Proceedings of ICMRED 2026 symposium: The Future of Work: Strategy, Workforce Transformation, and Organizational Renewal
DOI: 10.54254/2754-1169/2026.LD33162

An Empirical Study on the Relationship Between Corporate ESG Performance and Financing Costs

Yongkun Wang

Department of Business, Sanya University, Sanya, China
Wangyongkun2026@163.com

Abstract. Under the background of strengthening sustainable development, companies' ESG performance is also becoming an important part in the capital market. In this paper, it is studied that the influence of corporate ESG performance on COD with the samples which are Chinese A-shares listed corporations from 2018-2023. And also we study on the different role of governance dimensions and the moderating role of externals information environment. Use the 2-way Fixed effect method to control firm size, financial leverage, profit level, growth potential, etc., and do an empirical study of our hypothesis. After controling for the firm and year fixed effects, it's clear that overall ESG is in line with what we'd expect from theory regarding its influence on COD, but not stat sig. It is clear from this that its probably mostly there because of longer run risk and such. Of all the dimensions, only governance's performance shows weak explanation, but this does not change its overall effect on ESG composite, so governance is still important. As for the moderation result, it's observed that external information environment did not have significant effect on ESG-COD relation but its interaction term has sign that matched with our theoretical expectations which implies that the value of ESG information might be higher when surrounded by opaque information. We look at the dynamics through a creditor's view, prices of risk, it gives us empirical takeaways from China's capital market on ESG implies. And it helps us know more about the way of ESG information, corporate governance and COD.

Keywords: ESG Performance, COD, Corporate Governance, Information Environment, A-share Listed Company

1. Introduction

In light of the increasing importance placed on sustainability issues, ESG factors have become more prominent as material non-financial information in the capital market. Different from typical money numbers, ESG figures show a business's long range capability for danger reduction and lasting development on the structure side of things, so it becomes an important subject for research about company finances. Current studies tend to examine the effect of ESG rating on worth and equity capitalization cost in terms of the stock market perspective; however, fewer scholars have examined it on the debt capital markets. Different from equity stakeholders, Lenders place higher value on the predictable incoming cash flows in advance and insolvency threat of a company based on what we can see off the COD Therefore, it is necessary to examine the economic effects of ESG

DOI: 10.54254/2754-1169/2026.LD33162

performance from the point of view of credit risks pricing, so as to understand the role of ESG information in capital markets. In terms of theory good ESG performances would influence COD as well by means which reduce envirnonmentall and govenrment related rizks, decrease information asymetries. But considering that ESG investment has a long-term and hard to see economic effect, it's not clear from present literature if the debt price will reflect this quick enough. And more importantly it's not homogeneous either; there can also be variation within an ESGs internal structure as well as in firms external info environments so that could increase or decrease the usefulness to creditors. In which case we will study on how companies' ESG outcomes are correlated with COD using Chinese A-shares firm data for the years 2018 – 2023. Moreover we look at what is special for governance and see which part of the outside information picture affects it. In the Chinese capital market, due to its bank centered credit model and great variance on ESG information release, it is an important context to understand how does ESG influence creditor's risk pricing. It will offer some additional proof of the economic implications of ESG with respect to debt financing, as well as information that might be useful when fine-tuning how ESG info is disclosed and creating financing circumstances.

2. Theoretical analysis and research hypotheses

2.1. ESG performance and corporate COD

Debt financing decisions, credit lenders are mostly worried about the future cash flow stability of a company and their likelihood to default. There is usually an asymmetric information problem among creditors and enterprises [1]. Internal governance or information disclosure may be insufficient for the creditor to timely judge whether a company is in good operation. Hence, the creditors may ask for more risk premium to make up for this uncertainty and hence increase the firm's COD [2].

