Study on ESG Performance Factors of Listed Companies

Yuxin Jiang[1,*]

[1] *International Business School, Chongqing Technology and Business University,Chongqing, China*
[*] *Corresponding author. Email: 1474038316@qq.com*

ABSTRACT

In recent years, China attaches great importance to the performance of corporate ESG. The "cause of socialism with Chinese characteristics" integrates ecological civilization into the overall layout, and China has focused its economic growth points on the development of green production business. In this paper, the research samples are the listed companies selected by Syn Tao Green Finance in the ESG scoring table from 2015 to 2018.The Study has shown that (1) moderate increase in financial leverage has a positive effect on ESG performance. (2) As the demand for financing increases, the better the performance of enterprise ESG. In addition, the ESG performance of enterprises is also affected by external pressures, (3) moderately enhancing the degree of market competition has a positive role in promoting the ESG performance of enterprises. The study also found that corporate governance also has an impact on ESG: In a market with strong market competition, the higher the proportion of independent directors the company is, the better the ESG performance it is. (5) ESG performance is also affected by the size of the enterprise, and the larger the enterprise size, the better the ESG performance. In terms of the nature of property rights, (6) debt levels and financing needs have a strong role in promoting the performance of non-state-owned enterprises in ESG, but the effect on state-owned enterprises is not obvious.

Keywords: *ESG Performance, Product Market Competition, Debt Level, Financing Demand.*

1. INTRODUCTION

In recent years, the state has paid great attention to the performance of corporate ESG. The "cause of socialism with Chinese characteristics" integrates ecological civilization into the overall layout, and China has focused its economic growth points on the development of green production business. Research and development of green products, reduce environmental pollution, fulfill social responsibilities, and optimize corporate governance structure have become main missions vigorously advocated by society. As a result, increasing and supervising the performance of companies in the environment, social responsibility, and corporate governance has gradually become a mean of achieving green and sustainable corporate development. The state has also gradually implemented the general policy of ecological civilization construction into management and supervision of the ESG performance of enterprises. Therefore, how to improve the ESG performance of enterprises has become an important issue in the construction of ecological civilization. This article will focus on the factors that influence the ESG performance of companies so as to provide some references to improve the ESG performance of companies.

2. LITERATURE REVIEW AND HYPOTHESES

Interest expense and borrowing form an "explicit" debt capital cost. In addition, there are also "hidden" debt funding costs, caused by information asymmetry between creditors and debtors. In addition to bearing the "explicit" risks formed by compulsory indicators such as financial information, creditors also need to bear the "hidden" risks brought about by the performance of the corporate environment, the effectiveness of the corporate governance structure, and the performance of society. In consumer-sensitive industries, failure to meet corporate social responsibilities can lead to a decline in their business. Due to the lack of governance ability of the enterprise, the financial performance of the enterprise is crossed and the principal of the creditors cannot be repaid. In order to prevent the "residual loss" caused by the "hidden" risk, the creditor will monitor the corporate governance, and in order for the enterprise to obtain debt

Y. Jiang et al. (Eds.): ICEDBC 2022, AEBMR 225, pp. 128–134, 2022.
https://doi.org/10.2991/978-94-6463-036-7_19

financing more easily, he must take various ways to guarantee his own actions, thus incurring the cost of guarantee. In addition, the risk premium due to information asymmetry also incurs the cost of debt capital (Sheng HongTao, 2007)[1]. Therefore, the cost of supervision, the cost of guarantees, and the cost of risk premium paid by enterprises to obtain bond funds are "hidden" debt costs. Therefore, companies that perform well in the environment, social responsibility, and corporate governance reduce the hidden risk of creditors and reduce the cost of hidden debt. When companies recognize that good ESG performance will have a favourable impact on the cost of capital, they will choose a reasonable way to manage ESG information, so the cost of capital will react to ESG, affecting the level of ESG performance and the motivation for disclosure (Jiali Qu, 2010)[2]. When the debt pressure of the enterprise is greater, the stronger the motivation for the performance of the enterprise ESG, the better the ESG performance, so that the hidden risk borne by the creditor is smaller, and the smaller the cost of debt funds. Therefore, this article proposes a hypothesis.

H1: The higher the level of debt, the better the ESG performance.

