An Empirical Analysis of ESG Performance Impact on Corporate Value: A Before-and-After Comparison Based on Code of Governance for Listed Companies

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Abstract. The impact of ESG performance on corporate value is one of the key research topics in today's research. Researchers have found that there is a significant correlation between ESG performance and corporate value, however, there is still a research gap on the mechanism of specific policies affecting ESG performance on corporate value, and there is still a lack of unified interpretation and cognition. Therefore, it is of great significance to deeply explore the specific impact path and effect of ESG performance on corporate value in the policy context to improve corporate governance and promote sustainable development. This study conducts a regression analysis of corporate ESG performance and corporate value based on the specific time of policy issuance. Explore the impact of ESG performance on corporate value over time. The study finds that in the long run, corporate ESG performance has a significant impact on corporate value, and it is particularly noteworthy that since the implementation of the revision of the Code of Corporate Governance for Listed Companies in 2019, the impact of ESG performance on corporate value has changed significantly, from a non-significant correlation to a clear positive correlation. This shift may be due to the increasing emphasis on sustainability and environmental, social and governance (ESG) factors among investors and the market, prompting companies to strengthen their ESG practices, which in turn increases their market value and social acceptance.

Keywords: ESG Performance, Corporate Value, Code of Governance for Listed Companies, Industry-Adjusted Tobin's Q.

1. Introduction

This shift may be due to the increasing emphasis on sustainability and environmental, social and governance (ESG) factors among investors and the market, prompting companies to strengthen their ESG practices, which in turn increases their market value and social acceptance. On top of this, whether the ESG performance of Chinese companies will affect the corporate value of the company is of great research significance. ESG performance not only reflects the company's efforts in environmental protection, social responsibility and corporate governance, but is also directly related to the company's long-term development and market competitiveness. Against this backdrop, governments and regulatory agencies have introduced policies to guide and regulate the ESG behavior of companies. This has been extensively studied in previous literature. Based on Zhang & Zhao’s empirical research on A-share listed companies, they pointed out that there is a significant positive correlation between ESG performance and corporate value, indicating that companies with good ESG performance tend to have higher market value [1]. Wang’s paper further refined her research on listed manufacturing companies and found that environmental performance has a significant positive impact on corporate value, while the impact of social responsibility and corporate governance is positive but not significant [2]. Excellent environmental performance and detailed environmental information disclosure make standard end-of-service bonuses an effective risk management tool, which can not only significantly reduce operational risks but also help improve financial performance [3]. These studies provide a solid academic foundation for this article. Previous studies have not explored the direct effects of specific policies on corporate ESG performance. Therefore, this article selects the revision of the "Code of Governance for Listed Companies " as the research object, aiming to fill this research gap and deeply analyze how policy revisions can promote companies to improve their ESG performance and thus affect their value assessment, providing new perspectives and insights for optimizing the policy environment and enhancing the sustainable development capabilities of companies.

This study uses quantitative analysis methods to deeply analyze the impact of corporate ESG performance on its market value. By constructing a multivariate regression model, it aims to objectively evaluate the contribution of ESG to corporate value. In addition, this study further explores whether relevant policy changes have significantly regulated the relationship between ESG performance and corporate value, in order to provide scientific basis and strategic recommendations for policymakers, corporate management and investors.

This study reveals the significant impact of corporate ESG performance on corporate value between 2011 and 2023. In particular, the positive correlation of ESG performance significantly increased after relevant policies were revised. This finding emphasizes the importance of ESG in enhancing corporate value and the importance of policy impact on it, providing important reference for policymakers and corporate practices.

It not only verifies the long-term positive impact of corporate ESG performance on corporate value, but also explores the effect of policy changes on the relationship between the two. By comparing the data before and after the revision, this study reveals the key role of ESG strategies in driving corporate value growth, especially in the context of policy guidance and market environment changes.

2. Literature Review and Research Hypotheses

In recent years, with the deepening of the concept of sustainable development, more and more studies have begun to focus on the relationship between a company's ESG performance and its financial performance. Research in this field generally shows that good ESG performance can significantly enhance corporate value. Companies with high ESG performance have obvious advantages in financial performance compared to those with low ESG performance. The market value and earnings per share of high ESG companies are significantly higher than those of low ESG companies, which further confirms the importance of ESG performance to corporate value [4].