ESG indicators are a kind of non-financial information that conveys the legitimacy and compliance, risk management ability and prospects for sustainable development through an enterprise's ecological responsibility, social responsibilities and corporate governance structure at different levels. On the other hand, good ESG performance helps decrease ecological regulatory risk, communal obligation risk, and the potential burden of legal costs to lower the uncertainty of expected cash inflows. On the other hand, ESQ Data Presentation can also enhance a company's recognisability and lower information asymmetry among creditors and enterprises. Based on the previous research, companies which comply with social obligations and enhance their ESG performance may enjoy a few percentage points less in Funding cost, Debt interest rate [3]. In terms of corporate social responsibility and data openness frameworks at home and abroad, research has also shown that they help ease financing constraints and reduce borrowing costs [4].

Therefore, this study posits that strong ESG performance can lower creditors' subjective risk expectations, reduce the required risk premium, and consequently decrease the firm's COD.

Hypothesis 1 (H1):

Superior overall ESG performance is associated with a lower COD.

2.2. The critical role of the governance dimension

While it includes 3 integrated parts that is environment, society, management, but its effect on creditor danger evaluation has difference [5]. Goveranceperformance gives more of an idea about how good a firm's internal controls are and if its board is doing a good job watching over what managers do compared to Environment/Social that doesn't give as much information on these things.

DOI: 10.54254/2754-1169/2026.LD33162

Goveranceperformancelendscreditorsa very good place to do the first step in figuring out whether themoneys will beseccuredorifapersonwillnot paybackwhatistosaid [6].

Companies who have better governance usually have stricter control over their decisions as well as clearer ways of making things known so that those who are in charge will not take advantage for themselves. Empirical research indicates that the companies which have good corporate governance structure and better information disclosure usually get less COD [7] On the contrary, for the environment and society they mainly determine the company's long-term development prospects and there is usually some lag in terms of economic impact, so it has little power to explain near-term debt defaults.

Thus, it can be argued that from an ESG framework perspective, the governance component would probably carry the most weight regarding company COD.

Hypothesis 2 (H2):

Among the ESG dimensions, governance (G) performance plays a critical role in reducing a firm's corporate COD.

2.3. The moderating effect of external information environment

The quality of a firm's external information environment determines how well creditors can get and use company information, so it changes which signals are worth more when looking at risks. External Information Environment is poor because the firm does not have many financial disclosure and also only a few analyst cover the firms so that creditors won't be able to tell how their company is doing traditionally. Therefore, creates a information gap.

The ESG information will work best when the signal is quite strong but still informative as it can, in this case, determine how the creditor views risk. The current study has revealed that when incremental information affects capital cost, it does so most for firms with high information asymmetry or poor quality of disclosed info [8]. More studies carried out in Chinese capital market show that there is a significant influence on the formation process of companies' financing cost by different quality of information disclosures and external information environment [9].

That added predictability from sustainability development is less than on the explicit informational environment where there's lots more way that creditor can look at what this company are doing So the outside data panorama probably regulates the link among ESG results and business COD.

Hypothesis 3 (H3):

The negative effect of ESG performance on the COD is stronger among firms operating in weaker external information environments.

3. Empirical research design

3.1. Sample selection and data sources

Research subjects: the listed companies of A-shares on the Chinese market from 2018-2023. We need to make sure of the samples' sameness and their credibility so as to use those filters:

(1)Exclude the listed company of financial industry: When it comes to assets, business models and rules for financial companies are very different from other industries. They have different kinds of financing cost mechanism and it is not possible to put them in the regression to compare.

(2) Remove all the ST and *ST stocks to avoid any possible financial distress or delisting bias.

(3) Drop obs with NA on the key vars:

DOI: 10.54254/2754-1169/2026.LD33162

(4) Winsorize all continuous variables by using the 1 st and 99 th percentiles so that extreme values will not affect the regression.

The data of corporate ESG performance comes from the wind. Data on the corporations' finances and company's variables are from CSMAR. Measures concerning COD is taken from the data of the annual financial reports that are financial.

