

# Research on The Influence of ESG Information Disclosure on Enterprise Financial Risk

-- Taking Pharmaceutical Industry as An Example

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**Abstract:** Based on the data of Chinese A-share pharmaceutical industry companies from 2017 to 2020, this paper analyzes the impact of ESG information disclosure on financial risk. The results show that good ESG information disclosure can significantly reduce the financial risk of enterprises. The effect of ESG information disclosure on financial risk control of non-state-owned enterprises is more prominent, and the higher the degree of marketization, the more obvious the positive effect.

**Keywords:** ESG information disclosure; Financial risk; The pharmaceutical industry.

## 1. Introduction

The concept of ESG was first proposed by the United Nations Environment Programme (UNEP) in 2004. It aims to promote the sustainable development of the global social economy and encourage enterprises to pay attention to ecological and environmental protection, fulfill their social responsibilities and improve their governance. The basic framework of ESG information disclosure in China was clarified for the first time in the "Code of Governance for Listed Companies" revised by China Securities Regulatory Commission in June 2018. In 2020, The State Council issued a Guideline on Building a Modern Environmental Governance System, requiring enterprises to disclose environmental governance information and establish a sound corporate social responsibility system to improve the country's ESG information disclosure system. In April 2022, we issued and officially implemented the first ESG group standard, the ESG Disclosure Guidelines for Enterprises, on June 1. With the establishment and improvement of ESG information disclosure system, more and more domestic listed companies begin to practice the ESG concept and make ESG information disclosure. According to the China ESG Development Report, the number of Chinese A-share listed companies that released ESG reports has been growing since 2011, and a total of 1,130 A-share listed companies released ESG-related independent reports in 2021. Among them, the ESG disclosure rate of Shanghai and Shenzhen 300 has also increased year by year, with nearly 90% of enterprises making ESG information disclosure in 2021. Compared with traditional environmental accounting and social responsibility information disclosure, ESG information disclosure content is more comprehensive and specific, and can better reflect the non-financial information of enterprises. Zou Chunyan (2016)[1] believes that non-financial information of an enterprise is an important factor affecting financial risk. Therefore, in theory, the better the quality of corporate ESG disclosure, the lower the probability of financial risk. However, through literature review, we find that the impact of ESG information disclosure on financial risk of Chinese enterprises still needs further study (Zhang Hui, 2022)[2]. This paper selected the financial data and ESG

rating data of A-share listed companies in China's pharmaceutical industry from 2017 to 2020 as the research object, and tried to explore the relationship between ESG information disclosure and financial risk and its mechanism, so as to provide theoretical support for enterprises to actively carry out ESG information disclosure.

## 2. Literature Review

At present, ESG related research mainly focuses on the impact of ESG on enterprise value and financial performance. About The research of Diab (2018)[3], Giese and Lee (2019)[4], Zhang Lin and Zhao Haitao (2019)[5], Alareeni et al. (2020)[6], Xu Guanghua et al. (2022)[7], Wang Linlin et al. (2022) [8], Wang Bo and Yang Maojia (2022) [9] showed that, Good ESG performance is conducive to improving enterprise value. However, Patrick (2017)[10] found through empirical research on German enterprises that although active ESG practice can improve the return on assets of enterprises, it cannot improve the market value of enterprises. Using the data of Chinese A-share listed companies from 2008 to 2019, Yi Lingxue et al. (2022)[11] found that although ESG practice would reduce enterprise value in the initial stage, ESG practice had a positive lagged effect on enterprise value in the long run. Dalal et al. (2019)[12], Ahmad (2021)[13], Quresh et al. (2021)[14], Zhang Xianhua et al. (2021)[15] and Ren Zixian et al. (2021)[16] found that the implementation of ESG would have a positive impact on the financial performance. However, the empirical results of Landi et al. (2018)[17] showed that ESG did not promote the improvement of corporate financial performance. Duque-Grisales et al. (2021)[18] believe that ESG contradicts the goal of maximizing shareholders' profits, so enterprises' excessive emphasis on ESG will have a negative impact on financial performance.

