

The Impact of Corporate ESG Ratings on Debt Financing Ability

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Abstract: During the phase of high-quality development, the significance of the environmental, social, and governance (ESG) performance of firms on their debt financing capability is paramount. This study utilizes a two-way fixed-effects model to investigate the impact of corporate ESG ratings on debt financing ability based on the data of A-share listed companies from 2013 to 2023. It is found that improving corporate ESG ratings can enhance corporate debt financing ability. More specifically, optimizing ESG ratings can further strengthen the ability to finance the debts of enterprises by enhancing corporate value and promoting corporate green innovation. Furthermore, compared with state-owned enterprises, ESG ratings have a more obvious effect on reducing the cost of debt financing for non-state-owned enterprises. Building upon this research, the paper offers comprehensive recommendations for governments, enterprises, and investors. The government should strengthen the standardization of the ESG rating system and promote the disclosure of high-quality ESG information by enterprises to reduce their financing costs; enterprises should pay attention to ESG performance and increase their financing capacity by improving their environmental, social, and governance performance; and investors should incorporate the ESG performance of enterprises into their investment decisions to obtain long-term value.

Keywords: corporate ESG ratings, debt financing ability, two-way fixed effects model

1. Introduction

Recently, national policies have explicitly taken green development as the core content of high-quality development. The report presented at the 20th National Congress of the Communist Party of China emphasized the requirement of “collaboratively promoting carbon reduction, pollution reduction, green expansion, and growth”, highlighting the government's strong emphasis on aligning environmental protection with economic development. Furthermore, the government has introduced a series of guidelines and standards. The State-owned Assets Supervision and Administration Commission of the State Council has issued the “Guidelines for Central Enterprises to Fulfill High Standards of Social Responsibility in the New Era”, outlining the goal for central enterprises to enhance the standardization and maturity of their social responsibility system by 2025, with a focus on deepening the integration of social responsibility into their operations and management. Additionally, the government has formulated the “Corporate Sustainability Disclosure Guidelines - Guidelines for Central Enterprises to Fulfill Social Responsibility to a High Standard”, which requires enterprises to realize a balanced layout in the three dimensions of environment, society, and

governance. The Government persistently advocated for the implementation of relevant policies, guiding enterprises to actively fulfill their social responsibilities and foster synergistic development between the economy and the environment, as well as society and governance.

For enterprises, the Chinese government has placed significant emphasis on green and sustainable development in recent years, implementing a series of policies to incentivize companies to enhance their ESG performance. Within the framework of the "dual-carbon" objective, the government is urging companies to bolster green technology innovation and adopt low-carbon management practices. These policies not only provide companies with a clear direction for development but also encourage them to improve the quality and transparency of ESG disclosure through incentives. ESG ratings serve as crucial indicators of a company's sustainability and play a pivotal role in enhancing its competitiveness and market value.

ESG ratings reflect an enterprise's performance in environmental protection, social responsibility, and corporate governance, all of which directly influence the enterprise's risk profile and the trust of investors. Higher ESG ratings typically signify lower risk and higher credit quality, leading to reduced risk expectations for creditors and subsequently lowering the cost of debt financing for companies.

In conclusion, the impact of corporate ESG ratings on debt financing capability is of significant practical importance. However, further research is needed to explore its heterogeneity, specific mechanisms, and other related aspects. This will not only deepen theoretical comprehension but also offer more actionable recommendations for enterprises, governments, and investors.

Therefore, this study utilizes data from A-share listed companies spanning from 2013 to 2023. Employing a two-way fixed effect model, it empirically investigates the impact of corporate ESG ratings on debt financing ability. The findings indicate a positive relationship between higher corporate ESG ratings and stronger debt financing ability, demonstrating the beneficial influence of corporate ESG ratings on debt financing capability. By delving into intermediary mechanisms, it is deduced that optimizing ESG ratings can further bolster enterprises' debt financing ability by enhancing their value and fostering green innovation. Considering the heterogeneity between state-owned enterprises and non-state-owned enterprises, this study explores this distinction and concludes that ESG ratings play a more pronounced role in reducing the cost of debt financing for non-state-owned enterprises.

