



A Study on the Impact of ESG Disclosure on Corporate Credit Availability - A Case Study of Chinese A-share Listed Companies in Shanghai and Shenzhen

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Abstract. This study explores the impact of ESG disclosure on corporate credit availability and analyzes the moderating role of property rights heterogeneity in this relationship, using a sample of Chinese A-share listed companies in Shanghai and Shenzhen from 2009 to 2023. Based on signaling theory, it is found that the quality of corporate ESG disclosure significantly and positively affects its overall credit size, short-term credit and long-term credit availability, indicating that ESG disclosure enhances the ability to obtain credit resources by alleviating the information asymmetry between banks and enterprises and enhancing the banks' trust in the sustainable development ability of enterprises. Further analysis reveals that property rights heterogeneity has a differential impact on the role of ESG: ESG disclosure promotes long-term credit availability significantly more strongly in private enterprises than in state-owned enterprises, reflecting the diminishing marginal utility of ESG disclosure in state-owned enterprises due to policy support and information advantages. This study provides empirical evidence for the economic consequences of ESG disclosure and policy implications for optimizing credit resource allocation and promoting corporate ESG practices.

Keywords: ESG disclosure, Credit Availability, Property Rights Heterogeneity.

1 Introduction

For a long time, China has been suffering from serious financing constraints, especially in terms of strong credit discrimination. According to Zhong Kai et al., the information asymmetry between businesses and the outside world is the primary cause of these loan discriminations, which impede the growth of businesses [1]. One of the reasons for such information asymmetry is that firms tend to disclose financial information while ignoring non-financial information.

In recent years, the popularity of ESG (Environmental, Social, and Governance) disclosure has complemented the non-financial information of firms. Wang et al. argue that an approach to investment and valuation should focus on ESG. ESG stands for environmental, social, and governance factors, emphasizing a company's environmental impact, social responsibility and governance practices rather than focusing solely on

traditional financial metrics [2]. These non-traditional metrics are key signals that convey a company's ability to operate sustainably and its long-term risk level. At the same time, Chinese listed companies are facing challenges in the context of globalization, and these listed companies have a greater need to align themselves with more international rules in the current complex context of globalization. Evaluation of companies' ESG performance is crucial for establishing long-term competitiveness and market position in the context of global economic integration and sustainable growth. It can also lessen the financial limitations faced by Chinese listed companies [3].

A large body of literature has explored the concepts related to ESG single disclosure on corporate credit availability. In terms of environmental information disclosure, Ni Juan et al. find that environmental disclosure by heavy-pollution listed companies significantly enhances credit availability while reducing corporate financing costs [4]. In terms of social responsibility aspects and corporate governance information, most scholars believe that corporate social responsibility information and corporate governance information can effectively attenuate the degree of information asymmetry and increase credit availability [5, 6]. However, few scholars have looked at ESG as a whole to conduct research on credit availability.

China has been promoting ESG disclosure by listed companies in recent years. In 2018, the Securities and Futures Commission (SFC) revised the "Code of Governance for Listed Companies", which requires listed companies to integrate ESG into their corporate development strategies and builds a basic framework for the disclosure of ESG information. In June 2022, the CBIRC issued the Green Finance Guidelines for the Banking and Insurance Industry. For the first time, these guidelines proposed that banking and insurance institutions should focus on ESG risks and incorporate ESG into their overall risk management processes. ESG standards have gradually been incorporated into bank credit policies and have become an important part of bank risk management. In order to investigate whether incremental ESG information can increase the credit availability of firms, this study will use the ESG data of Chinese listed companies to investigate whether good ESG disclosure increases the credit availability of firms, expanding the value of ESG information.

2 Literature Review and Hypothesis Formulation

For commercial banks and other external financial institutions, the priority in credit decision-making is the prevention and mitigation of credit risks. One of the fundamental causes of credit risk derives from information asymmetry. When a bank evaluates a firm and makes a lending decision, information is critical in assessing the creditworthiness of the borrower. The lack of credit information leads to inefficient allocation of information, which reduces the availability of credit to firms. Gao et al.'s study of China's credit market found that the lack of an effective credit information system resulted in high transaction costs for firms' loan contracts. In response, China's banking sector turned to non-market mechanisms such as strict credit rationing to firms [7]. However, due to limited credit resources, credit rationing reduces the effective utilization of credit resources and thus reduces credit availability. Simultaneously, the discretionary nature

and selective opacity inherent in corporate disclosures of ESG information exacerbate bank-firm information asymmetry, thereby amplifying systemic credit misallocation [8]. Establishing a good information transmission medium is essential to improve the availability of credit to enterprises.