Enterprise financial risk runs through enterprise production and operation, and is an important factor affecting the survival and development of enterprises. In recent years, the relationship between corporate ESG and financial risk has gradually attracted the attention of scholars. Friede et al. (2015)[19] By reviewing the existing literature, it is found that good ESG performance of enterprises can reduce financial risks and improve financial performance. Godfrey (2005)[20]

pointed out that a good ESG performance of an enterprise will increase the reputation and goodwill of the enterprise, and provide insurance-like protection for the cash flow of the enterprise, thereby reducing the financial risk of the enterprise to a certain extent. Kumar (2016)[21] According to the research of Kumar et al., companies with better ESG responsibility performance can send more positive signals to the outside world, enhance enterprise value, and the company's future financial risk and violation risk will be significantly reduced. Shakil (2021)[22] Analysis of data from 70 global oil and gas companies from 2010 to 2018 shows that good ESG performance reduces financial risk. And Oikonomou (2012)[23], Sassen (2016)[24] And Chollet and Sandwidi (2018)[25] found that there was a significant negative correlation between ESG performance and financial risk. Muyuan Qiu and Hong Yin (2019)[26] believed that the performance of ESG responsibilities by enterprises is regarded as excessive performance of responsibilities for the sake of personal reputation, which will occupy the resources of technological R&D and innovation of enterprises, so the performance of ESG responsibilities will not have a positive impact on the financial status of enterprises. Some scholars have discussed the impact of a single dimension of ESG on corporate financial risk. For example, Cailing Xu (2017)[27] Based on the relevant data of listed coal companies in China from 2016 to 2018, it was empirically found that the disclosure level of environmental accounting information could not reduce the level of corporate debt and debt service risk. Han Fang and Yang Liu (2021)[29] Taking A-share listed companies that disclosed social responsibility information in China from 2008 to 2018 as the research sample, the empirical findings show that corporate social responsibility information disclosure can significantly reduce the occurrence of financial risks. Quan Xiaofeng et al. (2015)[30] believed that the "embellishment" effect of corporate social responsibility information disclosure may hide bad news, thus increasing the probability of financial risks of enterprises. Yu Fusheng et al. (2008)[31], Zhang Dianfeng (2014)[32] Empirical evidence shows that improving corporate governance structure not only helps enterprises to select excellent managers, but also restricts the high-risk actions of management, thereby reducing the potential financial risks of enterprises.

In conclusion, scholars may have slightly different conclusions due to the differences in countries, regions or industries where samples are located and different economic indicators, but in most cases, ESG information disclosure can have a positive impact on enterprises. At the same time, the research on ESG in China started relatively late. Although the empirical research on ESG information disclosure and corporate financial risk has gradually increased in recent years, most of the research is conducted from a single dimension of ESG (Environmental, Social and Governance), and there are few independent studies on the pharmaceutical industry. Based on the research of domestic and foreign experts and scholars, this study takes listed companies in the pharmaceutical manufacturing industry as an example to explore the impact of ESG information disclosure on corporate financial risk.