Enterprises will be subject to strict government supervision in the process of market-oriented equity financing, and the government will restrict whether enterprises can carry out public financing through hard conditions to restrict whether enterprises can carry out public financing. In addition, corporate image also affects corporate financing outcomes, and studies have shown that a good corporate image is more likely to win the trust of investors and obtain investment. Conversely, investors are reluctant to invest in companies with poor corporate image performance. Lei Guangyong, Lu Xiaoyan and Wantuo argue that the quality of corporate governance, corporate environmental performance and social responsibility performance all affect investor confidence intensity and shareholding ratio by affecting the reputation of enterprises (Wantuo, 2011)[3]. Therefore, in order to obtain more investor funds, companies often improve their corporate image by managing their ESG performance.

H2: ESG performs better when companies need financing.

From the perspective of competitors, with competition being fierce in the product market and the homogenization of products becoming serious, in order to obtain profits, enterprises attract consumers by improving the performance of enterprises ESG. However, in the market where product homogenization is not serious, competition may reduce the information performance because competitors may use important information disclosed by information disclosure to cause harm to listed companies. So, companies will reduce information disclosure, affecting the company's ESG performance. However, if it takes the lead in similar information disclosure, it can also obtain unexpected benefits. Therefore, the company will increase information disclosure (Liu Yan, 2008)[4] to improve the ESG performance of its own enterprises. Consequently, moderate competition is conducive to improving the ESG performance of enterprises; the stronger the degree of competition in the industry, the better the ESG performance of enterprises. This raises the hypothesis.

H3: The more competitive the product market, the better the ESG performance.

From the perspective of corporate governance, the higher the shareholding ratio of independent directors, the more control they have over the enterprise, and the easier it is to lead the company's performance in ESG. Xiao Hailin believes that the proportion of independent directors and the shareholding ratio of executives are positively correlated with corporate social responsibility (Xue Qiong, 2014)[5]. Hu Su also believes that the increase in the proportion of independent directors has a positive role in promoting the level of corporate governance (Hu Su, 2011)[6]. Therefore, the higher the shareholding ratio of independent directors, the better the ESG performance of the company. However, Qin Yihu proposed that product market competition will have a substitution effect on the corporate governance structure. In markets with less competitive products, the supervisory role of the board of directors can contribute to the improvement of ESG performance. However, the shareholding ratio of major shareholders has the effect of stimulating the supervision of insiders by major shareholders on the ESG performance of enterprises on the one hand, and on the other hand, it will induce the motivation of encroaching on their interests. The information effect generated with the increase in market competition has a restraining effect on the motivation of major shareholders to encroach on the interests of major shareholders. Therefore, in a highly competitive environment, the increase in the shareholding ratio of major shareholders will promote the increase in ESG information performance (Qin Yihu, 2010)[7].

H4a: As the shareholding ratio of major shareholders rises, the better the ESG performance of the enterprise.

H4b: In a highly competitive environment, where major shareholder shareholdings rise, the better the ESG performs.

3. RESEARCH DESIGN

3.1. Sample selection and data sources

This paper selects listed companies participating in ESG ratings in various industries from 2015 to 2018 as research objects, and the ESG performance of each company comes from the CSMAR cooperation database Syntao Ronglu. This article argues that product market

competitiveness, corporate debt pressure, and refinancing needs are the main factors affecting the performance of enterprises' ESG, and all three types of data are derived from Guotaian data. Subsequently, the samples were processed by excluding ST and PT companies, a total of ten samples were excluded, and 129 missing data samples were excluded to obtain 1126 samples.

3.2. Model and variable settings

In order to study the changes in the performance of firms under economic motivation and external pressure, this paper constructs a model (1).

$$\begin{aligned} ESG = \beta_0 + &\beta_1 COM + \beta_2 FU + \beta_3 LEV \\ &+ \beta_4 OUTDIRECTOR + \beta_5 CEO \\ &+ \beta_6 SIZE + \beta_7 ROA + \beta_8 NP + \varepsilon \end{aligned} \quad (1)$$

3.3. Definition of explanatory variables

This article adopts the CSMAR database Syntao Rong Lu ESG, and the source of ESG information is public information, divided into three aspects of environmental, social and corporate governance. Each aspect covers positive information and negative information: the company's positive ESG information mainly comes from the company's self-disclosure, including corporate website, annual report, sustainable development report, social responsibility report, environmental report, announcement, media interview, etc. The negative ESG information of enterprises mainly comes from enterprise self-disclosure, media reports, regulatory authority announcements, and social organization investigations. The Ronglu ESG information evaluation system includes a three-level index system. The first-level indicators are the three dimensions of environmental, social and corporate governance. The secondary indicators are 13 categorical issues under environmental, social and corporate governance. In the ESG evaluation system, according to the importance and impact of different indicators on the enterprise, each ESG evaluation index will be given different weights according to the different industries. After evaluating and scoring the ESG information, the evaluation system will weigh the overall ESG performance score of a company.