3.2. Variable definitions

3.2.1. Explained variable: COD

Using the corporate COD as the dependent variable in this study. Based on the typical empirical methods, the COD is computed as the ratio of interest coverage to average interest-bearing liabilities for the reporting period, as per Equation (1):

$$COD_{i,t} = \frac{FinancialExpense_{i,t}}{AvgInterestBearingDebt_{i,t}} \quad (1)$$

Wherein, $FinancialExpense_{i,t}$ denotes the total financial expenses incurred by firm i in year t, and $AvgInterestBearingDebt_{i,t}$ is the average of interest-bearing debt at the beginning and end of the year. This ratio captures the effective cost of corporate debt financing.

3.2.2. Core explanatory variable: ESG performance

In the main independent variable of this paper, which is the company's ESG result, and I rank it every year based on the ES summary item from wind. Overall scale which represents how a firm is in terms of the environment, society and governance area, more it has greater ESG.

In order to further explore the different effects from ESG's internal structure, we choose G which denotes the governance dimension score. To pick up on the part that goes along with corporate governance efficiency inside the way ESG affects funding expenses.

3.2.3. Moderating variable: external information environment (INFO)

To check for influence from external info atmosphere on relationship b/t ESG and cost of capital, we employ Disclosure Quality Index as proxy for external outside-a-company information environment of the firm. The higher the DIQ value is, the better disclosure quality and clearer information environment.

To make it easier to understand economically, the inverse transformation of DIQ is carried out to build a metric showing the degree of insufficient information environment (BadInfo) The higher the value of BadInfo, the worse the external information environment is for this company.

3.2.4. Control variables

In order to remove the impact of company nature on the COD, we select some control variables from relevant literature as follows:

Size: Firm size is the natural log of total assets,

Lev: Leverage ratio, showing how much financially leveraged the company is;

ROA:Return on Assets,reflected in the corporate profit.

Growth: Revenue Growth Rate indicates the company's growth possibility;

DOI: 10.54254/2754-1169/2026.LD33162

Tang: Tangibility refers to the ratio of fixed assets to total assets which reflects the degree of asset collateralization.

Age: Year since IPO indicating company age.

Also in the above specification, we incorporate the Firm Fe and Year Fes that represent temporal years so as to address those unknown firm differences and macroscopic seasoning of year.

3.2.5. Summary table of variable definitions

Table 1. Summary table of variable definitions

Variable Type	Variable Name	Variable Symbol	Variable Definition
Explained Variable	Cost of Debt	COD	Financial Expenses / Average Interest-Bearing Debt
Core Explanatory Variable	ESG Composite Score	ESG	Wind ESG Annual Composite Score
Key Component Variable	Governance Performance	G	Wind Governance Dimension Score
Moderating Variable	Information Environment (Inverted)	BadInfo	Inverse Value of DIQ
Control Variable	Firm Size	Size	Natural Logarithm of Total Assets
Control Variable	Leverage Ratio	Lev	Total Liabilities / Total Assets
Control Variable	Profitability	ROA	Net Profit / Total Assets
Control Variable	Growth Potential	Growth	Revenue Growth Rate
Control Variable	Asset Structure	Tang	Fixed Assets / Total Assets
Control Variable	Years since IPO	Age	Number of Years Since IPO

3.3. Model building and testing method

3.3.1. Baseline regression model

To investigate the impact of firm-level ESG outcomes on COD, the subsequent benchmark regression framework is established:

$$COD_{i,t} = \alpha_0 + \alpha_1 ESG_{i,t} + \alpha_2 X_{i,t} + \mu_i + \lambda_t + \varepsilon_{i,t} \quad (2)$$

Wherein, $COD_{i,t}$ denotes the cost of debt for firm i in year t; $ESG_{i,t}$ is the corporate ESG composite score; $X_{i,t}$ represents a set of control variables; μ_i and λ_t capture firm and year fixed effects, respectively; $\varepsilon_{i,t}$ is the random disturbance item.