### 3. Theoretical Analysis and Research Hypothesis

Enterprise financial risk is caused by the uncertainty of

external business environment and internal business activities. ESG information disclosure is a supplement to traditional financial report information in the form of non-financial information. From the perspective of enterprises, on the one hand, the active practice of environmental protection, social and corporate governance is not only conducive to win the trust of the government to obtain policy support, but also conducive to win the public goodwill to improve the economic benefits of enterprises, improve the financial situation, and then reduce the possibility of financial risks. On the other hand, ESG information disclosure can bring environmental and social issues into the corporate governance system, so that the management can pay attention to the implementation and development of environmental and social issues of the enterprise while paying attention to the economic development of the enterprise, so that the management can have their own cognition of the potential negative information of the enterprise operation. To avoid investors' panic caused by the sudden explosion of negative information such as environmental and social issues, which may lead to the risk of stock price crash. In addition, the better ESG performance of an enterprise, the higher transparency of accounting earnings information (Xu Xiangbing, 2022)[33], the less feasible it is for enterprises to commit financial fraud. From the perspective of external investors, ESG information disclosure can provide investors with more effective information and help alleviate the information asymmetry between external investors and internal managers. Relevant studies show that more and more companies believe that it is valuable to fulfill ESG responsibilities, and ESG responsibility performance is an important part of corporate risk analysis and opportunity analysis, which will become an important tool for investors to make investment decisions (Wang Jing, 2019)[34]. Enterprises with good ESG information disclosure can make investors perceive corporate managers' higher social responsibility and corporate management level, increase their trust in corporate management, reduce their risk estimation, and then reduce the cost of equity capital and financing risk. Therefore, the following hypotheses are put forward:

Hypothesis 1: Good ESG disclosure can reduce financial risk

Alexander and Thistle (1999)[35], Benlemlih and Girerd-Potin (2017)[36] Studies have found that large scale companies tend to have stronger financial risk management capabilities in the market. Under the background of current market liquidity contraction, small-scale enterprises are more difficult to grasp the future capital flow and need to prepare more cash assets to cope with possible capital pressure (LAN Yulin, 2011)[37]. Obviously, small-scale enterprises are bound to be more active in improving the quality of ESG information disclosure to gain the trust of investors and the support of government policies to alleviate the financial pressure of enterprises, and thus reduce the financial risk of enterprises, and the effect may be more significant than large-scale enterprises. Therefore, this paper puts forward the following hypotheses:

Hypothesis 2: Compared with large-scale enterprises, small-scale enterprises with good ESG information disclosure can reduce financial risk more

State-owned enterprises need to stand at the national level as a model to fulfill their social responsibilities. They usually assume more responsibilities in the society and are more strictly regulated by the government, while non-state-owned

enterprises mainly aim at improving economic benefits (Wang Bo and Yang Jiamao, 2022)[38]. Therefore, compared with state-owned enterprises, the public has lower expectations for non-state-owned enterprises to fulfill their ESG responsibilities. At this point, if the state-owned enterprises are not involved in social governance in an unexpected way, on the one hand, investors will think that the enterprises have more development potential and investment value. On the other hand, it can also strengthen the government's trust in the enterprise, so that the enterprise is very likely to get more policy dividends, and then effectively reduce the possibility of the occurrence of corporate financial risks. Therefore, this paper proposes the following hypotheses:

Hypothesis 3: Compared with state-owned enterprises, non-state-owned enterprises with good ESG information disclosure can reduce corporate financial risk more

Chen Cheng et al. (2022)[39] It is believed that in regions with a high marketization process, corporate social responsibility governance information will be more authentic, reliable and transparent, and investors and consumers will pay more attention to and recognize corporate ESG information disclosure. Therefore, enterprises that actively fulfill ESG responsibilities in regions with high marketization process will be more favored by investors and consumers, which will reduce the financing risk and business risk of enterprises. Han Fang and Yang Liu (2021)[28] The study showed that in the regions with higher marketization process, market funds are more abundant, the level of financial industry development is higher, the channels for obtaining market information are richer and more convenient, and the efficiency of obtaining capital supply is also higher. Therefore, in regions with a higher degree of marketization, enterprises enhance financial

transparency by performing ESG and have higher motivation to mitigate financial risks. Therefore, the following hypotheses are proposed:

Hypothesis 4: Compared with enterprises in regions with low marketization degree, enterprises in regions with high marketization degree and good ESG information disclosure can reduce financial risk more

## 4. Research Design

### 4.1. Sample Selection and Data Sources

Listed companies in China's A-share pharmaceutical industry from 2017 to 2020 were selected as the research samples. When selecting the sample, we excluded ST, ST\* companies, and some companies with missing variables, and a total of 122 sample companies were finally used for analysis. The ESG rating data used in this study were obtained from WIND database, the financial data were obtained from CSMAR, and the marketization level was obtained from China Provincial Marketization Index database.