3.4. Explanatory variables

3.4.1. Product market competition

This paper draws on the methods of Qin Yihu, Yi Zhihong, and Jiang Fuxiu, and use the Heffendaal-Hirschmann Index (HHI) to indicate the degree of market competition in the product market. In academia, the literature on industrial organization theory often uses two indicators to measure the degree of competition in the product market, one is the market concentration ratio (CRn) and the other is the cross-price elasticity index. However, market concentration ratios do not adequately reflect the size distribution of firms.Data for the cross-flexibility index are also difficult to obtain. The $HHI\sum_i^n (Xi/X)^2$ can reflect both product differences between companies and the distribution of enterprise size and its data are easy to measure. Among the formula, this article uses the main business income to represent Xi, and $X = \sum_i^n Xi$ is the total income of the main business of i company's industry. (Xi/X) is the industry market share occupied by the company. When the HHI index is larger, the stronger the monopoly of the product market, the smaller the HHI index, and the fiercer the market competition. Among them, those above the average number of HHI are those with weak competition, and those below the average of HHI are those with strong competition.

3.4.2. External financing demand

The commonly used method of measuring financing needs is the calculation method proposed by Maksim Vic (1998): the difference between corporate growth and achievable endogenous growth is taken as the financing demand, and the larger the value, the higher the financing needs of the enterprise. The formula is $CSG= \frac{A_t - A_{t-1}}{A_t} - \frac{ROE_t}{1-ROE_t}$ (A is the asset size), On this basis, external funding demand greater than the annual average of the industry is recorded as 1, otherwise it is recorded as 0.

3.4.3. Debt levels

This article draws on the practices of scholars such as Jiang Gaofeng and Shen Hong Tao, and takes the asset-liability ratio of enterprises this year as an agent indicator of corporate financial pressure.

3.4.4. Proportion of independent directors

This paper draws on the practice of scholars such as Shen Hong Tao and uses the ratio of the number of independent directors to the total number of board members as an agent indicator.

3.5. Control variables

Referring to previous research experience, this paper controls other factors that affect ESG information, including the CEO concurrently serving as chairman, the proportion of independent directors, the size of the company, the return on assets, and the nature of the company. At the same time, control different years and industries. The specific meanings of variables are shown in Table 1 below.

Table 1. Control Variable description and value method

Control Variable description and value method		
-	Proxy name	Definition
Control variables	CEO (if the CEO is a broad director)	Concurrently take one,if not take zero
	SIZE (corporate size)	The logarithm of the total assets of the enterprise
	ROA	Net income/total assets
	NP	State-owned holdings take 0, and non-state-controlled holdings take 1

4. EMPIRICAL RESEARCH

4.1. Descriptive Statistics

According to the result of descriptive statistics , the overall ESG performance of the market is low, and the ESG performance varies greatly among enterprises. The industry ESG score averaged 47.35, less than half of the total score. The maximum ESG score of 66.75 is only two-thirds of the total score.Secondly, the standard deviation of ESG is 5.01 indicating that the ESG performance varies greatly among enterprises. And the overall ESG performance of enterprises is on the rise, and the growth rate has accelerated after 2017. In terms of financing needs, from the perspective of whether there is financing demand, in the four years from 2015 to 2018, only 13.5% of enterprises have external financing intentions. Judging from the CEO's tenure, only 3.3% of the companies have a CEO concurrently serving as the chairman of the board in four years, which proves that most companies have done a good job in separating management and ownership. From the perspective of debt level, the difference between enterprises is small, but the difference between companies with debt levels and enterprises with extremely low debt levels is quite large. From the perspective of the proportion of independent directors, the proportion of independent directors in three-quarters of enterprises is less than 43%, not more than 50%, and the control of the actual controller on the surface is low.

4.2. Correlation test

The Correlation test shows the person correlation coefficient results between the variables. It can be seen from the figure that the product market competition, the level of corporate debt, and the financing demand and the ESG performance of the enterprise have a strong correlation, in which the corporate debt level, financing demand and the expected assumption are the same, and the product market competition is contrary to the expected assumption, so the correctness of hypothesis 3 needs to be further proved. In addition, the correlation between the company's debt level and financing needs reached 0.66, and it was significant at 1%. Apart from this, the correlation between the level of corporate debt and financing needs reached 0.66, which was significant at 1% and did not exceed the Co-linearity threshold of 0.8, so the Co-linearity between the variables was not serious and would not have a significant impact on the results.