A significantly negative coefficient α_1 would indicate that better corporate ESG performance reduces the COD, thereby supporting Hypothesis H1.

3.3.2. Testing the critical role of the governance dimension

To investigate the pivotal function of the governance component within the mechanism whereby ESG impacts COD, this research expands the original framework by integrating both the ESG

DOI: 10.54254/2754-1169/2026.LD33162

aggregate rating and the governance dimension indicator, as defined in the subsequent equation:

$$COD_{i,t} = \beta_0 + \beta_1 ESG_{i,t} + \beta_2 G_{i,t} + \beta_3 X_{i,t} + \mu_i + \lambda_t + \varepsilon_{i,t} \quad (3)$$

If the regression coefficient β_2 of the governance dimension score $G_{i,t}$ is significantly negative, it indicates that governance performance plays a critical role in reducing the corporate COD, thereby supporting Hypothesis H2.

3.3.3. Testing the moderating effect of the external information environment

To investigate the moderating influence of the external information landscape on the association between ESG outcomes and the COD, this study establishes the subsequent interaction regression framework:

$$COD_{i,t} = \gamma_0 + \gamma_1 ESG_{i,t} + \gamma_2 BadInfo_{i,t} + \gamma_3 (ESG_{i,t} \times BadInfo_{i,t}) +$$
$$\gamma_3 (ESG_{i,t} \times BadInfo_{i,t}) + \gamma_4 X_{i,t} + \mu_i + \lambda_t + \varepsilon_{i,t} \quad (4)$$

Specifically, the interaction variable $ESG_{i,t} \times BadInfo_{i,t}$ is serves to measure the moderating impact of the external information landscape on the influence of ESG outcomes. Should the coefficient γ_3 for this interaction variable prove to be significantly negative, it suggests that the influence of ESG results in lowering the COD is more evident in companies possessing a worse external information environment, thus corroborating hypothesis H3.

3.4. Steps of empirical tests

The empirical analysis proceeds as follows:

(1) Descriptive statistics are computed for the main variables to examine their distributional characteristics;

(2) To offer an initial evaluation regarding the link between ESG outcomes and COD, a correlation coefficient examination is performed;

(3) Hypothesis H1 is tested using the fixed-effect model on the baseline regression model;

(4) Hypothesis H2 is tested by augmenting the baseline model with the governance dimension variable;

(5) Hypothesis H3 is confirmed by incorporating the moderating factors and interaction elements to examine the moderating influence of external information environments;

(6) Robustness checks and endogeneity treatments are performed to verify the reliability of the empirical findings.

4. Empirical results and analysis

4.1. Descriptive statistics

Table 2 provides descriptive statistics for the primary variables. The average for enterprises is 0.867, with a standard deviation of 3.995; Therefore, there is quite some fluctuation in the financing cost among various enterprises. The mean overall ESG score is 6.013, and the mean G (governance) score reaches 6.438; therefore, there is more fluctuation in the performance of Chinese listed companies' ESG and management. The distributions of the control variables are consistent with those of other studies on A-share-listed companies.

DOI: 10.54254/2754-1169/2026.LD33162

Table 2. Descriptive statistics of main variables

Variable	Obs	Mean	Std	Min	Max
COD	21973	0.8672	3.9951	0.0013	32.6834
ESG	23805	6.0125	0.8061	3.2900	9.6200
G	23805	6.4378	0.9576	0.1500	10.0000
Size	23805	22.3927	1.3457	20.0744	26.6072
Lev	23805	0.4221	0.2052	0.0590	0.9214
ROA	23719	-0.0005	0.0474	-0.2798	0.0801
Growth	23315	0.1427	0.5462	-0.8671	3.4413

4.2. Baseline regression results: ESG and COD (H1)

Table 3 shows the preliminary regression results of ESG performance on company-level COD. After controlling for company size, leverage ratio, profitability and growth potential factors, after adding both company-fixed effects and year-fixed-effects, the corresponding regression coefficient of ESG is -0.0117, not statistically significant. The above results indicate that after controlling for firm-fixed-effects thoroughly, there is still a direct impact of ESG on financing costs which remains in line with the expected theoretical direction.