By disclosing ESG information, companies can not only significantly improve transparency, effectively reduce information asymmetry and agency problems, thereby reducing financing costs, but also actively shape their good social responsibility image, further consolidate their close ties with stakeholders, and greatly enhance the company's reputation and credibility. Corporate ESG performance is positively correlated with corporate performance [5].

First, from the environmental dimension, the study found that there is a significant U-shaped curve relationship between environmental protection investment and corporate value. That is, in the early stage of environmental protection investment, due to the increase in corporate operating costs in the short term, corporate value will decline. However, as environmental protection investment continues to increase, its long-term benefits gradually emerge, such as improving corporate image, reducing environmental penalty costs, and promoting technological innovation, thereby driving up corporate value [6].

From a social perspective, companies that value employee welfare, community participation, and supply chain responsibility can build a more harmonious corporate ecosystem, improve employee satisfaction and loyalty, and thus enhance corporate competitiveness and market recognition. In terms of governance, a good corporate governance structure can ensure the scientificity and transparency of decision-making, enhance investor confidence, and reduce agency costs.

Ali et al. found that actively fulfilling social responsibilities helps improve financial performance [7]. Companies with good social responsibility performance are more inclined to disclose their activities to the market. This disclosure behavior not only signals the company's long-term orientation and differentiation, but also increases transparency about the company's social and environmental impact and its governance structure. Due to the reduction of information asymmetry, the market's perception of corporate risk is reduced, which in turn reduces the company's capital constraints. This reduction in capital constraints enables companies to obtain external financing at a lower cost, thereby supporting their strategic investment and growth [8]. When executives and institutional investors hold a high proportion of shares, they pay more attention to the long-term sustainable development of the company and are more willing to invest in ESG, thereby increasing the value of the company [9].

In summary, a company’s ESG performance is not only a reflection of its social responsibility, but also a source of its long-term competitiveness. Therefore, it has reason to assume that, at the overall level, there is a significant positive correlation between a company’s ESG performance and its corporate value.

Hypothesis 1. Overall, a company's ESG performance has a significant positive impact on its corporate value.

The guidance and support of government policies are important external driving forces for companies to improve their ESG performance. By comparing the data before and after the policy, it can intuitively evaluate the impact of the policy on the ESG performance and corporate value of the company. When the government introduces relevant policies, such as environmental protection regulations, social responsibility reporting requirements, and corporate governance reform measures, companies tend to increase their investment in ESG in order to comply with policy standards. This investment not only prompts companies to achieve practical results in environmental protection, society, and governance, but also demonstrates the company's sustainable development capabilities and sense of responsibility to the market through a signal transmission mechanism, thereby enhancing investor confidence. Social responsibility policies promote the improvement of corporate value by improving the quality of corporate accounting information. The implementation of social responsibility policies helps improve corporate internal governance and increase information transparency, thereby enhancing investor confidence and increasing corporate market value [10]. Therefore, it is expected that after the implementation of the policy, the market value of those companies that actively respond and successfully improve their ESG performance will be significantly improved.

After reading and exploring the literature, this study selected the revision of the "Corporate Governance Guidelines for Listed Companies" as the policy background for analysis. This revision established the basic framework for ESG information disclosure for the first time, requiring listed companies to disclose environmental information (E), fulfill social responsibilities such as poverty alleviation (S) and corporate governance-related information (G) in accordance with laws, regulations and relevant department requirements. This move is of great significance for improving the transparency and standardization of ESG information disclosure by listed companies.

Hypothesis 2. After the policy is implemented, the value of companies that successfully improve their ESG performance will increase significantly compared to companies whose ESG performance has not improved significantly.