According to signaling theory, a company's ESG disclosure creates a good social image of a company that actively undertakes environmental and social responsibility, while having good corporate governance mechanisms. ESG disclosure sends positive signals to stakeholders, thereby increasing the company's transparency and reputation and reflecting the company's sustainable development capability [9]. ESG is different from traditional financial information. Therefore, corporate disclosure of ESG information can provide market participants with incremental information beyond financial information, reducing information asymmetry within and outside the firm [10]. When the information asymmetry between banks and firms is reduced, the less credit risk banks face. Consequently, it is commonly accepted in academic circles that ESG disclosure facilitates enterprises in securing increased credit funding by mitigating information asymmetry. Xiaodong Yang et al. found that ESG disclosure improves enterprises' credit financing by enhancing information transparency, optimizing supplier concentration, lowering operational risk, and reducing management myopia [11]. Yi-cheng Kuai et al. used Chinese A-Share listed companies and found that ESG disclosure can reduce information asymmetry, thus reducing the problem of credit misallocation and improving credit availability [12]. Other scholars have also explored trade credit and found that firms with high-quality ESG information disclosure can more easily obtain trade credit from suppliers and customers [13]. In summary, good performance of firms in ESG information can provide more non-financial information, reduce the information asymmetry between internal and external firms, and thus reduce the credit risk of external institutions, and finally increase the availability of credit to firms.

H1: Firms' good ESG performance can positively increase their credit availability

For a long time, China's credit market has discriminated against the property rights of enterprises. This discrimination is reflected in the fact that banks tend to lend to SOEs(State-Owned Enterprises) for longer periods and on a larger scale. The reasons for this are, first, that SOEs naturally have political advantages as well as higher social status. According to Wu Long et al. when SOEs are in financial difficulties, the government usually gives financial subsidies [14]. Therefore, when banks lend to SOEs, they face less credit risk. Second, SOEs have better institutional advantages. Because the Chinese banking sector has long served policy objectives, credit resources are tilted toward SOEs [15]. In addition, it is easier for banks to obtain relevant information about SOEs when they establish relevant contacts with SOEs. Brandt&Li found that even controlling for firm size and profitability, the loan rejection rate of private firms is still significantly higher than that of SOEs [16]. To sum up, it is easy to create credit discrimination against private firms. In this context, the disclosure of ESG information by SOEs may be more redundant for increasing credit availability, while the disclosure of ESG information by non-SOEs should have a more significant effect on increasing credit availability. In summary, this paper proposes the hypothesis.

H2: Good ESG disclosure by private firms improves credit availability compared to state-owned firms.

3 Study Design

3.1 Sample and Data Sources

This paper uses China's A-share listed companies in Shanghai and Shenzhen from 2009 to 2023 as the sample selection. The selection is determined for the following main reasons: i. During this time, international information on ESG has been released and China's ESG system has been initially developed. Second, the long time span allows for a more holistic observation of how changes in domestic companies' ESG performance affect credit availability. Third, China's rating agencies have introduced well-established rating standards and processes. The sample is processed as follows: ST and ST*-listed companies are excluded, financial industry companies are excluded, relevant financial statement information is consolidated, all financial information, non-financial information, and ESG information are taken as year-end values, and all continuous variables are deflated up and down by 1%. ESG ratings are sourced from the WIND database, while all other ratings are derived from the CSMAR database.

3.2 Model Design and Interpretation of Variables

To test the effect of ESG disclosure on credit availability, the following regression model is constructed.

Y is the explanatory variable, α is the intercept term, β is the coefficient, and Control is the control variable.

$$Y_{it} = \alpha + \beta_1 ESG + \beta_2 Control + \varepsilon_{it} \quad (1)$$

$$Y_{it1} = \alpha + \beta_1 ESG + \beta_2 Control + \varepsilon_{it} \quad (2)$$

$$Y_{it0} = \alpha + \beta_1 ESG + \beta_2 Control + \varepsilon_{it} \quad (3)$$

3.3 Sample Selections

The dependent variable is credit availability, measured by the size of new loans. The size of new loans is subdivided into new short-term borrowing and new long-term borrowing. The size of new loans is measured using these specific indicators based on Ni Juan and Kong Lingwen [4]: total new loans (Δ Loan) is measured using the sum of new short-term borrowings and new long-term borrowings divided by ending total assets; total new short-term loans (Δ SLoan) is measured using new short-term borrowings divided by ending total assets; total new long-term loans (Δ LLoan) is measured using new long-term borrowings divided by ending total assets.

The core independent variable is ESG information disclosure. The WIND database CSI Comprehensive ESG Rating is used to quantitatively measure ESG information. The CSI ESG rating system includes three pillars of environmental, social and corporate governance, 14 themes and 26 key indicators. The system is based on indicator scores and ultimately results in nine ratings ranging from C to AAA. This study selects the company's composite ESG score.