4.3. Multiple regression analysis

Table 2. Regression result

Regression result			
-	(1)	(2)	(3)
-	Full sample	fierce competition	Weak competition
LEV	2.95***	2.44*	4.21**
COM	-1.85**	-10.88	2.58
FU	0.81**	0.72	1.04
CEO	-1.86**	-2.77***	-0.47
OUTDERECTOR	4.88***	5.37**	3.27
SIZE	0.35***	0.25*	0.45***
ROA	-1.27	-2.02	1.54
NP	-0.47*	-0.57	-0.52
CONSTANT	33.38**	44.41***	24.06**
F	5.85	-	-
Observations	1,126	647	479
R-squared	0.26	0.21	0.29

Adj R-squared	0.22	0.20	0.24
Industry FE	YES	YES	YES
Year FE	YES	YES	YES

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

Judging from the regression results of Table 2 in total sample, the relationship between corporate debt levels and corporate ESG performance is positive, and it is significant at the 1% level, that is, the higher the company's debt level, the stronger the performance of ESG in winter, the better the performance of ESG. Its regression coefficient of 2.95 supports the study hypothesis 1. Shows that for every 1% increase in corporate debt levels, corporate ESG performance increases by 2.95%.

In Table 2, in the full sample, the financing needs of enterprises are significant at the 5% level, and the coefficient is 0.81, which is consistent with its direction, that verifies hypothesis 2. The results show that when the enterprise has a capital incentive in the current year, and for every additional unit of financing motivation, the ESG performance of the enterprise is numbered 0.81 units, that is, the stronger the financing needs of the enterprise, the better the ESG performance of the enterprise. When the enterprise has financing needs, the level of corporate debt is significant below the ESG variable of 1%, and for every 1% increase in the debt level, the ESG performance increases by 4.87%. Proof that the enterprise has external financing needs.

In The coefficient of industry competition and ESG performance in the full sample in Table 5 is -1.85, which is consistent with the expected direction. Among them, for every unit increase in the degree of market competition, HHI decreases by 1 unit, and the ESG performance of enterprises increases by 1.85.

The proportion of independent directors in Table 5 is positively correlated with the ESG of the enterprise, and it is significant at the level of 1%, and its performance coefficient is 4.88. and the proportion of independent directors increased by 1%, and the ESG performance of enterprises increased by 4.88%. Further analysis, Figure 5 shows that in a highly competitive market, the higher the shareholding ratio of independent directors, the more effective the ESG performance of the enterprise, and it is significant at the level of 5%. However, the supervision of independent directors at a weak competitive level is not obvious. H4a was validated.

5. FURTHER DISCUSSION

Table 3. State-owned, non-state-owned multiple regression analysis

State-owned, non-state-owned multiple regression analysis		
-	State-owned	non-state-owned
LEV	4.2105***	1.4284
COM	-1.1154	-2.0148
FU	1.1346**	0.6211
CEO	-2.1561*	-2.0130*
OUTDERECTOR	3.9960	5.5531*
SIZE	0.3925***	0.3220*
ROA	1.2026	-5.9400
NP	-	-
CONSTANT	30.6823***	35.1372***
F	3.74	3.61
Observations	536	590
R-squared	0.26	0.27
Adj R-squared	0.23	0.21

The study found that the factors that affect ESG performance between state-owned and non-state-owned enterprises differ statistically and economically. Zhang Tie sheng believes that among non-state-owned enterprises, internal control has a stronger positive effect on the disclosure of social responsibility information (Zhang Tie sheng, 2017)[8]; Zhang Jun believes that state-owned listed companies have lower investment in environmental protection than non-state-owned listed companies (Zhang Jun 2016)[9]. The findings in Table 3 also show that the stimulating effect of state-owned enterprises and non-state-owned enterprises on ESG performance is quite different in different factors. The debt level of non-state-owned enterprises, financing demand has a strong stimulating effect on corporate ESG (non-state-owned/state-owned debt level 4.21/1.42 financing demand 1.34/0.62), and is more statistically significant (non-state-owned/state-owned: debt level 1%/>10% Financing demand: 5%/>10%). The reason as

follows. State-owned enterprises tend to have less pressure on financing needs and debt levels, because some or all of the capital reserves of such enterprises come from government investment. And because its guarantor is the state, their corporate image has a better effect in the minds of investors, which make it easy to raise funds in financial intermediaries. Thus, whatever it is investment or bond issuance, the risk for creditors or investors is small. However, for non-state-owned enterprises, from the perspective of investors and creditors, whether it is institutional investors or individuals are more inclined to decide whether to finance the company from the hard indicators and soft external indicators of the enterprise. For non-state-owned enterprises, in addition to meeting the hard indicators stipulated by the government, they must also maintain their corporate image. Therefore, non-state-owned enterprises will be more resilient to ESG in terms of debt level, financing needs, and ESG. Figure 3 shows that and the debt level and financing needs have a positive and significant impact on the performance of non-stated enterprises at the 1% and 5% levels, respectively. That is, the higher the level of debt, the stronger the financing demand, and the higher the ESG performance, but the positive effect of product market competition on non-state-owned enterprise ESG is not significant.