Of course, not all studies believe that ESG will have a positive impact on corporate performance and corporate value. For example, a study by Brammer and Pavelin found that companies with better ESG performance actually have lower corporate value [11]. Krüger found that social responsibility was used by managers as a self-serving tool, sacrificing shareholder interests and thus reducing corporate value [12]. Some scholars, such as Atan et al., studied the impact of environmental, social and governance (ESG) factors on the performance of Malaysian companies using Malaysian companies as samples and found that there was no significant relationship between ESG performance and return on equity and corporate value [13]. At the same time, although policy guidance is an important factor in driving companies to improve their ESG performance, not all policies can produce immediate and significant results. On the one hand, factors such as the policy's enforcement, supervision mechanism, and reward and punishment measures may affect the policy's actual effect. On the other hand, when responding to the policy, enterprises may face resource constraints, technical bottlenecks, and management challenges, which may reduce the policy's effectiveness. In addition, the market's understanding and response to ESG information may also be delayed and may not be immediately reflected in changes in corporate value.

Taking into account the above uncertainties, it also needs to consider another possibility, that is, after the policy is implemented, the ESG performance of enterprises does not have a significant impact on corporate value as expected.

Hypothesis 3. Regardless of the policy implementation, changes in ESG performance have no significant impact on corporate value.

3. Methodology

3.1. Data Selection

Based on the convenience, representativeness and completeness of data acquisition, this paper takes Chinese A-share listed companies from 2010 to 2023 as the research object. ESG-related scoring data comes from the Huazheng ESG annual scoring, and other market and financial data comes from the CSMAR database. In the data processing, *ST and ST listed companies were excluded; listed companies in the financial, real estate and other industries were excluded; finally, 4607 listed companies with a total of 44317 observations were obtained. To avoid the influence of outliers, this paper performed minorized tailing processing on continuous variables at the 0.01 and 0.99 levels.

3.2. Variable Definition

Dependent variable (ESG). This article uses the Huazheng ESG score as an explanatory variable. The Huazheng ESG score is a professional service provided by Shanghai Huazheng Index Information Service Co., Ltd. This scoring system provides companies with objective and comprehensive ESG rating results through multi-dimensional evaluation indicators and scientific rating methods. Huazheng ESG rating data has a long history of accumulation, dating back to 2009 and continuing to this day. Currently, more than 4000 companies have been evaluated. Referring to the approach of Xu et al.'s study, this article assigns values to the nine rating results given by Huazheng ESG Rating to measure the ESG performance of enterprises [14]. The nine-level rating results given by Huazheng ESG are assigned values in order of AAA-C, that is, the rating results are assigned from high to low. The highest AAA level is assigned a value of 9, and so on. The lowest level C level is assigned a value of 1. A rating result of C means that the listed company has poor overall performance in environmental performance, social responsibility and corporate governance.

Independent variable (enterprise value). The study found that Tobin's Q coefficient was usually used in previous studies to measure the value of an enterprise. The core calculation formula for measuring whether a company should invest is: Tobin's Q value = market value of the company / replacement cost of the company. Taking into account the characteristics and market environment of a specific industry, this paper uses weighted average and standardized processing to analyze the enterprise data within the industry. Industry-adjusted Tobin's Q coefficient = firm-based Tobin's Q coefficient / industry average Tobin's Q coefficient. By introducing the industry average as a reference, comparisons between different companies become more comparable within the industry.

Control variable. Based on previous studies, this paper selects enterprise age, enterprise size, equity concentration, growth ability, leverage level, combination of two positions and profitability as control variables, shown in Table 1.

Table 1. Variable definition

Type of Variable	Symbol	Construction
Dependent Variable	Industry-adjusted Tobin's Q	firm-based Tobin's Q coefficient / industry average Tobin's Q coefficient
Independent Variable	ESG	Huazheng ESG rating data, with values ranging from 1 to 9. The higher the value, the better the ESG performance.
Control Variable	Age	Years of operation as of the data point in time
	Size	The natural logarithm of the company's total assets
	Top10	Shareholding ratio of top ten shareholders
	Growth	Operating income growth rate
	Lev	Total liabilities at the end of the period / Total assets at the end of the period
	Dual	If the chairman and general manager are the same person, the value is 1. Otherwise, the value is 0.
	CF	Net cash flow from operating activities / total assets at the end of the year

3.3. Modelling

In order to evaluate the direction and specific extent of the impact of a company's ESG (environmental, social and governance) performance on its value, this article constructs the following panel data regression model based on the variables defined above:

$$\begin{aligned}\text{Industry} - \text{adjusted Tobin's Q} \\ &= \alpha + \beta_1 ESG_{i,t} + \beta_2 Age_{i,t} + \beta_3 Size_{i,t} + \beta_4 Top10_{i,t} + \beta_5 Growth_{i,t} + \beta_6 Lev_{i,t} \\ &+ \beta_7 Dual_{i,t} + \beta_8 CF_{i,t} + \varepsilon\end{aligned} \tag{1}$$