2. Literature review

Through the lens of ESG performance, Wong found that enhancing ESG performance can lead to a reduction in the cost of capital[1]. Chen explored the influence of Environmental, Social, and Governance (ESG) performance on green technological innovation[2]. Additionally, Hou Q Y and Zhang suggested that ESG ratings could facilitate enterprises in securing more green financing support, thereby fostering the advancement of research, development, and implementation of green technologies[3]. Zhang and Liu demonstrated that companies with strong ESG performance can enhance disclosure quality and diminish information asymmetry[4]. Yuxin He revealed a significant positive correlation between ESG performance and firm value, aligning with stakeholder theory[5].

Dai and Xue argued that green innovation can enhance firms' debt financing capability by bolstering sustainability and reducing financing costs[6]. Yin highlighted that green credit policies indirectly enhance enterprises' debt financing capacity by lowering financing costs and stimulating green technological innovation [7]. Specifically, green credit policies can alleviate financing constraints for enterprises, particularly those in highly polluting and energy-intensive sectors. Chatterjee and Eyigungor posited that as a business's value increases, its size is likely to grow, thereby strengthening its ability to secure debt financing[8].

Building on existing literature, this paper will examine the impact of firms' ESG ratings on debt financing ability through two pathways: green innovation and market value. In a broader context,

robust ESG performance not only significantly drives enterprises' green technological innovation but also enhances their market value. Higher ESG performance levels are associated with increased green innovation, facilitating easier access to financing support and alleviating financing constraints. Furthermore, enhancing ESG performance can elevate enterprises' market value, garner increased attention from investors and financial institutions, and consequently lower financing costs. As a result, ESG initiatives can effectively mitigate financing constraints by expanding financing opportunities for enterprises through the promotion of green innovation and the enhancement of enterprise value.

3. Research design

3.1. Sample selection and data source

This paper mainly selects the data of A-share listed companies from 2013 to 2023 as the research sample, and the data are processed as follows: samples with missing variables are excluded; ST and ST* industries are screened out. The data, including explanatory variables, explained variables, and control variables, are sourced from Wind Information Co., Ltd.

3.2. Data definition

This paper specifically focuses on examining the influence of firms' ESG ratings on their debt financing ability. To test the hypothesis, a two-way fixed-effects empirical model is constructed to assess causality while controlling for both individual fixed effects and time-fixed effects.

$$D_{it} = \alpha_0 + \alpha * ESG_{it} + \gamma_t + \delta_i + \chi_{it} + \varepsilon_{it}$$

Explanatory variables: The Corporate ESG Index composite score is utilized in this study. The Wind ESG Index composite score comprises management practices and controversial events. The management practices section is further divided into three dimensions: environment, society, and governance, with a total of 29 specific indicators. Companies are categorized into seven grades (CCC, B, BB, BBB, A, AA, AAA) by the Wind ESG rating system based on ESG risks, opportunities in their industry, and their performance relative to peers. The Wind ESG Rating System assigns companies grades ranging from CCC to AAA according to their score range.

Explained variable: Financing constraints are measured using the SA index in this paper to assess the level of corporate financing constraints. If the majority of firms have a size greater than 8.57, a higher SA index indicates lower financing constraints.

Control Variables: Drawing from relevant studies on enterprise debt financing ability, this paper incorporates seven control variables: Rate, Cas, Le, Tangible, Ro, Growth, and Size.

γ_t and δ_i represent time and individual fixed effects, effectively addressing endogeneity concerns.

