



Study on Green Credit Policy and Enterprise ESG Performance

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Abstract. Green finance can promote environmental governance, guide enterprise resources from high pollution to environmentally friendly. At present, the green finance policy of our country is advancing steadily, and has made great progress in the fields of credit, bonds and funds. This paper examines the impact of green credit policies on ESG performance using ESG performance score data. The results show that the enforcement of green lending policies can contribute to the improvement of corporate ESG performance, which is still important after testing for reliability, and proves that information transparency and internal costs of the agency are two mechanisms. This study provides evidence from the green credit policy perspective for understanding the improvement of corporate ESG performance in the context of green finance.

Keywords: green credit policy, corporate ESG performance, Green finance

1 Introduction

The ESG is an acronym for Environmental, Social, and Governance. Most of the existing literature studies various factors affecting the performance of ESG of enterprises from the perspective of country, market and corporate management^{[1][3]} (Cai, 2016; Dyck, 2019). However, the influence of green credit policy on enterprise ESG performance has not been widely studied.

The rise and development of green credit in the banking industry has also attracted a number of domestic and foreign scholars to carry out research on green innovation. Studies on the impact factors of green innovation mainly include command-based policies and enterprise organizational structures^[8] (Triguero, 2013).

Compared with the foregone studies, the major contributions of this article are: First, this article enriches the exploration on the interfering factors of ESG performance from the perspective of green credit. Some scholars believe that fine ESG performance is conducive to improving stakeholder trust and support^{[4][2][6]} (Edmans, 2011; Deng, 2013; Flammer, 2015). Second, this paper clarifies the causality of green credit policy and ESG performance from the perspective of information transparency and agency cost. This paper analyzes the relation between the improvement of information trans-

parency and the reduction of agency cost and the performance of ESG, and then studies the impact of green credit policy on the performance of ESG.

2 Theoretical Analysis

Firstly, green credit policy will affect the corporate ESG performance by influencing corporate information transparency. The enforcement of green credit policy will affect banks' lending restrictions to enterprises, especially for some enterprises with serious pollution. When companies perform better in information transparency, they will receive larger, longer, and less restrictive external investments^[9] (Wang Xin and Wang Ying, 2021). One way for enterprises to improve information transparency is to improve ESG performance, to disclose financial and environmental information in environmental, community and corporate governance.

Secondly, green credit policy will influence the manifestation of ESG by affecting the agency cost within the enterprise. The enforcement of green credit policy makes shareholders attach importance to reduce the green credit limit and carry out green activities, thus putting pressure on management. In the manager market, because of the low cost of acquiring and processing the borrower's privacy information, banks can efficaciously supervise business managers, and play the role of "big lender supervision" by differentiating loan interest rates, restricting free cash flows of enterprises, and other means^[9] (Wang Xin and Wang Ying, 2021). Therefore, this paper proposes the following assumptions.

Hypothesis: the enforcement of green credit policy can promote enterprise ESG performance.

3 Research design

3.1 Sample selection and data sources

To investigate the impact of green credit policy on the performance of ESG, this paper chooses A-shares in Shanghai and Shenzhen Stock Market between 2011 and 2021. On this basis, the following screening shall be carried out: (1) elimination of listed companies of financial institutions such as banks, insurance companies, multiple financial institutions, etc.; (2) elimination of missing samples of observation values. The financial data and corporate governance data in this article are from CSMAR database, and the ESG performance data are from Bloomberg ESG. This paper deals with winsorize at 1% and 99% of all continuous variables.

3.2 Model design and variable specification

This paper builds the following models to test the impact of green credit policies on ESG performance:

$$ESG = \beta_0 + \beta_1 Policy + \beta_2 (Size + Lev + ROA + Growth + Board + Indep + Dual + Top1 + SOE + FirmAge) + \beta_3 Dummy + \varepsilon$$

In the model, β_0 is intercept, Policy is independent variable green credit policy. Dummy is fixed effect, which mainly controls firm and year fixed effect.

Dependent variables: Enterprise ESG performance.

Referring to the methods of Xu Xiangbing and others (2022)^[10], Fang Xianming and Hu Ding (2023)^[5], this paper adopts Bloomberg ESG comprehensive score data as the judgement method of dependent variables in the benchmark regression. This article uses Bloomberg's annual corporate score data as the company's ESG performance for the year.

Independent variables: green credit policy.

Referring to the research methods of Wang Xin and Wang Ying (2021)^[9], this paper identifies whether a listed company belongs to the industry of Class B environmental and social risks as a restricted industry of green credit.

Control variable.

Referring to the existing documents (Hu Jie, 2022; Zhong Qinlin, 2023)^{[7][11]}, this paper selects Size, Lev, ROA, Growth, Board, Indep, Dual, Top1, SOE, FirmAge as control variables. Table 1 lists the meanings of all variables.