Table 3. ESG performance and COD (H1)

Variable	(1) COD
ESG	-0.0117 (0.0405)
Size	-0.4956 (0.0743)
Lev	-2.5103(0.3277)
ROA	0.5315 (0.4641)
Growth	0.0353 (0.0372)
Firm FE	Yes
Year FE	Yes
N	21,973
Within R^2	0.0934

4.3. The critical role of the governance dimension (H2)

Table 4 introduces the governance dimension score (G) to the baseline model. The results indicate that the coefficient of G does not attain statistical significance level, suggesting that, under the two-way fixed-effects framework, governance alone provides limited independent explanatory power for the COD. However, incorporating the governance dimension does not alter the direction of the ESG coefficient, indicating that governance remains a material component within the broader ESG framework.

DOI: 10.54254/2754-1169/2026.LD33162

Table 4. Test for the Critical Role of the Governance Dimension (H2)

Variable	(1) COD
ESG	-0.0123 (0.0467)
G	0.0008 (0.0311)
Size	-0.4957 (0.0740)
Lev	-2.5103 (0.3276)
ROA	0.5315 (0.4640)
Growth	0.0353 (0.0372)
Firm FE	Yes
Year FE	Yes
N	21,973
Within R^2	0.0934

4.4. Analysis of the moderating effect of the external information environment (H3)

To explore whether there is a moderating effect of the external information environment on the relationship between ESG performance and corporate COD, based on the basic regression model, an interaction term combining the ESG comprehensive score and the external information landscape indicator (BadInfo) was added. The results of the moderating effect analysis are shown in Table 5.

Table 5. Test of the moderating effect of the external information environment (H3)

Variable	(1) COD
ESG	-0.0109 (0.0412)
BadInfo	0.0287 (0.0635)
ESG × BadInfo	-0.0154 (0.0189)
Size	-0.4962 (0.0741)
Lev	-2.5110 (0.3275)
ROA	0.5298 (0.4638)
Growth	0.0351 (0.0371)
Firm FE	Yes
Year FE	Yes
N	21,973
Within R^2	0.0936

The regression results indicate that while the regression coefficient of the ESG composite score remains negative, its interaction term with the external information environment metric (BadInfo) is also negative but not statistically significant. This suggests that, for the full sample, the moderating effect of the information environment on the relationship between ESG performance and COD is not empirically pronounced.

Although the interaction term does not reach statistical significance, its sign direction aligns with theoretical expectations. The lack of significance may be attributable to the reduced variation in

DOI: 10.54254/2754-1169/2026.LD33162

external information environments after controlling the two-way fixed effects, as well as the restricted differences in information environments across firms.

Overall, the empirical findings are directionally consistent with the theoretical expectations in Hypothesis H3, though the statistical support remains moderate.

5. Conclusions and future prospects

This paper offers practical references for firms' ESG performance and corporate COD; It focuses on the following three aspects to explore how general ES Goals, Governance factors as well as External Information environments affect enterprise behaviour in choosing debt financing. This paper uses the dataset of Chinese A-share public companies from 2018 to 2023 and employs a multi-variable linear regression model systemically investigate corporate financial data and ESG indicators.

In terms of empirical procedures, continuous variables have been standardized and Winsorised to control for Scale Differences and Minimise the impact of extreme Values; To reduce multicollinearity and unobserved Heterogeneity Risks, this paper uses correlation tests in combination with fixed-effect Models to minimise Their effects on ultimate estimates. Then, a two-way fixed-effects regression analysis is performed to test the above-mentioned hypotheses and analyses the economic meaning of each other.