### 4.2. Variable Selection

(1) Explained variables. The Z-value proposed by Edward Altman (1968), which is widely used at present, is used to measure the financial risk of enterprises. A larger Z value indicates a lower financial risk, while a smaller Z value indicates a higher financial risk. The Z value is calculated using the following formula:  $Z = 1.2 (\text{working capital}/\text{total assets}) + 1.4 (\text{cumulative retained earnings}/\text{total assets}) + 3.3 (\text{EBIT}/\text{total assets}) + 0.6 (\text{market value of owner's equity}/\text{total liabilities}) + 0.999 (\text{sales revenue}/\text{total assets})$ .

**Table 1.** Table of Variable Definitions

	The variable name	Variable symbol	Variable definitions
Explained variables	Financial risk	Z-score	Business financial risk
Explanatory variables	ESG rating	ESG	ESG rating, from excellent to bad into "AAA -- C" 9 levels, corresponding to the assignment of 9-1 points
Control variables	Asset-liability ratio	Lev	Total liabilities/total assets
	Development capacity	IRM	Growth rate of operating revenue = $((\text{current year operating revenue} - \text{last year operating revenue})/\text{total operating revenue of last year}) \times 100\%$
	Cash flow capacity	Cash	Cash to total debt ratio = $\text{Cash flow from operating activities}/\text{total debt}$
	Board independence	Indratio	The percentage of independent directors on the board
	Board size	Board	Number of board members
	The enterprise scale	Size	Based on the practice of Zhang Lin and Zhao Haitao (2019)[5], the natural logarithm of the total assets of enterprises at the end of the year is taken, which is greater than the median, and $\text{Size}=1$ ; Less than or equal to the median, $\text{Size}=0$ ;
	Property rights	SOE	State-owned enterprises, $\text{SOE}=1$ ; For non-state-owned enterprises, $\text{SOE}=0$
	Degree of marketization	MP	Dummy variable, according to the ranking of marketization indicators of each province in China Marketization Index Report by Province (2019), the marketization index of the province is 1 if it is larger than the annual median, and 0 if it is not.

(2) Explanatory variables. According to the public disclosure data of enterprises, reports of relevant departments,

and data of news media, Huazheng constructed the ESG evaluation system by referring to the international mainstream SG evaluation system and combining the characteristics of the Chinese market. Among the existing ESG evaluation systems for listed companies in China, the ESG evaluation system has the advantages of wide coverage and fast update frequency (Gao Jieying et al., 2021)[40]. Therefore, this paper selects the ESG rating data of Huazheng to measure the quality of ESG information disclosure. Huazheng divided ESG rating into 9 grades from excellent to bad: "AAA-C". The higher the value of ESG rating, the better the quality of ESG information disclosure, which was assigned 9-1 in this paper.

(3) Control variables. In this paper, the asset-liability ratio, development ability, cash flow ability and the size and independence of directors are taken as control variables. In the heterogeneity analysis, considering the influence of enterprise size, enterprise nature and degree of marketization on the correlation between ESG rating and corporate financial risk, this paper selected three specific indicators of enterprise size, enterprise nature and marketization index to group.

### 4.3. Model Construction

To test the impact of ESG information disclosure on corporate financial risk, the following regression model is constructed in this paper:

$$Z\text{-score}_{i,t} = \beta_0 + \beta_1 \text{ESG}_{i,t-1} + \beta_2 \text{Control variables}_{i,t-1} + \varepsilon_{i,t}$$

Where,  $i$  denotes company;  $t$  denotes year;  $\beta_0$  Represents the intercept term;  $\beta_1$  Denotes the regression coefficient of the explanatory variable,  $\beta_2$  Denotes the regression coefficient of the control variable, and  $\varepsilon$  denotes the residual term. At the same time, referring to Zhang Zhaoguo (2013)[41] Take the independent variables as the values of the previous year, so as to avoid the possible endogeneity problem between the financial risks of enterprises and financial data.

