The Darkness of Earnings Management: Earnings Management and Information Disclosure of Enterprises' ESG

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Abstract. With the increasing social attention paid to the environment, Environmental, Social, and Governance (ESG) has been valued by the government and social investors. Earnings management, as a form of financial fraud, has a negative impact on all aspects of enterprises. Based on the ESG disclosure of Bloomberg's assessment and the data of A-share listed companies in the Shanghai stock market from 2008 to 2018, this paper uses the fixed effect model of panel data to fix industries and years and explores the impact of earnings management on information disclosure of enterprises' ESG. The results show that the improvement in earnings management significantly weakens ESG disclosure. According to further analysis, it is found that the earnings management of state-owned enterprises compared with private enterprises has a greater weakening effect on ESG disclosure. Meanwhile, in terms of management structure, compared with the company where the chairman and general manager are not the same person, the earnings management of the company with CEO duality has a greater weakening effect on ESG disclosure.

Keywords: Earnings Management; Enterprises' ESG; Information Disclosure; Listed Companies.

1. Introduction

Environmental, Social, and Governance (ESG) are vital criteria to measure whether listed companies have enough sense of social responsibility. In the 21st century, environmental problems are the focus of governments worldwide. The implementation of ESG is in line with the goal of green development, so the more governmental emphasis has been paid to it. Some developed countries have already issued standards for ESG information disclosure and strengthened the supervision of enterprises. For example, the European Union has raised the "carbon barrier" by establishing a high-standard ESG system, and European and American countries have enhanced the regulatory crackdown on enterprises' disclosure of false and misleading information on ESG, curbing the phenomenon of "greenwash". Although developing countries started late, they are accelerating ESG construction. For instance, the Chinese government put forward the concept of sustainable development and the goal of carbon neutrality, built an ESG information disclosure framework more fitting to China's reality, and upgraded the management model of the ESG reporting process.

As an integral part of the social economy, enterprises should bear certain social responsibilities. ESG can help enterprises achieve energy conservation, emission reduction, and environmental protection in production and operation activities, so as to realize high-quality development of enterprises. Many large companies, especially multinational ones, pay more attention to ESG information disclosure. A survey by KPMG shows that the ESG information disclosure rate of the top 250 global enterprises among the top 500 from 1993 to 2022 has been rising continuously. At present, it has reached 96%, which is enough to prove the significance of ESG information disclosure for enterprises.

From the perspective of investors, ESG information disclosure is crucial for investors to make an investment. Risks in non-financial fields such as corporate ethics and the environment have always been key risks that cannot be ignored in investment. Besides, the negative elimination method of ESG investment can effectively avoid failure. Strengthening ESG information disclosure can alleviate the information asymmetry between enterprises and investors, which enables investors to identify high-quality enterprises, leaving a positive impact on the environment while obtaining investment returns.

The importance of ESG performance and ESG information disclosure has also aroused widespread concern in academia. Existing research has findings as follows.

ESG information disclosure will affect enterprise value. As for enterprises hindered by environmental problems, they can disclose ESG information to mitigate their loss. However, excessive ESG information disclosure may lead to a decline in enterprise value for those with ESG advantages (Fatemi et al. 2020). ESG disclosure also affects the performance of enterprises. Enterprises with better ESG disclosure tend to have higher ROA and ROE (Alareeni et al. 2020). Therefore, ESG information disclosure is of great significance to enterprise operations.

Earnings management is the behavior of enterprise managers to obtain certain benefits by purposefully controlling external financial reporting. This method will bring temporary benefits to enterprises and their managers, but it will lose reliability for the accounting information of enterprises, which misleads the users of information and damages the interests of stakeholders.

Nowadays, earnings management is widespread in enterprises all over the world. Some scholars believe that enterprises have to face global peer competition against economic globalization. In order to survive in this fierce contest, enterprises may choose earnings management to hide profits and obtain more investment, leading to the prevalence of earnings management (Wu et al. 2016). Enterprises with the poor operating ability and low actual profits are likely to use earnings management, so their accounting earnings with poor performance are usually less credible (Mostafa 2017). The impact of earnings management has also received abundant attention. A study on stock prices of listed companies in Pakistan found that a significant negative correlation exists between stock returns and earnings management (Bhutto et al. 2021).

Given the ubiquitous earnings management with certain harm, it is of critical theoretical significance to study its influence. However, after the data collection, it is found that although there has been a great deal of literature on earnings management and ESG, few people have integrated them and studied the impact of earnings management on ESG information disclosure.

In order to solve the above problems, based on ESG information disclosure of Bloomberg's assessment and the data of A-share listed companies in the Shanghai stock market from 2008 to 2018, this paper uses the fixed effect model of panel data to fix industries and years and explores the impact of earnings management on information disclosure of enterprises' ESG. The results show that the improvement of earnings management significantly weakens ESG information disclosure. According to further analysis, it is found that the earnings management of state-owned enterprises has a greater weakening effect on ESG information disclosure compared with private enterprises. At the same time, in terms of management structure, compared with the company where the chairman and general manager are separated, the earnings management of the enterprises with CEO duality has a greater weakening effect on ESG information disclosure.