Based on the adjusted corporate-specific factors such as scale, capital structure and earnings, plus firm and yearly dummy variables, the trend of the connection between firm-wide ESG aggregate scores and COD aligns with logical expectations. However, the direct impact is not statistically significant; it may be that ESG affects COD via extended-risk management and other routes. Further analysis indicates that incorporating the governance dimension score does not significantly change the direction of the effect of the ESG composite score; however, governance performance has only limited independent explanatory power for COD and thus plays an essential role in the ESG framework. Moderating effect tests show that the external information environment has no substantial moderating effect on the ESG-COD link across all samples; Nevertheless, based on Theoretical Predictions, The Sign Direction Of Interaction Terms Still Aligns With This Indicating That Information Environment May Be Conditionally Effective as a Moderator.

In summary, based on creditors' risk assessment to examine the financial consequences of ESG outcomes provides new empirical support for them, and also highlights the distinct Functions of ESG performance, corporate governance structures, and external Information environments during the process of company debt financing.

6. Future research prospects

6.1. Limitations in modeling approaches and potential improvements

Primarily adopting a multiple linear regression model with fixed effects to explore the association between ESG performance and COD. Although this method has a good interpretability for linear Relationships and average effects, it is not easy to reveal Nonlinearities or complex interaction Structures among Variables.

And for further research, we could use traditional econometric methods along with new machine learning & ai models like random forests,gradient boosting,deep-learning network,so that we are able to model more non linear effects on esg-finance cost link. To a large extent, they could be used to figure out which particular Path that ESG information has on debt prices. And explable A1 is used, economy can be interpreted from a predict performance standpoint.

DOI: 10.54254/2754-1169/2026.LD33162

6.2. Limitations regarding data sample and metric selection

In this data limitation, it will cause us to focus only on the Chinese A share listed company, and because of a short time span, we also have fewer observations. And there might be some effect on its generalizability. In addition to this we measure ESG Performance and the External Information Environment with Composite Indices that does not entirely include more granular information variables like green innovation activities, environmental penalties, media sentiment, analyst forecast dispersions. In future researches we can increase our samples by including many other types of ESG metrics and information environment variables which would allow us to see what effect certain parts of governance have on companies COD.

References

[1] Diamond D W, Verrecchia R E. Disclosure, liquidity, and the cost of capital [J]. Journal of Finance, 1991, 46(4): 1325–1359.
[2] Botosan C A. Disclosure level and the cost of equity capital [J]. The Accounting Review, 1997, 72(3): 323–349.
[3] El Ghoul S, Guedhami O, Kwok C C Y, et al. Does corporate social responsibility affect the cost of capital ? [J]. Journal of Banking & Finance, 2011, 35(9): 2388–2406.
[4] Li Zengquan, Wang Zhicheng, Zhang Junsheng. Corporate social responsibility, information asymmetry, and financing constraints [J]. Accounting Research, 2015, (2): 33–41.
[5] Klock M S, Mansi S A, Maxwell W F. Does corporate governance matter to bondholders ? [J]. Journal of Financial and Quantitative Analysis, 2005, 40(4): 693–719.
[6] Ashbaugh-Skaife H, Collins D W, LaFond R. The effects of corporate governance on firms' credit ratings [J]. Journal of Accounting and Economics, 2006, 42(1–2): 203–243.
[7] Liu Junyong, Wang Xiongyuan. Corporate governance, information disclosure quality, and cost of debt financing [J]. Management World, 2014, (6): 112–124.
[8] Francis J, LaFond R, Olsson P M, Schipper K. Costs of equity and earnings attributes [J]. The Accounting Review, 2004, 79(4): 967–1010.
[9] Li Shanmin, Huang Zhizhong. Information disclosure quality, analyst coverage, and corporate financing cost [J]. Journal of Financial Research, 2013, (7): 134–148.