The Relationship Between ESG, Transparency, Reputation, and Tobin's Q: Evidence from the New Energy Industry

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Abstract: Despite extensive research on ESG influencing factors, institutional and policy constraints limit studies on the new energy market. This paper fills this gap by examining 192 listed companies in the new energy industry from 2010 to 2020. Using balanced panel data regression, we assess the effect of ESG on firm value. Our findings reveal that ESG positively impacts transparency, enhancing information efficiency. However, it also shows a negative relationship with reputation, which could be attributed to investment or relative opportunity costs. Importantly, our study underscores that reputation is the primary driver of firm value. The results contribute to understanding the relationship between these factors in the new energy industry.

1. Introduction

The new energy industry in China faces global climate change and energy structure transformation, which are closely related to ESG. Environmental measures, social responsibility, and good governance in new energy companies are crucial for enhancing corporate image, attracting investment, and obtaining government support. Moreover, the development of the new energy industry positively impacts environmental improvement, aligning with societal expectations for sustainable development.

ESG (Environmental, Social, and Governance) influences a company's value by enhancing corporate competitiveness and value. ESG factors can affect not only a company's performance but also its value. Therefore, as societal attention to corporate social responsibility continues to increase, more and more companies are beginning to emphasize ESG factors and incorporate them into their strategic planning to improve their competitiveness and value. Tang et al. (2023)[1] pointed out that customers are more concerned about suppliers' environmental and social performance than corporate governance, which further emphasizes the importance of ESG in the supply chain. They also noted that the positive spill-over effect of customer ESG positively impacts enhancing corporate value. Heidinger and Gatzert (2018)[2] found that over the past decade, awareness of reputational risk management reflected in the annual reports of banks and insurance companies in the US and Europe has increased, and its importance relative to other risks has also grown. The findings of Lin and Li (2022)[3] indicate that the risk preferences and risk resistance capabilities of state-owned renewable energy enterprises have significantly changed. These enterprises play a crucial role in stabilizing the economy and stimulating employment. Pan (2023)[4] shows that energy information disclosure significantly improves investment efficiency during a company's over-investment growth and maturity stages. Pham and Tran (2020)[5] indicate that CEO integrity substantially enhances the positive impact of corporate social responsibility (CSR) disclosure on corporate reputation. CSR disclosure positively affects corporate reputation, significantly contributing to the company's financial performance.

This study investigates the impact of ESG on corporate value using balanced panel data from 192 listed companies in the new energy industry, covering 1,886 sample observations from 2010 to 2020. It discusses (1) corporate reputation in terms of economic performance and social responsibility, reflecting the image and status in the minds of stakeholders such as consumers, investors, and government agencies; (2) corporate transparency, where increased information disclosure allows

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external investors to obtain accurate information about the company, improving judgment accuracy and reflecting stock liquidity risk and equity capital cost; and finally, (3) corporate value, reflecting business growth potential and providing information on future development potential and the relationship between economic growth and corporate social responsibility performance.

This study has five chapters: Chapter 2 is the literature review, Chapter 3 is research methods and data, Chapter 4 is empirical results, and Chapter 5 is conclusions and recommendations.

2. Literature review

The relationship between ESG and corporate value, mainly how ESG affects company performance and value, continues to receive attention. Rahman et al. (2023)[6] found that ESG significantly impacts company performance, particularly in the areas of environment, social, and governance, positively influencing the return on assets (ROA) and Tobin's Q. Chen and Xie (2022)[7] showed that in terms of financial performance, the level of ESG disclosure has a heterogeneous impact, with the most significant effects observed in companies with more investors, more extended establishment history, higher reputation, and higher agency costs. Anita et al. (2023)[8] revealed the critical conditions under which ESG controversies affect corporate value. They found that media coverage of ESG controversies significantly impacts corporate value; high coverage can decrease corporate value, while severe controversies covered by the media can increase corporate value. Mohammad and Wasiuzzaman (2021)[9] showed that even after controlling for competitive advantage, high ESG disclosure can still improve company performance, thereby influencing corporate value. Naeem et al. (2022)[10] further deepened the understanding of the relationship between ESG and financial performance, finding a significant positive correlation between ESG performance and equity returns and corporate value in environmentally sensitive companies.

