

# *ESG Performance and Commercial Credit Financing*

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**Abstract:** In recent years, the ESG performance of enterprises has received extensive attention from both the practical and academic communities worldwide. Based on the data of A-share listed companies in China from 2010 to 2022, this paper explores the impact of ESG performance on commercial credit financing of enterprises. The research finds that ESG performance hinders enterprises from obtaining more commercial credit financing. The above research conclusions provide empirical references for enterprises to conduct ESG practices and enhance their commercial credit financing levels.

## 1. Introduction

With the development of China's capital market, economic interactions have become increasingly complex and diverse. Traditional financial information has become insufficient to meet the needs of various stakeholders. As part of corporate accounting information, non-financial information can effectively complement financial information and assist investors in evaluating enterprise value and making investment decisions. ESG is widely regarded as important non-financial information and a key indicator for measuring corporate sustainability in the international context. Data shows that after the proportion of A-share listed companies disclosing ESG-related reports exceeded 30% in 2021, it further increased to 34% in 2022. With the release of the "Research Report on the ESG Evaluation System for Chinese Listed Companies" and the "White Paper on the Development of ESG in China", the timely and accurate disclosure of ESG information and the unification of the ESG system have become inevitable choices for the future, which will promote the development of ESG in China's capital market.

Given that the ESG concept has been introduced to China for a relatively short period, existing literature mostly focuses on the economic consequences of ESG performance and the influencing factors of commercial credit financing. Few studies have focused on the mechanism by which ESG information disclosure affects commercial credit financing. Therefore, can ESG information disclosure enhance commercial credit financing? Based on the current status of ESG information disclosure, this paper selects A-share listed companies in China from 2010 to 2022 as samples to explore the evidence of its impact on commercial credit. This can fill the gap in existing literature and has both practical and theoretical significance.

## 2. Literature Review

### 2.1. Economic Consequences of Corporate ESG Performance

Domestic and foreign scholars' research on the economic consequences of ESG performance mainly focuses on its impact on financial performance, enterprise value, management characteristics, and enterprise risk, especially the influence of ESG performance on enterprise value, financial characteristics, and enterprise performance.

Regarding the impact on enterprise value, studies have found that strengthening ESG investment increases enterprise value, while the opposite reduces it[1]. Some scholars, however, have found no significant relationship between ESG performance and enterprise value. For instance, Atan (2018) et al. found no significant relationship between ESG performance and enterprise value in their study of Malaysian enterprises[2].

In terms of the impact on financial characteristics, ESG affects variables such as enterprise capital cost, investment efficiency, and financial risk. Gao Jieying et al. (2021) believe that good ESG performance can enhance enterprise investment efficiency[3]. Shakil (2021) found that the better the ESG performance of an enterprise, the more moral capital it attracts, which in turn attracts stable long-term investment from investors, thereby reducing the enterprise's financial risk[4].

Regarding the impact on enterprise performance, Yuan Rongli et al. (2022) systematically discussed the development of the ESG concept in China, exploring it from six aspects: ESG connotation, measurement methods, theoretical basis, behavior, information disclosure, and investment[5]. They found that good ESG performance can enhance enterprise financial performance and market value. Li Jinglin et al. (2023), based on micro-level evidence from listed companies in China, discovered that ESG performance mainly reduces enterprise debt financing costs by improving information transparency, reducing operational risks, and alleviating financing constraints, thereby enhancing financial performance and innovation performance[6].

### 2.2. Influencing Factors of Corporate Trade Credit Financing

Existing literature has extensively focused on the influencing factors of trade credit financing, which include both macro factors and individual enterprise factors.

In the research on the influence of macro factors, Ma Jingjuan et al. took non-financial A-share listed companies in China's Shanghai and Shenzhen stock markets from 2001 to 2020 as samples and found that if Chinese enterprises are subject to anti-dumping, anti-subsidy, and safeguard measures investigations, their trade credit financing will decrease[7]. During monetary tightening, enterprises tend to alleviate financing constraints more through trade credit with suppliers and customers, and trade credit financing is used as an alternative to bank loans[8].

In the research on the influence of individual enterprise factors, scholars at home and abroad have focused on the supplier-customer relationship, enterprise performance, corporate governance, and external supervision, among others. Ku Xiangfang (2022) found that both going concern audit opinions and media attention have a significant inhibitory effect on corporate trade credit financing; media attention enhances the inhibitory effect of going concern audit opinions on corporate trade credit financing through an amplification effect[9]. Xie Jian and other scholars have all found in their studies that there is a significant positive correlation between executive ability and corporate trade credit financing, that is, enterprises with stronger executive professional ability, better professional quality, and stronger execution ability have more valuable accounting information disclosure, which conveys favorable information about the enterprise to external stakeholders and promotes the enterprise to obtain trade credit from suppliers or customers[10]. Zhang Zeyu used microdata of Chinese A-share listed companies from 2000 to 2020 to test the impact of bargaining

power on trade credit financing. The study found that the stronger the financing constraints of the enterprise and the more cash flow shortage, the smaller the scale of trade credit financing[11]. Li Zengfu and Feng Liuhua based on the data of Chinese A-share listed companies from 2008 to 2019 found that ESG enhances the competitive advantage of product markets, strengthens external supervision, improves corporate reputation and risk resistance capabilities, thereby enabling enterprises to obtain more trade credit financing[12].