## 5. Empirical Analysis

### 5.1. Descriptive Statistics

The descriptive statistics of variables are shown in Table 2. As can be seen from the table, the maximum value of financial risk (Z value) of sample companies is 107.113, the minimum value is -1.500, the median value is 4.071, and the mean value is 6.943, indicating that the financial risk level of listed companies in the A-share pharmaceutical industry has a large gap, but the overall situation is optimistic. The mean value of ESG is 6.480, and the standard deviation is 1.222, indicating that there are great differences in ESG information disclosure performance among different enterprises. At the same time, according to the ESG evaluation system of Huazheng, the overall disclosure of ESG information of Chinese A-share pharmaceutical companies is relatively complete, and the ESG performance is good. The mean asset-liability ratio (Lev) of the sample enterprises was 34.213, indicating that on the whole, the external funds of listed companies in the pharmaceutical industry were more reasonable. The median of the business revenue growth rate (IRM) of the sample enterprises is 13.075, and the average is 17.645, indicating that the overall development of A-share listed companies in the pharmaceutical industry is good. The average value of CASH total debt ratio (CASH) is 0.313, indicating that the cash flow generated by the business activities of listed companies in the pharmaceutical industry on the whole needs to be improved to pay off the debt. In A-share listed companies in the pharmaceutical industry, the number of independent directors accounts for 37% of the board of directors on average, and the size of the board of directors is generally small. The average value of property right (SOE) of the sample enterprises is 0.309, indicating that most of the A-share pharmaceutical enterprises are non-state-owned enterprises, and the average value of the degree of marketization (MP) is 0.754, indicating that most of the A-share pharmaceutical enterprises are distributed in areas with a high degree of marketization.

**Table 2.** Descriptive statistics of main variables

variable	Sample size	The minimum value	The maximum	The average	The standard deviation	The median
Z	488	1.500	107.113	6.943	9.578	4.071
ESG	488	3.000	9.000	6.480	1.222	6.000
LEV	488	3.050	88.580	34.213	18.642	31.490
IRM	488	59.680	330.290	17.645	34.582	13.075
CASH	488	0.940	4.460	0.313	0.475	0.180
IND	488	30.000	60.000	37.224	5.039	33.330
BOARD	488	3.000	14.000	4.367	1.633	4.000
SIZE	488	0.000	1.000	0.484	0.500	0.000
SOE	488	0.000	1.000	0.309	0.463	0.000
MP	488	0.000	1.000	0.754	0.431	1.000

### 5.2. Correlation Analysis

The results of variable correlation analysis are shown in Table 3. In the table, the correlation coefficient between ESG and Z value is 0.171, which is significant at 1% level, that is, there is a positive relationship between ESG rating results and Z value of sample enterprises, and the larger the Z value, the

smaller the financial risk of enterprises, indicating that good ESG information disclosure of enterprises can reduce the financial risk. Hypothesis 1 has been preliminarily verified. In addition, the table shows that the asset-liability ratio, cash flow capacity, board of directors and enterprise size can all have a significant impact on the financial risk of the enterprise.

**Table 3.** Pearson Correlation - Standard format

variable	The average	The standard deviation	Z	ESG	LEV	IRM	CASH	IND	BOARD	MP	SIZE	SOE
Z	6.943	9.578	1									
ESG	6.48	1.222	0.171 **	1								
LEV	34.213	18.642	0.438 **	0.086	1							
IRM	17.645	34.582	0.033	0.001	0.031	1						
CASH	0.313	0.475	0.455 **	0.174 **	0.535 **	0.023	1					
IND	37.224	5.039	0.047	0.055	0.045	0.046	0.103 *	1				
BOARD	4.367	1.633	0.105 *	0.175 **	0.144 **	0.061	0.024	0.068	1			
SIZE	0.484	0.5	0.095 *	0.073	0.345 **	0.074	0.171 **	0.051	0.104 *	1		
SOE	0.309	0.463	0.073	0.180 **	0.123 **	0.053	0.129 **	0.027	0.295 **	0.062	1	
MP	0.754	0.431	0.045	0.033	0.04	0.001	0.109 *	0.188 **	0.079	0.085	0.094 *	1