In the model, the subscripts i and t represent different enterprise individuals and years respectively. Industry-adjusted Tobin's $Q_{i,t}$ is the enterprise value of enterprise i in year t; $ESG_{i,t}$ represents the ESG rating of enterprise i in year t; Age, Size, Top10, Growth, Lev, Dual, and CF represent the control variables of this paper.

4. Empirical Results

4.1. Descriptive Statistics

Table 2. Descriptive statistics

VARIABLES	N	mean	p50	SD	min	max
Industry-adjusted Tobin's Q	7,814	0.875	0.740	0.468	0.350	3.053
Esg	7,814	4.233	4	0.831	1	7
Dual	7,814	0.340	0	0.474	0	1
Lev	7,814	0.405	0.397	0.201	0.0530	0.905
Age	7,814	3.088	3.135	0.288	2.197	3.611
SIZE	7,814	22.34	22.12	1.306	19.94	26.39
CF	7,814	0.161	0.123	0.127	0.00795	0.634
Top10	7,814	56.94	57.16	15.81	22.06	90.47
Growth	7,814	0.120	0.0559	0.283	-0.277	1.730

According to Table 2, the average value of corporate ESG rating is 4.233, indicating that the sample companies have generally performed well in ESG, but the standard deviation is 0.831, indicating that there are certain differences in ESG performance among companies. The mean of Industry-adjusted Tobin's Q is 0.875, and the standard deviation is 0.468, indicating that the distribution of corporate value is relatively dispersed, and the market value performance of different companies varies. The descriptive statistical results of ESG ratings and corporate value show that although ESG performance is generally good, its specific impact on corporate value still needs to be verified through further regression analysis. In summary, ESG performance and corporate value both show their own distribution characteristics, and there may be a certain correlation between the two, but the specific impact needs to be further analyzed.

The average value of the top 10 is 56.93%, indicating that the top ten shareholders hold a relatively high proportion of shares in most companies, reflecting a relatively concentrated equity structure. In addition, the mean value of Growth is 0.120, indicating that the average operating income growth rate of the sample companies is relatively stable, but the standard deviation is large at 0.283, indicating that the growth potential of different companies varies significantly. The fact that the growth mean is greater than the median indicates that the sample companies have a positively skewed distribution in terms of growth, reflecting the existence of high-growth companies and their effect on raising the overall average level.

Table 3. Correlation matrix

	Industry-adjusted Tobin's Q	ESG	Age	SIZE	Lev	CF	Top10	Growth	Dual
Industry-adjusted Tobin's Q	1.00								
Esg	-0.092***	1.00							
Age	0.000	-0.053***	1.00						
SIZE	-0.317***	0.170***	0.179***	1.00					
Lev	-0.119***	-0.143***	0.169***	0.448***	1.00				
CF	0.068***	0.124***	-0.210***	-0.223***	-0.403***	1.00			
Top10	-0.082***	0.152***	-0.228***	0.103***	-0.146***	0.180***	1.00		
Growth	-0.017***	0.118***	-0.230***	-0.080***	-0.157***	0.175***	0.202***	1.00	
Dual	0.032***	0.016***	-0.094***	-0.180***	-0.151***	0.092***	0.039***	0.113***	1.00

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

As Table 3 shown, this paper found that multiple variables have a significant impact on Industry-adjusted Tobin's Q. There is a negative correlation between ESG and corporate value, but the coefficient is small, indicating that the direct impact of ESG performance on corporate value may be more complex. This may be because the impact of other variables has been ignored, resulting in biased results that need further discussion. SIZE is significantly negatively correlated with Industry-adjusted Tobin's Q, which means that after controlling for other factors, large companies do not necessarily enjoy higher market valuations, which is consistent with previous research. LEV is also negatively correlated with Industry-adjusted Tobin's Q, reflecting that high debt may reduce the market evaluation of the company. However, CF and Growth are positively correlated with enterprise value and both reach significant levels, indicating that cash flow and revenue growth generated by corporate operating activities have a positive effect on improving market valuation.