In summary, existing research on corporate ESG performance and trade credit financing has relatively few studies that take corporate ESG performance as the entry point to explore its impact on trade credit financing. Analyzing the impact of corporate ESG performance on trade credit financing also has certain theoretical and practical significance. It not only can provide new experience and evidence for the construction and development of the corporate ESG performance evaluation system to a certain extent, but also can provide reference for enterprises to obtain more financing channels, obtain trade credit financing, and alleviate financing constraints.

### 3. Theoretical Analysis and Research Hypotheses

Based on the theory of information asymmetry, ESG information disclosure can alleviate the problem of information asymmetry. Three economists, Stiglitz, Spence, and Akerlof, jointly proposed the theory of asymmetric information. This theory holds that in economic activities, different participants have varying degrees of access to information. Those participants who have a full understanding of the information are in an advantageous position, while those with limited information are at a disadvantage. ESG information disclosure can effectively improve the transparency of enterprises, help suppliers and customers understand the business situation of enterprises, reduce the uncertainties faced by enterprises in commercial credit financing, thereby reducing the cost of corporate financing decisions, and increasing the willingness and scale of corporate commercial credit financing. Reducing the information asymmetry of enterprises can also help investors play a better role in external supervision, which is conducive to improving corporate performance. When the corporate performance is good, it can increase the willingness of suppliers and customers to provide commercial credit financing.

Based on the signaling theory, good corporate ESG performance can be regarded as a positive signal sent by the enterprise to the outside world, which is conducive to suppliers and customers obtaining positive information about the enterprise, enhancing the trust between the enterprise and its upstream and downstream partners, and thus promoting corporate commercial credit financing. Secondly, enterprises with good ESG performance have a higher reputation, which will increase the degree of trust of stakeholders in the enterprise, and further help to establish an optimistic expectation of suppliers and other partners towards the enterprise, winning more commercial credit for the enterprise.

However, based on the principal-agent theory, enterprises' pursuit of good ESG performance will lead to principal-agent problems, thereby reducing the willingness of suppliers and customers to supply commercial credit. Friedman (1970) believed that enterprises' activities such as social responsibility and environmental protection serve the interests of the management rather than the interests of shareholders[13]. The management can enhance their personal reputation by vigorously carrying out ESG practices, increase the resources directly controlled by themselves, and seek greater power. Once the management over-invests in ESG-related activities out of this motivation, it will consume the limited resources of the enterprise without bringing corresponding direct benefits, leading to a decline in corporate value and economic profits, and thus threatening the interests of shareholders. In order to further conceal their self-interested behaviors and the resulting adverse consequences, the management will use financial violations such as earnings management to try to

reduce corporate transparency and exacerbate the problem of information asymmetry. The above principal-agent problems may lead to a decline in the profitability and solvency of enterprises and an increase in financial risks, reduce the quality of corporate information disclosure, trigger principal-agent conflicts between shareholders and the management, and shake the stable operation of enterprises. This will make suppliers and customers face more severe adverse selection and moral hazard problems, causing a lack of trust of suppliers and customers in the enterprise and its senior management. Suppliers and customers will worry about the opportunistic tendencies of the management in transactions with the enterprise and the threat to their own interests caused by the resulting default risks, thus reducing the commercial credit that the enterprise can obtain.

Based on the above analysis, this paper believes that for suppliers and customers, the negative impact of enterprises' vigorous implementation of ESG practices in order to achieve good ESG performance will outweigh the positive impact. Therefore, the following hypothesis is proposed:

H1: Corporate ESG information disclosure has a negative effect on the level of commercial credit financing.

## 4. Research Design and Data Sources

### 4.1. Sample Selection and Data Sources

This paper selects all A-share listed companies whose first announcement date is between 2010 and 2022 as the initial sample. According to the research needs, the samples are screened as follows:

- (1) According to the "Industry Classification Guidelines for Listed Companies" issued by the China Securities Regulatory Commission in 2012, in order to ensure the comparability of financial data, samples where the acquirer is a financial company are excluded;
- (2) Listed companies under special treatments such as ST, \*ST, and PT stocks are excluded;
- (3) Samples with severely missing relevant financial data are excluded.