\* p &lt; 0.05 \*\*p &lt; 0.01

### 5.3. Analysis of Regression Results

Table 4 reports the regression results of the model. According to columns (1) and (2): The regression coefficient of ESG variable is 1.341 when no control variable is added, and 0.837 when control variable is added, and both of them are significantly positive at 1% level, indicating that ESG information disclosure will have a significant impact on financial risk. In other words, if enterprises pay attention to environmental protection, social responsibility implementation and corporate governance structure adjustment in the process of production and operation, ESG information of enterprises will have a certain inhibitory effect on financial risk, and enterprises are less likely to face financial risk, which is consistent with the conclusion in Table 3. (3) and (4) are the grouped regression results of enterprise size. The ESG coefficient of large-scale enterprises is 0.511, and that of small-scale enterprises is 0.756, both of which fail the significance test. It indicates that in the pharmaceutical industry, enterprise size has no obvious influence on the correlation between ESG and financial risk, and hypothesis 2 has not been verified. (5) and (6) list the grouped regression results of property rights. In the state-owned sample

enterprises, the coefficient of ESG is not significant, while the coefficient of ESG of non-state-owned enterprises is 1.167, which is significant at the level of 1%. This reflects that for non-state-owned pharmaceutical listed companies, ESG information disclosure can effectively reduce the probability of financial risk. ESG information disclosure has no effect on inhibiting the occurrence of financial risks, which may be related to the weak motivation of state-owned enterprises to obtain preferential treatment by performing ESG. Because of the particularity of the nature of state-owned enterprises, they can always enjoy preferential treatment from policies and society, which weakens the connection between their ESG and corporate financial risks. Hypothesis 3 is verified. According to the grouped regression results of the degree of marketization in column (7) and (8), the ESG coefficient of sample enterprises with a high degree of marketization is 1.096, which is significant at the 1% level, while the ESG coefficient of sample enterprises with a low degree of marketization is not significant, indicating that only in the region with a high degree of marketization, Good disclosure of ESG information can promote enterprises to reduce financial risks. Hypothesis 4 is verified.

**Table 4.** Group regression results

	(1)	(2)	size=0 (3)	size=1 (4)	SOE=0 (5)	SOE=1 (6)	MP=0 (7)	MP=1 (8)
ESG	1.341 ** (3.831)	0.837 ** (2.613)	0.756 (1.756)	0.511 (1.055)	1.167 ** (2.78)	0.283 (0.668)	0.1 (0.220)	1.096 ** (2.772)
LEV		0.142 ** (5.676)	0.091 * (2.015)	0.191 ** (6.143)	0.144 ** (4.322)	0.173 ** (5.490)	0.090 ** (2.932)	0.161 ** (5.050)
IRM		0.007 (0.684)	0.013 (0.832)	0.001 (0.049)	0.011 (0.819)	0.004 (0.225)	0.005 (0.314)	0.011 (0.843)
CASH		5.912 ** (6.203)	8.620 ** (6.927)	0.799 (0.503)	6.956 ** (6.101)	1.955 (1.101)	11.995 ** (8.949)	4.585 ** (3.977)
IND		0.002 (0.021)	0.024 (0.236)	0.05 (0.437)	0.024 (0.243)	0.104 (0.985)	0.06 (0.72)	0.012 (0.116)
BOARD		0.491 * (2.012)	0.176 (0.444)	0.549 (1.783)	1.039 ** (2.958)	0.007 (0.026)	0.441 (1.393)	0.419 (1.386)
SIZE		1.038 (1.289)			0.688 (0.656)	2.382 * (2.179)	1.542 (1.676)	0.861 (0.822)
SOE		0.032 (0.037)	1.236 (1.000)	1.363 (1.127)			1.271 (1.244)	0.734 (0.670)
MP		0.227 (0.254)	0.639 (0.461)	0.235 (0.199)	0.495 (0.448)	1.118 (0.831)		
R 2	0.029	0.278	0.352	0.232	0.325	0.221	0.599	0.247