3.3. Descriptive statistics

Table 1 presents the descriptive statistics of the main variables. Throughout the sample period, a total of 41,114 data points were collected for the ESG of listed companies, with a mean value of 73.16969, a standard deviation of 5.239594, a minimum value of 36.62, and a maximum value of 92.93. For the SA index, 40,913 data points were collected, with a mean value of -3.842972, a standard deviation of 0.3116671, a minimum value of -5.727637, and a maximum value of -0.287821.

Table 1: Variable descriptive statistics.

Variable	Obs	Mean	Std. dev.	Min	Max
ESG	41,114	73.16969	5.239594	36.62	92.93
SA	40,913	-3.842972	.3116671	-5.727637	-.287821

Table 1: (continued).

Rate	40,138	2.215608	3.24213	-5.131645	135.603
Cas	40,139	.2313704	.6218709	-25.04337	52.4722
Le	40,913	.4401977	.9920565	-.194698	178.3455
Tangible	40,910	.1954868	.1576301	.1576301	.954179
Ro	40,913	.02576	.6627789	-48.31592	108.3657
Growth	39,277	.2269466	6.216225	-1.444936	944.0996
Size	40,914	22.29477	1.510143	.525907	983.4907

4. Research design

4.1. Benchmark regressions

Table 2 illustrates the impact of corporate ESG ratings on debt financing ability. The results indicate a significant and positive correlation between ESG ratings and the corporate SA index at the 1% level, suggesting that enhancing corporate ESG ratings can effectively enhance the corporate SA index and subsequently alleviate corporate financing constraints.

Table 2: Basic regression results.

variant	SA
ESG	0.0008*** (0.00)
Rate	0.0033*** (0.00)
Cas	-0.0037*** (0.00)
Le	0.0105*** (0.00)
Tangible	0.0018 (0.00)
Ro	0.0113*** (0.00)
Growth	-0.0000 (0.00)
Size	-0.0094*** (0.00)
_cons	-3.7222*** (0.02)
Firm	Yes
Year	Yes
Observation	38210
Adjusted R ²	0.9593

Note: Robust standard errors of the regression coefficients are presented in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

4.2. Mechanism testing

Table 3 displays the findings regarding the mechanisms of Tobin's Q-value, the number of patents related to green inventions, and green utility model patents in the relationship between ESG ratings and enterprise debt financing capacity. Tobin's Q represents an enterprise's market value-to-book value ratio, reflecting its market valuation level. A higher Tobin's Q indicates a higher market value relative to the book value of assets. The number of green invention and utility model patents signifies an enterprise's green innovation capability.

Table 3: Mediating effects regression results.

variant	(1) Tobin's Q-value	(2) Number of patents on green inventions	(3) Number of green utility model patents
ESG	0.0200* (0.01)	0.0182*** (0.01)	0.0132* (0.01)
Rate	0.3941 (0.32)	0.0174*** (0.00)	0.0045 (0.01)
Cas	-3.215 (3.12)	0.0218 (0.02)	-0.0589 (0.05)
Le	1.7800*** (0.31)	0.0018 (0.00)	0.0131* (0.01)
Tangible	-0.9466 (0.77)	0.6592** (0.33)	0.1470 (0.28)
Ro	2.6539* (1.40)	-0.0056 (0.10)	0.0149 (0.03)
Growth	0.0046 (0.01)	0.0004 (0.00)	-0.0005 (0.00)
Size	-2.5226*** (0.69)	0.0530*** (0.05)	0.4043*** (0.06)
_cons	56.5722*** (14.77)	1.3175*** (1.32)	-8.8606*** (1.57)
Firm	Yes	Yes	Yes
Year	Yes	Yes	Yes
Observation	38210	38149	38149
Adjusted R ²	0.9593	0.8188	0.5962

Note: Robust standard errors of the regression coefficients are presented in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

4.3. Heterogeneity test

As shown in Table 4, the regression coefficient of corporate ESG ratings for state-owned enterprises is 0.0002, which is not statistically significant. In contrast, for non-state-owned enterprises, the regression coefficient of ESG is 0.0010, significant at the 1% level. This suggests that the mechanism is more pronounced in non-state enterprises, with a larger regression coefficient closer to the original benchmark coefficient (0.0008***). This indicates that the mitigating impact of corporate ESG ratings on debt financing constraints is more evident in non-state enterprises.