Chang and Lee (2022)[11] collected sustainability report data containing ESG information from 87 domestic companies in South Korea. The empirical results confirmed that ESG positively affects firm value. Siwei and Chalermkiat (2023)[12] used multiple linear regression to examine the relationships within a sample of 94 firms listed in the GICS energy industry in China from 2018 to 2021. Their results showed a significant positive association between ESG and firm value. Tahmid et al. (2022)[13] used a fixed-effects GLS (Generalized Least Squares) linear model and found that ESG initiatives positively impact firm value and performance. Aydoğmuş et al. (2022)[14] found that the overall ESG combined score is positively and significantly associated with firm value. Individual Social and Governance scores have a positive and significant relationship, while the Environment score does not relate substantially to firm value. However, the ESG combined score and Environment, Social, and Governance scores have positive and significant relationships with firm profitability. Mandas et al. (2024)[15] found an inverse bidirectional causality between ESG reputational risk and banks' market valuation, with a more significant impact on highly exposed banks. Bhimavarapu et al. (2022)[16] indicated that transparency and disclosures (TD) negatively affect firm value, but high ESG can mitigate this negative impact. Fatemi et al. (2018)[17] concluded that ESG strengths increase firm value while weaknesses decrease it, and ESG disclosure moderates these effects.

The relationship between ESG and corporate value is widely recognized, with ESG factors positively impacting company performance and profitability. Integrating ESG into business strategies benefits long-term financial performance and corporate value. However, the impact varies based on company characteristics and external factors such as transparency, disclosures, and reputational risk. Overall, ESG integration is crucial for enhancing firm value and mitigating risks.

3. Data and Method

The sample for this study consists of 192 listed companies in the new energy industry from the Shanghai and Shenzhen stock exchanges between 2010 and 2020, with 1886 sample observations forming a balanced panel dataset obtained from the CSMAR database. The explanatory variables in this paper are ESG performance, environmental performance, social performance, and equity responsibility. The explained variable is a corporate value, with reputation as a mediating variable.

Table 1 provides detailed definitions and calculations for all variables.

Table 1 Definitions

Variables	Definitions
Tobin's Q	The ratio of the market value of a company's stock to the replacement cost of the assets represented by the stock.
ESG	Environmental, Social, Governance.
Transparency	The degree to which external information users can effectively obtain specific information about a listed company.
Reputation	The comprehensive value obtained is based on the corporate reputation evaluation system.
Cash	Ending balance of cash and cash equivalents / current liabilities.
Size	The logarithm of total assets.
Mort	Net fixed assets at year-end / total assets at year-end.
Invest	(Inventory + fixed assets + long-term investments + intangible assets) / total assets.
Lev	Total assets / total liabilities.
Growth	(Ending operating income - beginning operating income) / beginning operating income.
Industry	Industry dummy variable.
Year	Year dummy variable.

This study examines the impact of ESG performance, environmental performance, social performance, and equity responsibility on corporate value. The model is as follows:

$$Tobin'Q_{it} = \alpha_0 + \alpha_1 ESG_{it} + \sum_{i}^{t} \beta_i controls_{it} + \sum industry + \sum year + \varepsilon_{it} \quad (1)$$

where Tobin's Q represents corporate value, ESG is the explanatory variable with its score based on the company's environmental performance, social responsibility, and equity responsibility; controls are the control variables; industry represents the industry effect; and year represents the time effect.