In order to facilitate empirical analysis, The publication employs a nine-point system to allocate values ranging from 1 to 9 to each of the nine grades of C to AAA ratings,

with higher scores representing more adequate ESG disclosure and better ESG performance.

The control variables refer to the study of Wulong et al. [17]. Financial factors include firm size (Size) = natural logarithm of total assets, profitability (ROA) = return on total assets, financial leverage (Lev) = leverage ratio, and growth (Growth) = rate of increase in operating revenues; property rights attribute factor (SOE) = state-owned enterprises is 1, otherwise it is 0; asset structure factors include fixed asset ratio (FixedAsset) = Fixed Asset/Total Asset; cash asset ratio (Cash)=Cash Asset/Total Asset; corporate governance factors equity concentration (Top1) =the ratio of the first-largest owner's shareholding, and Board size(Boardsize)=the quantity of directors on the board of directors.

Also to verify the heterogeneity of property rights, this model will be regressed separately for different property rights. (Not yet fixed) Also, the industry and year need to be fixed.

4 Analysis of Empirical Results

4.1 Descriptive Statistics

As seen in Table 1, the three views of Δ Loan, Δ SLoan, and Δ LLoan have respectively mean values of 1%, 0.6%, and 0.5%, indicating that the overall size of the loan is small in terms of the 2009-2023 time period, with short-term period loans accounting for the major portion of the loan.

The average value of ESG is about 4. The average ESG rating of listed corporations is a B grade, under the CSI ESG assessment system, and the ESG rating is lower than the overall one. The lowest ESG rating is 1 and the highest is 8, and the standard deviation is close to 1, which indicates that there is a big difference in the ratings between different companies. This reflects varying levels of emphasis that different enterprises place on ESG.

Table 1. Results of descriptive statistics

variable	Number of cases	minimum value	maximum values	average	
				value	standard deviation
Size	45,689	19.531	26.210	22.125	1.315
Δ Loan	45689	-0.209	0.219	0.010	0.063
Δ SLoan	45,689	-0.172	0.167	0.006	0.049
Δ LLoan	45,689	-0.110	0.154	0.005	0.035
Lev	45677	0.050	0.965	0.421	0.214
Growth	45677	-0.614	2.708	0.161	0.422
ROA	45677	-0.285	0.251	0.050	0.681
FixedAsset	45677	0.008	0.677	0.172	0.139
Cash	45677	0.002	0.694	0.208	0.159
Top1	45641	0.000	100.000	34.216	15.201
Boardsize	45637	0.693	2.890	2.118	0.201

SOE	45,691	0.000	1.000	0.128	0.334
ESG	43,064	1.000	8.000	4.124	0.925

4.2 ESG Disclosure on Corporate Credit Availability

Table 2 presents the impact of ESG performance on enterprises' credit accessibility, accounting for various variables. High-quality ESG disclosure exerts a substantial positive impact of 0.005 on credit availability, suggesting that high quality ESG disclosure can help firms to obtain more credit facilities.

Replacing the dependent variable with short-term credit availability and long-term credit availability, it is found that ESG high-quality information disclosure has a significant positive effect on both long-term and short-term credit access of enterprises. In summary, the analysis shows that ESG information disclosure has a significant supportive effect on enterprises' access to both short-term credit and long-term credit, thus strengthening their credit availability and verifying the H1 hypothesis.

Table 2. Basic regression results of ESG disclosure on corporate credit availability

variable	Δ Loan	Δ SLoan	Δ LLoan
ESG	0.005 *** (15.309)	0.004 *** (13.832)	0.001 *** (7.317)
Size	0.001 *** (2.591)	-0.001 *** (-4.347)	0.002 *** (10.228)
Lev	0.032 *** (18.027)	0.018 *** (12.986)	0.013 *** (13.131)
Growth	0.027 *** (36.665)	0.018 *** (30.810)	0.008 *** (20.024)
ROA	-0.024 *** (-5.081)	-0.016 *** (-4.404)	-0.007 *** (-2.792)
Fixedasset	-0.017 *** (-6.518)	-0.013 *** (-6.184)	-0.005 *** (-3.581)
Cash	-0.013 *** (-6.391)	-0.008 *** (-5.152)	-0.005 *** (-4.480)
Top1	0.000 *** (3.926)	0.000 *** (4.319)	0.000 (0.732)
Boardsize	-0.001 (-0.931)	0.001 (0.962)	-0.002 ** (-2.185)
SOE	-0.005 *** (-5.122)	-0.004 *** (-5.731)	-0.001 (-1.047)
cons	-0.037 *** (-6.328)	0.001 (0.296)	-0.038 *** (-11.283)
N	43058	43058	43058
R2	0.054	0.034	0.028

t statistics in parentheses

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

4.3 Property Rights Heterogeneity Check

Table 3 classifies listed firms into state-owned and non-state-owned enterprises to investigate the influence of property rights heterogeneity on the effect of ESG disclosure on loan availability, with 1 denoting state-owned enterprises and 0 denoting non-state-owned enterprises.