## 5.4. Robustness Test

In order to investigate the robustness of the research results, this study refers to Xu Guanghua et al. (2022)[7]A new method was adopted for ESG score assignment, that is, the ESG score was divided into three groups, A, B, and C, according to the nine-level classification of Huazheng AAA-

C, with a score of 3-1 respectively. After replacing the original explanatory variables, the regression results were shown in column (2) of Table 5. After replacing the original explanatory variables, the regression results are shown in column (2) of Table 5. It is found that the results are basically consistent with the results before replacement in column (1), indicating the robustness of the regression results in this paper.

**Table 5.** Robustness test of reassigned ESG index

	(1)	(2)
ESG	0.837 ** 2.613	2.306 ** 3.038
LEV	0.142 ** (5.676)	0.142 ** (5.683)
IRM	0.007 (0.684)	0.006 (0.577)
CASH	5.912 ** 6.203	5.800 ** 6.084
IND	0.002 (0.021)	0.008 (0.100)
BOARD	0.491 * (2.012)	0.516 * (2.114)
SIZE	1.038 1.289	0.106 (0.123)
SOE	0.032 (0.037)	0.991 1.234
MP	0.227 0.254	0.155 0.174
R2	0.278	0.282

## 6. Conclusions and Recommendations

In this study, 122 listed companies in China's A-share pharmaceutical industry from 2016 to 2020 were selected as research samples to empirically test the impact of ESG information disclosure on financial risk. The findings are as follows: good ESG information disclosure can significantly reduce financial risk; In the heterogeneity analysis, it was found that the inhibitory effect of ESG information disclosure on the financial risk of listed companies in the pharmaceutical industry was mainly in non-state-owned enterprises and enterprises with high degree of regional marketization, while the moderating effect of enterprise size on the two was not significant. Based on the conclusions of this study, the following suggestions are put forward:

From the government level, the government should continue to improve enterprise information disclosure ESG, further from, specific and index ESG disclosure content, strengthen the ESG with strength of the third party cooperation, a rating agency, to use its rating wide coverage, fast update frequency of helping the government to strengthen the supervision and management of enterprise information disclosure of ESG, So as to improve the authenticity of ESG information disclosed by enterprises. At the same time, the government should timely give tax policies and other incentives to enterprises with good ESG information disclosure, and timely manage and guide enterprises with poor ESG information disclosure, so as to improve the enthusiasm of enterprises to disclose ESG information.

At the enterprise level, non-state-owned enterprises and enterprises located in a higher degree of marketization should make use of their own characteristics or regional advantages

to actively practice ESG concepts, so as to reduce their own financial risks and promote their long-term development. In addition, the management of enterprises should ensure that their operations comply with laws, regulations and ethical standards, constantly deepen the internal transformation and development of enterprises, promote the quality and efficiency of various operations, and increase the competitiveness of the company. Establish and improve the enterprise ESG management system and organizational system, actively promote ESG governance, and realize the sustainable development of the enterprise itself, society and environment.

From the aspect of investors, corporate good ESG disclosure can significantly reduce the financial risk, to reduce financial risk by the invested enterprise to bring the possibility of investment risk, investors should consider when choosing investments not only the enterprise financial performance, but also to consider the enterprise environmental protection and social responsibility performance and corporate governance of financial performance. Investors should take ESG performance into consideration when making investment decisions, which will also help to guide more enterprises to voluntarily disclose ESG information.

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