4. Results

Table 2 shows the descriptive statistics, including values for corporate value, environmental performance, social responsibility, equity responsibility, ESG performance, corporate transparency, and corporate reputation. The total number of observations is 1,886. Tobin's Q, with an average of 1.87 and a range from 0.00 to 12.10, indicates varied corporate value among the companies. ESG scores, averaging 4.02 but up to 92.94, show significant differences in environmental, social, and governance practices. Transparency scores, averaging 0.35 and spanning from 0.01 to 0.93, suggest a wide disparity in how openly companies disclose information. Reputation scores, with an average of 16.03 and a maximum of 22.67, highlight moderate differences in how companies perceive their reputational standing.

Table 2 Summary statistics

	Mean	Med.	Max.	Min.	S.D.	Skew.	Kurt.	Obs.
Tobin's Q	1.87	1.51	12.10	0.00	1.32	2.92	16.54	1886
ESG	4.02	1.37	92.94	0.00	7.62	5.73	50.06	1886
Transparency	0.35	0.33	0.93	0.01	0.17	0.56	3.20	1886
Reputation	16.03	17.02	22.67	0.00	4.75	-1.98	6.69	1886

Table 3 presents the correlation coefficients, revealing that corporate value positively correlates with corporate reputation. ESG and transparency have a negative relationship with corporate value. There is a positive correlation between ESG and transparency, while ESG performance and reputation show a negative relationship.

Table 3 Pearson's correlation

	Tobin's Q	ESG	Transparency	Reputation
Tobin's Q	1.000			
ESG	-0.084	1.000		
Transparency	-0.069	0.024	1.000	
Reputation	0.206	-0.180	0.081	1.000

Table 4 shows that ESG performance has a positive and significant impact on corporate transparency and a negative fixed effect on reputation. The third column results indicate that only reputation has a positive fixed impact on corporate value. In the third column, corporate value is negatively related to ESG performance. As Yousefian et al. (2023)[18] mentioned, companies can improve their corporate social responsibility through transparency and stakeholder engagement to achieve better outcomes. Mio et al. (2023)[19] indicated that ESG disclosure is crucial for mitigating information asymmetry between companies and stakeholders. Companies that disclose ESG information are more transparent and reduce investment risks, thus aligning with investors' risk aversion preferences. Mohammad and Wasiuzzaman (2021)[9] found a positive correlation between ESG disclosure scores and performance, measured by environmental and ESG disclosure scores. For companies with competitive advantages, increased disclosure enhances performance, whereas increased ESG disclosure can reduce performance for companies without competitive advantages. ESG performance enhances financial performance by lowering equity costs. ESG performance is also viewed as a strategic product companies provide clients to improve their reputation, positive returns, and market share.

Table 4 Results

	Model (1): Transparency	Model (2): Reputation	Model (3): Tobin's Q
ESG	0.000**	-0.040***	-0.002
	(1.803)	(-5.866)	(-1.117)
Transparency			0.155
			(0.547)
Reputation			0.049***
			(6.532)
Controls/industry/Year	Yes	Yes	Yes
Obs.	1467	932	921
R^2	0.025	0.370	0.373

Notes: *<0.1; **<0.05; ***<0.01. In the baseline regression model, this study first performs regression analysis. The dependent variables in Model (1) and Model (2) are transparency and reputation, respectively.

5. Conclusion and suggestion

This paper utilizes data from the A-share market in the new energy industry of the Shanghai and Shenzhen stock exchanges from 2010 to 2020 to empirically analyze the relationship between corporate value, ESG performance, corporate reputation, and corporate transparency. The empirical results show that ESG performance, corporate reputation, and corporate transparency in new energy industry companies mitigate the heterogeneity effect on corporate value. ESG performance positively impacts corporate transparency, which is the opposite of its effect on reputation. This indicates that companies can improve their social value through openness. The greater the ESG performance disclosure, the better the impact on the company.

It is recommended that policies focus on understanding the development status and industry differences in ESG among companies in different sectors and ensure that each company can maximize the balance between value, reputation, and transparency.

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