4.2. Multiple Regression Analysis

Table 4 displays the regression results. Column (1) is the estimation result after adding control variables. Through regression analysis after introducing multiple control variables, the study found that ESG has a positive and significant impact on the estimated coefficient of Industry-adjusted Tobin's Q. This finding verifies the hypothesis H1 of the study, that is, good ESG performance of enterprises can significantly enhance their market value. Columns (2) and (3) take the revision time of the "Code of Governance for Listed Companies " in 2019 as the time node (although the policy was actually issued at the end of 2018, considering the lag of the policy effect, this study sets its impact period as 2019) to study the impact of ESG on corporate value before and after the policy revision, respectively. The results show that before the policy revision, there was a positive correlation between ESG performance and Industry-adjusted Tobin's Q, but the correlation was not significant. However, with the revision and implementation of the Code of Corporate Governance for Listed Companies, the situation has changed significantly. After the policy revision, the impact of corporate ESG performance on Industry-adjusted Tobin's Q not only remains positively correlated, but the correlation also reaches a statistically significant level of 0.01. This finding not only verifies the hypothesis H2 of this article, that relevant policies can effectively enhance the impact of ESG on corporate value, but also reveals the key role of the policy environment in promoting sustainable development of enterprises and optimizing market resource allocation.

Table 4. Multiple regression results

Variables	2010-2023 (1)	2010-2019 (2)	2020-2023 (3)	Robustness (4)
ESG	0.0097***	0.0036	0.0114***	0.0181***
	(3.8266)	(1.0849)	(3.4912)	(3.4764)
Age	0.4159***	0.3118***	1.0302***	0.4160***
	(11.1231)	(5.7723)	(8.6287)	(11.1247)
SIZE	-0.2716***	-0.3459***	-0.3798***	-0.2710***
	(-53.5858)	(-49.9955)	(-31.4105)	(-53.5630)
Top10	-0.0021***	-0.0014***	-0.0027***	-0.0021***
	(-7.3750)	(-3.5859)	(-4.7249)	(-7.3510)
Growth	-0.0581***	-0.0620***	-0.0350***	-0.0568***
	(-8.6908)	(-7.6969)	(-3.5988)	(-8.5205)
Lev	0.1919***	0.2422***	0.2368***	0.1871***
	(9.3357)	(8.9205)	(6.5490)	(9.1422)
Dual	-0.0091	0.0016	-0.0085	-0.0092
	(-1.3099)	(0.1742)	(-0.8130)	(-1.3171)
CF	0.0240	-0.0907***	0.1221***	0.0249
	(1.1064)	(-3.4429)	(3.3471)	(1.1481)
Constant	5.9498***	7.7817***	6.2284***	5.9717***
	(43.5684)	(40.9434)	(15.1578)	(43.6936)
Observations	38,730	23,226	18,730	38,730
R-squared	0.233	0.327	0.122	0.233
Number of Stkcd	4,607	3,228	4,607	4,607

t-statistics in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

4.3. Setting Up 0-1 Dummy Variable Tests

In the previous multivariate regression analysis, this study has preliminarily revealed the impact of ESG performance on Industry-adjusted Tobin's Q, and found that this impact is significantly different before and after the policy revision. In order to further examine the role of policy factors in the relationship between ESG and corporate value, this study specifically sets up a virtual variable - "Policy Active" to clearly distinguish whether the company is affected by relevant policies during the research period. By regressing this dummy variable with Industry-adjusted Tobin's Q, it can more directly assess the potential impact of policy changes on corporate value. Depending on whether the enterprise was affected by the relevant policies during the study period, the dummy variable was binarized. For the years that were not affected by the relevant policies during the study period, this paper sets the "Policy Active" variable to 0; for those years that were affected by the relevant policies during the study period, it sets it to 1. This setting can clearly define whether there is policy impact, and then analyze how this impact affects the company's ESG performance and value.

According to Table 5, the virtual variable "Policy Active" has an impact on Industry-adjusted Tobin's Q. As can be seen from the data, the regression coefficient of Policy Active is 0.0256 and is significant at the 1% statistical level, which clearly shows that policy implementation has a significant positive impact on corporate value.