Table 1. Variable definitions 1

| The variable type | Variable symbol | Variable meaning |
|--------------------|-----------------|---|
| Dependent variable | ESG | Corporate ESG performance |
| | Argument | |
| Controls | Policy | Green credit policy |
| | Size | Enterprise size |
| | Lev | The ability of enterprise to use creditors to provide funds for business activities |
| | ROA | Profitability |
| | Growth | Operating revenue growth rate |
| | Board | Number of directors |
| | Indep | Percentage of independent directors |
| | Dual | The chairman and general manager of the company are the same person |
| | Top1 | The shareholding ratio of the largest shareholder |
| | SOE | Nature of ownership |
| | FirmAge | Age of self-establishment of the enterprise |

4 Empirical analysis of results

4.1 Descriptive statistics

Table 2 presents the descriptive statistical results of the variables in this study. The standard deviation of ESG is 8.147, reflecting significant differences in ESG among sample companies. Meanwhile, the standard deviation is 0.129, which shows that 1.7% enterprises are affected by the green credit policy and the impact of green credit policy on different sample enterprises is different. The statistical characteristics of other variables are basically consistent with those of Hu Jie and Zhong Qinlin (2023)^{[7][11]}.

Table 2. Descriptive statistical results 1

| variable | sample size | mean | median | standard deviation | min | max |
|----------|-------------|--------|--------|--------------------|--------|--------|
| ESG | 11487 | 28.100 | 27.390 | 8.147 | 12.950 | 55.760 |
| E | 11487 | 8.123 | 1.933 | 10.950 | 0 | 51.830 |
| S | 11487 | 12.150 | 10.160 | 6.660 | 0 | 36.310 |
| G | 11487 | 64.360 | 69.300 | 13.610 | 32.030 | 89.860 |
| Policy | 11487 | 0.017 | 0 | 0.129 | 0 | 1 |
| Size | 11487 | 23.330 | 23.110 | 1.539 | 20.480 | 28.840 |
| Lev | 11487 | 0.498 | 0.506 | 0.213 | 0.072 | 0.939 |
| ROA | 11487 | 0.048 | 0.039 | 0.064 | -0.191 | 0.250 |
| Growth | 11487 | 0.182 | 0.114 | 0.426 | -0.524 | 2.822 |
| Board | 11487 | 2.187 | 2.197 | 0.215 | 1.609 | 2.773 |
| Indep | 11487 | 0.375 | 0.364 | 0.055 | 0.313 | 0.571 |
| Dual | 11487 | 0.216 | 0 | 0.412 | 0 | 1 |
| SOE | 11487 | 0.489 | 0 | 0.500 | 0 | 1 |
| FirmAge | 11487 | 2.939 | 2.996 | 0.333 | 1.792 | 3.526 |
| Top1 | 11487 | 0.360 | 0.342 | 0.161 | 0.082 | 0.773 |

4.2 Benchmark regression

As shown in Column (1) of Table 3, the independent variable Policy conspicuously and positively affects the ESG performance of an enterprise at the level of 1%, and after adding the control variable, as shown in Column (2) of Table 3, the independent variable Policy conspicuously and positively affects the ESG performance of an enterprise at the level of 5%, which shows that the green credit policy substantially improves the company's ESG performance. To sum up, the research hypothesis is proved.

Table 3. Benchmark regression results 1

| variable | (1) | (2) |
|--------------------|--------------------------|-----------------------|
| | ESG | ESG |
| Policy | 2.295*** (2.910) | 2.070** (2.450) |
| Size | | 1.298*** (6.520) |
| Lev | | -2.327*** (-3.680) |
| ROA | | 4.227*** (3.850) |
| Growth | | -0.208** (-2.320) |
| Board | | 1.189** (2.090) |
| Indep | | 3.879** (2.380) |
| Dual | | -0.061 (-0.290) |
| SOE | | -0.579 (-1.320) |
| FirmAge | | -0.258 (-0.190) |
| Top1 | | 0.915 (0.880) |
| Constant | 28.059*** (2,175.950) | -4.546 (-0.750) |
| Observations | 11,487 | 11,487 |
| Adj-R ² | 0.805 | 0.810 |

Note: *, ** and *** are respectively significant at 10%, 5% and 1% levels.

5 Conclusion

Using 2011-2021 data of A-share listed companies in Shanghai and Shenzhen, this paper empirically examines the influence of green credit policy on ESG performance. The main conclusions are: The enforcement of green credit policy will enhance the ESG performance of enterprises. Based on the conclusion, this paper obtains the following enlightenment: The state needs to encourage private enterprises to increase their commitment to corporate environmental governance, such as providing tax exemptions and financial subsidies. Moreover, the enterprise management can reduce the agent's opportunistic behavior by means of equity incentive. Stockholders can combine the individual interests of agent with the common interests of enterprises, so as to reduce the agency cost and improve the ESG performance.

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