After the above screening, a total of 36404 firm-year sample observations are finally obtained in this paper. The ESG rating data comes from the WIND database, and the rest comes from the CSMAR database. In order to eliminate the influence of extreme values, this paper also conducts a 1% winsorize treatment on both ends of the main continuous variables. The data processing and statistical software used in this study are STATA17.0 and Excel2010.

### 4.2. Variable Definition

#### 1. Dependent Variable

Drawing on the approach of Zhang Xinmin (2012), the ratio of the sum of accounts payable, accounts receivable, and advance receipts to the total assets at the end of the year is used to measure commercial credit financing (CCP).

#### 2. Independent Variable

Drawing on the approach of Gao Jieying (2021), the Huazheng ESG rating is selected to measure the corporate ESG performance. Compared with other ESG evaluation systems, the Huazheng ESG indicators have high applicability and timeliness and a wide coverage range. Among them, the Huazheng ESG ratings are divided into nine levels from high to low: AAA, AA, A, BBB, BB, B, CCC, CC, and C. In this paper, ESG is assigned values according to the above rating distribution, with AAA being 9, AA being 8, and so on, and C being 1.

#### 3. Control Variables

Referring to previous studies, this paper controls the company size (SIZE), the proportion of independent directors (Indep), the growth rate of operating income (Growth), the number of

directors (Board), the proportion of fixed assets (FIXED), and the age of the company's establishment (FirmAge). In addition, considering that ESG performance varies greatly across different industries and years, this paper also controls for the influence of years and industries. The specific definitions of the variables are shown in Table 1.

Table 1. Variable Definitions

Variable Type	Variable Symbol	Variable Definition
Dependent Variable	Commercial Credit Financing(CCP)	The ratio of the sum of accounts payable, notes payable, and advance receipts of the enterprise to the total assets
Independent Variable	ESG Performance(ESG)	Assign values from 1 to 9 according to the Huazheng ESG rating from low to high
Control Variable	Company Size(Size)	The ratio of the sum of accounts payable, notes payable, and advance receipts of the
	Proportion of Independent Directors (Indep)	The ratio of the number of independent directors to the total number of directors on the board of directors
	Proportion of Independent Directors(Growth)	This year's operating income / last year's operating income - 1
	Number of Directors(Board)	Take the natural logarithm of the number of directors on the board of directors
	Proportion of Fixed Assets(FIXED)	The ratio of the net amount of fixed assets to the total assets
	Company's Establishment Years(FirmAge)	$\ln(\text{The current year} - \text{The year of the company's establishment} + 1)$
	Industry Variable(IND)	Industry dummy variable
	Annual Variable(YEAR)	Annual dummy variable

### 4.3. Theoretical Model

$$CCP_{i,t} = \alpha_0 + \alpha_1 ESG_{i,t} + \sum \alpha_i Controls_{i,t} + \varepsilon_{i,t} \quad (1)$$

## 5. Empirical Tests and Result Analysis

### 5.1. Descriptive Statistics

This paper conducts a descriptive statistical analysis of the statistical indicators such as the minimum value, median, maximum value, standard deviation, and mean value of each variable in the model. The results are shown in the following table:

Table 2. Descriptive Statistics of Variables

Variable	Number of Samples	Minimum Value	Median	Maximum Value	Standard Deviation	Mean Value
CCP	36404	0.00317	0.123	0.581	0.112	0.152
ESG	36404	1	4	7	1.050	4.151

Size	36404	19.67	21.99	26.45	1.294	22.19
Growth	36404	-0.648	0.111	3.303	0.383	0.168
FIXED	36404	0.00159	0.174	0.736	0.157	0.207
Board	36404	1.609	2.197	2.708	0.197	2.121
Indep	36404	0.273	0.364	0.600	0.0537	0.376
TobinQ	36404	0.803	1.605	13.80	1.322	2.025
FirmAge	36404	1.099	2.944	3.611	0.352	2.898

From the results in Table 2, it can be seen that the mean value of the ESG performance of the sample enterprises is 4.151, the standard deviation is 1.050, and the median is 4, indicating that the average level of ESG ratings is moderate, falling between B and A. The mean value of the commercial credit obtained by the sample enterprises is 0.152, the standard deviation is 0.112, the minimum value is 0.00317, the median is 0.123, and the maximum value is 0.581, indicating that there are significant differences in the commercial credit obtained by the sample enterprises.