Specifically, when a company is in an environment where policies are implemented (i.e., the dummy variable is 1), its corporate value is significantly improved compared to companies that are not affected by policies (i.e., the dummy variable is 0). This result supports hypothesis H2, that is, policy implementation can significantly enhance the positive effect of ESG performance on corporate value.

Table 5. Multiple regression results for dummy variable

Variables	Industry-adjusted Tobin's Q
Policy Active	0.0256***
	(3.7822)
Age	0.2867***
	(14.8559)
SIZE	-0.2713***
	(-49.8942)
Top10	-0.0029***
	(-9.4270)
Growth	0.0041
	(0.5697)
Lev	0.1280***
	(5.8005)
Dual	-0.0104
	(-1.3640)
CF	-0.1185***
	(-5.0594)
Constant	6.2655***
	(61.8912)
Observations	38,730
R-squared	0.081
Number of Stkcd	4,607

t-statistics in parentheses; *** p<0.01, ** p<0.05, * p<0.1.

4.4. Robustness Test

In order to examine the impact of ESG rating assignment methods on regression results, this study adopted an ESG rating assignment method that is different from the initial regression. Specifically, the study referred to the investment-grade and non-investment-grade rating methods of S&P and Moody's and reclassified ESG ratings: companies rated B+ and above were regarded as companies with good ESG performance and assigned a value of 1; the remaining companies were regarded as companies with poor ESG performance and assigned a value of 0. This assignment method simplifies the ESG rating levels, making it easier to divide ESG performance into two categories: “good” and “bad”.

After adopting the new ESG rating method, the study re-conducted regression analysis. The results show that there is still a significant positive correlation between ESG performance and Industry-adjusted Tobin's Q. Column (4) is the result of the robustness test. The study shows that ESG performance is still significantly (at the 1% level) positively correlated with corporate value, which is the same as the initial regression results. This result verifies that the positive impact of ESG performance on corporate value is robust and does not depend on the specific ESG rating assignment method.

5. Conclusion

This study deeply analyzes the impact of corporate ESG performance on corporate value before and after the revision of the "Code of Governance for Listed Companies ", and the results show a significant trend of change. This study deeply analyzes the impact of corporate ESG performance on corporate value before and after the revision of the "Corporate Governance Guidelines for Listed Companies", and the results show a significant trend of change. From 2010 to 2023, corporate ESG performance was generally positively correlated with corporate value. It is worth noting that before the revision of the guidelines (before 2019), this relationship was not significant, suggesting the limitations of the early governance environment on corporate value assessment. However, since the revision of the guidelines in 2019, corporate ESG performance has been actively transformed into a positive driving force for corporate value, reflecting the profound changes in policy guidance and market cognition. Furthermore, by setting the "Policy Active" dummy variable, this study directly evaluates the potential impact of policy changes on corporate value. The regression coefficient of the "Policy Active" variable is significantly positive, indicating that in the environment where the policy is implemented, the market value of the enterprise is significantly improved compared to the enterprise that is not affected by the policy. In summary, the conclusion of this study emphasizes the role of the revision of the "Code of Governance for Listed Companies " as a bridge between promoting corporate ESG practices and enhancing corporate value, providing an important reference for policy formulation, corporate decision-making and investor evaluation, and promoting the in-depth practice of the concept of sustainable development.

Policymakers play a vital role in promoting corporate sustainable development. By formulating and implementing policies that are conducive to ESG practices, the government can effectively motivate companies to improve their ESG performance, thereby promoting the green transformation and sustainable development of the entire economic system. For corporate managers, this result also reminds them to pay close attention to policy trends, actively respond to policy calls, and integrate ESG concepts into corporate strategic planning and daily operations to enhance the long-term competitiveness and market value of the company.

Although this study deeply analyzes the impact of the revision of the Code of Corporate Governance for Listed Companies on the relationship between corporate ESG performance and corporate value, and reveals the positive role of policy changes in promoting corporate behavior, the study is still insufficient in exploring the specific causes and mechanisms of the impact. Future research should further explore the specific paths through which policy changes affect companies to explain their deep-seated impact on corporate value, thereby providing more specific and practical suggestions for policymakers and corporate managers.

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