6. ROBUSTNESS TESTING

In the correlation test, it is found that the signs of product market competition are opposite to their direction, but the degree of market competition is consistent with their direction in multiple regression analysis. In order to verify the authenticity of its direction of action on ESG, the total number of companies in the industry (N) is used instead of the Hirschman index (HHI) for multiple regression. For N, the more companies in the industry, the fiercer competition in the production level market.

Table 4. Product Market Competition N regression analysis

Product Market Competition N		
VARIABLES	in N as a standard	in HHI as a standard
LEV	2.9039***	2.95***
FU	0.8852**	0.81**
N	0.0104*	-1.85**
OUTDIRECTOR	5.5301***	4.88***
SIZE	0.3148***	0.35***
ROA	-0.7230	-1.27
NP	-0.4600	-0.47*
Constant	31.9363***	33.381**
Observations	1,119	1126
R-squared	0.2594	0.26
Industry FE	YES	YES
Year FE	YES	YES

t-statistics in parentheses

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

7. CONCLUSION

In this paper, we mainly study the influencing factors of enterprise ESG performance from both economic and non-economic factors. Among them, economic factors include corporate financial leverage, company size, financing needs, but also non-economic factors such as the degree of market competition, the ratio of independent directors, and the nature of the company.

Studies have shown that the economic motivation of enterprises is one of the important factors affecting ESG performance, among which (1) the greater the financial leverage, the better the ESG performance of the enterprise. (2) As the financing needs of enterprises increase, the better the performance of ESG. In addition, the ESG performance of enterprises is also affected by external pressures, (3) the stronger the degree of market competition, the better the ESG performance of enterprises. The study also found that corporate governance also has an impact on ESG, (4) in a market with strong market competition, the higher the proportion of independent directors, the better the ESG performance of the company. (5) ESG performance is also affected by the size of the enterprise, and the larger the enterprise size, the better the ESG performance. In terms of the nature of property rights, (6) the level of debt and financing needs promote non-state-owned enterprises significantly and strongly compared with state-owned enterprises.

The research results can provide reference opinions for ESG investors, help enterprise managers control their own enterprise level, and provide opinions for the country to strengthen ESG supervision.

REFERENCES

[1] Shen Hong Tao, H. T. (2007) Company Characteristics and Corporate Social Responsibility Information Disclosure: Empirical Evidence from

Listed Companies in China[J], Journal of Accounting Research, (03):9-16, 93.

[2] Meng Xiaojun, Xiao Zuoping, Qu Jiali. (2010) The Interaction between CSR Information Disclosure and Capital Cost: An Analytical Framework Based on the Perspective of Information Asymmetry[J]. Journal of Accounting Research, (09):25-29, 96.

[3] Wan Tuo. (2011) Whether Social Responsibility Reporting and Assurance Can Deliver Effective Signals?——Based on the Theory of Corporate Reputation[J]. Audit Research, (04): 87-93.

[4] Liu Yan. (2008) An Empirical Study on Product Market Competition and Information Disclosure Quality[J]. Economic Sciences, (01): 92-103.

[5] Xue Qiong. (2014) Corporate Governance, Corporate Social Responsibility and Corporate Performance[J]. Journal of Finance and Economics, (12): 91-98.

[6] Hu Su. Institutional Environment, (2011) Independent Directors and Long-term Borrowing and Financing: Empirical Evidence from Chinese Listed Companies[J]. Journal of Shanxi University of Finance and Economics, (04): 106-114.

[7] Qin Yihu. (2010) Product Market Competition, Corporate Governance and Information Disclosure Quality[J]. Management World, (01): 133-141, 161, 188.

[8] Zhang Tiesheng. (2017) Disclosure of Information on Internal Control, Property Rights and Social Responsibility: Empirical Evidence from Chinese Listed Companies[J]. Journal of Accounting Research, (10): 86-92, 97.

[9] Zhang Jun. (2016) Environmental Regulation, Property Rights and Corporate Environmental Protection Investment[J]. Journal of Arid Land Resources and Environment, 30(12): 47-52.