, but it was not significant for G.

This study contributes to filling the research gap regarding the relationship between ESG performance and corporate value. However, it has limitations in that it only analyzes specific industries in the Chinese market. In future research, researches that address these limitations will need to be conducted.

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