Regarding the control of variables, although there is a large difference in the size (Size) among large, medium, and small enterprises, with the maximum and minimum values being 19.67 and 26.45 respectively, the overall distribution of enterprise sizes is relatively uniform. The average value differences of the Tobin Q ratio (TobinQ) indicator are not significant and the values are all relatively small, indicating that the operating performance of Chinese listed companies is not high, and their profitability should be improved. In terms of growth (Growth), the average value is 0.168, indicating that the vast majority of listed companies are still in a stage of rapid development, while the standard deviation is 0.383, indicating that there are large differences in growth among different enterprises. The average size of the board of directors (Board) is 2.121, indicating that in this regard, the differences among different companies are not particularly significant. The average proportion of independent directors (Indep) is 37.6%, indicating that companies generally attach importance to the role of independent directors in corporate governance. At the same time, this paper controls for the influence of differences in years and industries on the relationship between the main research variables.

## 5.2. Analysis of Regression Results

The research method of this paper is mainly multiple linear regression based on the least squares method, and the statistical software used is StataSE17.0. In this paper, four regressions are carried out by separately adding industry fixed effects and year fixed effects. Regression I does not control for industry and year fixed effects. Regression II adds year fixed effects on the basis of Regression I. Regression III adds industry fixed effects on the basis of Regression I. Regression IV controls for both industry fixed effects and year fixed effects simultaneously. In summary, the four regression results shown in Table 6 are obtained, and it is found that the core variable (ESG) in the four regression results is significantly negatively correlated with commercial credit financing (CCP) at the 1% level. Therefore, Hypothesis H1 is verified.

For other control variables, the growth rate of operating costs, which represents the growth (Growth) of the enterprise, is significantly positively correlated with commercial credit financing at the 1% level. The regression result of this variable shows that the better the enterprise performance, the more commercial credit financing it obtains. When an enterprise shows a positive operating state, the suppliers of commercial credit will have a higher degree of trust in the enterprise and be more willing to provide commercial financing channels for the enterprise, thus promoting the acquisition of commercial credit financing by the enterprise.

Table 5. Regression Results of ESG on Commercial Credit Financing

Variable	(1)	(2)	(3)	(4)
ESG	-0.007***	-0.006***	-0.006***	-0.006***
	[0.0006]	[0.0006]	[0.0005]	[0.0005]
Size	0.018***	0.019***	0.017***	0.018***
	[0.0005]	[0.0005]	[0.0005]	[0.0005]
Growth	0.012***	0.010***	0.013***	0.011***
	[0.0015]	[0.0015]	[0.0014]	[0.0014]
FIXED	-0.138***	-0.150***	-0.048***	-0.064***
	[0.0037]	[0.0037]	[0.0040]	[0.0040]
Board	0.006	-0.009*	0.019***	0.004
	[0.0037]	[0.0037]	[0.0034]	[0.0034]
Indep	-0.031*	-0.046***	-0.020	-0.033**
	[0.0130]	[0.0129]	[0.0121]	[0.0119]
TobinQ	-0.007***	-0.008***	-0.006***	-0.006***
	[0.0005]	[0.0005]	[0.0004]	[0.0004]
FirmAge	-0.012***	0.008***	-0.010***	0.011***
	[0.0017]	[0.0018]	[0.0016]	[0.0018]
Industry fixed effect	-	-	YES	YES
Year fixed effect	-	YES	-	YES
N	36404	36404	36404	36404
adj. R2	0.083	0.106	0.214	0.234

Note: The values in parentheses are standard deviations. \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

## 6. Conclusions and Policy Recommendations

This paper takes Chinese A-share listed companies from 2010 to 2022 as samples to explore the impact of corporate ESG performance on the commercial credit they obtain. The empirical results show that corporate ESG performance has a negative impact on the commercial credit it obtains, and the results have passed the robustness test.

Based on the above research conclusions, this paper puts forward the following suggestions:

First, external stakeholders should not be misled by the "popularity" of ESG. They should fully recognize the adverse effects of enterprises' ESG practices and strengthen their discrimination to prevent their own interests from being damaged during the process of cooperation and transactions with enterprises.

Second, external supervisors such as auditors and institutional investors should give full play to their supervisory roles, restrain the behaviors of enterprises and their management, reduce the degree of information asymmetry, and alleviate the principal-agent problems arising from ESG practices, thereby addressing the lack of trust of suppliers and customers in enterprises.

Third, relevant government departments should formulate scientific ESG information disclosure standards and improve laws and regulations related to ESG practices. The China Securities Regulatory Commission, stock exchanges, etc. should, while actively incorporating the ESG concept into China's capital market, pay attention to avoiding the adverse effects of ESG practices through policy formulation. Only by solving the problems caused by enterprises' ESG practices can the ESG concept be further promoted domestically, the important role of ESG in the "dual carbon"

strategy be fully exerted, and ESG become a source of power in China's transformation towards "high-quality development".

### Data Availability

Data sharing is not applicable to this article as no new data were created or analysed in this study.

### Conflict of Interest

The author states that this article has no conflict of interest.

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