In conclusion, ESG ratings exhibit a more significant impact on reducing debt financing costs for non-state-owned enterprises. This is primarily attributed to the fact that non-state-owned enterprises

often lack government backing and rely more on external financing. Improved ESG performance can mitigate financing constraints, attract investors, enhance corporate value, and stimulate green innovation, thereby effectively lowering financing expenses. On the other hand, state-owned enterprises benefit from government subsidies and favorable terms, limiting the potential for debt financing cost reduction even with better ESG performance. Moreover, state-owned enterprises face stricter policy and social responsibility requirements, diminishing the value effect of enhanced ESG responsibilities compared to non-state-owned enterprises.

Table 4: Heterogeneity test regression results.

variant	state-owned enterprises	non-state-owned enterprises
ESG	0.0002 (0.00)	0.0010*** (0.00)
Rate	0.0053*** (0.00)	0.0025*** (0.00)
Cas	-0.0052*** (0.00)	-0.0037*** (0.00)
Le	-0.0213*** (0.01)	0.0098*** (0.00)
Tangible	-0.0093 (0.01)	0.0283*** (0.01)
Ro	0.0042 (0.01)	0.0103*** (0.00)
Growth	-0.0025*** (0.00)	0.0000 (0.00)
Size	0.0371*** (0.00)	-0.0296*** (0.00)
_cons	-4.7546*** (0.03)	-3.2833*** (0.02)
Firm	Yes	Yes
Year	Yes	Yes
Observation	12653	24962
Adjusted R ²	0.9693	0.9588

Note: Robust standard errors of the regression coefficients are presented in parentheses. *, **, and *** denote statistical significance at the 10%, 5%, and 1% levels, respectively.

5. Research conclusions and recommendations

5.1. Research conclusion

This study focuses on A-share listed companies and utilizes corporate financial data from 2013 to 2023 to investigate the impact of corporate ESG ratings on debt financing ability using a two-way fixed effects model. The findings suggest that enhancing corporate ESG ratings can alleviate financing constraints, thereby improving debt financing capability. Furthermore, it is revealed that corporate ESG ratings influence debt financing ability through two mediating mechanisms: corporate value and Green Innovation. Specifically, optimizing ESG ratings can boost corporate value, drive green innovation, and subsequently enhance debt financing ability. Notably, the impact of ESG ratings on reducing debt financing costs is more pronounced for non-state-owned enterprises compared to state-owned enterprises.

5.2. Research conclusion

The government should enhance the establishment of the ESG system, refine relevant laws and regulations, and advocate for a market-oriented resource allocation mechanism. By reducing direct intervention in enterprises and leveraging market feedback to guide their performance in environmental, social responsibility, and governance aspects, overall operational efficiency and financing capacity can be enhanced. Furthermore, the government should implement a comprehensive system of rewards and penalties to incentivize enterprises to proactively enhance their ESG performance. Providing policy support, such as tax incentives and financial subsidies, to exemplary enterprises can further advance sustainable development initiatives.

Enterprises are encouraged to embed ESG principles into their strategic planning and increase investments in environmental protection, social responsibility, and corporate governance. By enhancing ESG performance, enterprises can effectively lower financing costs and alleviate financing constraints. Simultaneously, establishing robust corporate governance structures and enhancing transparency and information disclosure quality can bolster investor and creditor trust.

Investors are advised to consider ESG performance as a crucial factor in investment decision-making, particularly focusing on technology sector companies and small to medium-sized enterprises with high ESG ratings. Strong ESG performance mitigates investment risks and yields sustainable long-term returns. By supporting companies that actively fulfill their social responsibilities, investors can contribute to their enduring growth while potentially realizing higher investment returns.

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