As shown in Table 3, ESG disclosure of firms with both property rights reflects a significant positive impact on overall credit availability and short-term credit availability. ESG disclosure, however, has no appreciable effect on state-owned companies and only significantly benefits private companies in terms of long-term loan availability. This suggests that ESG information disclosure can help non-state-owned enterprises obtain more long-term credit but will not help state-owned enterprises obtain more long-term credit.

Banks need more demanding information disclosure to provide long-term credit to enterprises, but due to the fact that SOEs have natural financing policy treatment and their own information advantage, ESG information is redundant for SOEs. This redundancy weakens the role of ESG disclosure in relation to the availability of credit to enterprises. The empirical results partially support hypothesis H3.

Table 3. Basic Regression Results for Property Rights Heterogeneity

	variant	Δ Loan	Δ SLoan	Δ LLoan
SOE=1	ESG	0.004 *** (3.479)	0.003 *** (4.507)	0.000 (0.427)
	Size	0.003 *** (4.171)	-0.000 (-0.559)	0.003 *** (6.815)
	Lev	0.024 *** (4.594)	0.017 *** (4.288)	0.006** (2.031)
	Growth	0.027 *** (12.568)	0.018 *** (10.938)	0.009 *** (6.510)
	ROA	-0.074 *** (-4.804)	-0.054 *** (-4.656)	-0.014 (-1.530)
	Fixedasset	-0.009 (-1.033)	-0.004 (-0.646)	-0.008 (-1.520)
	Cash	-0.021*** (-4.032)	-0.010** (-2.472)	-0.012*** (-3.815)
	Top1	0.000 *** (2.772)	0.000 (1.116)	0.000 *** (2.689)
	Boardsize	0.003 (0.713)	0.008** (2.055)	-0.003 (-1.122)
	_cons	-0.101 *** (-5.563)	-0.027* (-1.953)	-0.068 *** (-6.070)
	N	5735	5735	5735
	R2	0.051	0.032	0.028
	variant	Δ Loan	Δ SLoan	Δ LLoan
	ESG	0.005 ***	0.004 ***	0.002 ***

	(15.086)	(12.977)	(7.940)
Size	0.000	-0.001 ***	0.001 ***
	(1.036)	(-4.355)	(7.923)
Lev	0.033 ***	0.018 ***	0.014 ***
	(17.675)	(12.172)	(13.768)
Growth	0.027 ***	0.018 ***	0.008 ***
	(34.489)	(28.828)	(19.040)
ROA	-0.018 ***	-0.012 ***	-0.006 **
SOE=0	(-3.577)	(-3.021)	(-2.282)
Fixedasset	-0.017 ***	-0.013 ***	-0.005 ***
	(-6.515)	(-6.319)	(-3.179)
Cash	-0.011 ***	-0.008 ***	-0.004 ***
	(-4.960)	(-4.361)	(-2.939)
Top1	0.000 ***	0.000 ***	-0.000
	(2.998)	(4.178)	(-0.560)
Boardsize	-0.002	0.000	-0.002 *
	(-1.200)	(0.224)	(-1.766)
_cons	-0.029 ***	0.004	-0.033 ***
	(-4.595)	(0.898)	(-9.429)
N	37323	37323	37323
R2	0.055	0.034	0.028

t statistics in parentheses

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

5 Conclusions

This study focuses on the impact of ESG disclosure on credit availability of Shanghai and Shenzhen A-share listed companies from 2009 to 2023. It is found that firms' high-quality ESG disclosure can positively affect firms' short-term credit, long-term credit and overall credit size, but this effect is partly affected by the heterogeneity of property rights discrimination.

However, this study has many shortcomings. First, this study does not fix the industry and time, omitting the variables. Second, this study explores only the credit size and ignores the cost of credit. Third, this study did not explore the moderating role of other factors in more depth but only from the aspect of property rights heterogeneity. In the future, a more in-depth study can be conducted on the moderating role of the gearing ratio. Fourth, this study should have conducted deeper tests on the variables. Fifth, this study lacks robustness tests. The sample can be replaced, or the measurement of credit availability and the numerator with cash borrowed to do a more in-depth robustness test. These issues will be further optimized in the future.

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