The contributions of this paper are mainly reflected in the following three aspects. First, it enriches the research on the influencing factors of ESG information disclosure. Most of the existing literature has studied the economic consequences of ESG information disclosure, such as the impact of ESG information disclosure on corporate financial performance. Secondly, it expands the research on the economic consequences of earnings management from the perspective of enterprises' information disclosure. Existing studies have confirmed the impact of earnings management in debt financing, enterprise innovation, etc. Thirdly, premised on the heterogeneity, this paper narrows the gap of relevant literature, enriching the research on the impact of earnings management in ESG.

The layout of the rest part is as followed. The second part is the literature review, the third is about theoretical analysis and research hypothesis, the fourth is empirical design, the fifth is empirical analysis, the sixth is robustness test, the seventh is further analysis, and the eighth is about conclusions and suggestions.

2. Literature Review

2.1 About ESG and Its Information Disclosure

Nowadays, ESG is widely concerned, to which different companies have various attitudes. Companies in sensitive industries such as petroleum, chemical industry, and forestry tend to disclose ESG information to gain the trust of investors and consumers (Garcia et al. 2017). As for a company, what kind of ESG strategy to adopt is more related to the consideration of interests and future development goals than simple social responsibility (Clementino, Perkins, 2021). From the investor's point of view, ESG investment is being valued by fund managers and ordinary investors. Many traditional fund managers have adopted responsible investment (Van Duuren et al. 2016). Ordinary investors probably invest in companies with high ESG out of their own social responsibility, but some studies believe that ESG investment cannot bring extra benefits to investors. In the Asia-Pacific region and the United States, the performance of ESG investment is similar to that of the broader market, which will not get less income because of ESG investment. However, investors in Europe often have to pay for socially responsible investments (Aue, Schuhmacher, 2016). From the perspective of the company and society, ESG investment will be beneficial. A lower expected rate of return means a lower discount rate, so there will be more investment in green projects and a higher market value for green companies (Cornell B et al.). Proper consideration taken into ESG during the investment can help investors eliminate irresponsible companies. According to Verheyden T et al., when companies with the worst ESG performance in the portfolio are excluded, the investment income will increase (Verheyden et al. 2016).

ESG has multiple impacts on a company. First of all, the company's ESG performance and information disclosure will affect its performance. Friede G et al. summarized more than 2,000 studies on the relationship between ESG and corporate financial performance (CFP) since the 1970s, which found that more than 90% of the studies showed a positive correlation between ESG and CFP. It can be seen that better ESG performance often has a positive impact on the company. Enterprises with better ESG disclosure tend to have higher ROA and ROE (Alareeni et al. 2020). In addition, from the perspective of the separated environment, social, and governance, environmental information disclosure has a positive impact on return on investment and total asset quality, while social responsibility disclosure of enterprises has a negative impact on the three models. Information disclosure of enterprises' governance has a negative impact on return on investment but a positive impact on Tobin Q value (Buallay A 2019).

Secondly, better ESG performance reduces enterprises' risks. At the beginning of COVID-19, the economies worldwide suffered a severe blow. When the whole market experienced a financial crisis, the valuation of companies with high ESG fluctuated less with higher resilience (Broadstock et al. 2021). After studying the performance of petrochemical enterprises, Shakil studied that ESG has a negative impact on the total risk, that is, companies with reasonable ESG performance have lower total risk (Shakil M H, 2021).

Finally, the benefits of paying attention to ESG performance and active ESG disclosure are also reflected in the reduction of enterprise costs. Better ESG performance is likely to make creditors more trust the company, so ESG performance and ESG disclosure are negatively correlated with debt cost (Eliwa et al. 2021).

2.2 About Earnings Management

With many motives for earnings management, companies may inflate profits or deliberately reduce profits through earnings management. In addition, listed companies might use earnings management to make profits meet analysts' expectations, or cover up the performance deterioration in poor income years, so as to sell their equity or assets at a higher price. (Beneish M D, 2001). Nowadays, the market competition in many industries is intensifying. In order to survive the fierce competition, companies sometimes have to adopt earnings management (Wu et al. 2016). Mohanram found that business managers set a goal in advance, which may be about positive profits or meeting analysts' expectations of profits. If the company falls below the pre-set target, the stock price may fall sharply. Thus, when the company is close to but still below the target, the motivation to reach the income target turns extremely strong. In this case, the enterprise will try to use some forms of revenue management to "improve" the revenue exceeding the target value. However, when companies fall far below their targets, they have the incentive to reduce revenue through earnings management. The reasons are as follows. First of all, any amount of revenue management is unlikely to make them exceed the target. Secondly, worse costs are usually minimal if a business is already well below target. This condition is known in accounting as "Big Bath" (Beneish M D, 2003).

There are many ways to manage earnings, among which changing the assumption of accounting standards is the most common one. Most of this stems from the flexibility generally allowed by generally accepted accounting principles (GAAP). For example, managers can periodically adjust the depreciation period, capitalize on previous expenses, reduce bad debt reserves, etc. Companies can also reduce revenue by bearing a large number of nonrecurring expenses. (Beneish M D, 2003)

Earnings management has many potential hazards. A study of French companies shows that it has a significant negative impact on financial performance, but corporate social responsibility can greatly undercut its negative impact (Chakroun B, 2022). At the same time, there is a significant negative correlation between stock returns and earnings management (Bhutto et al. 2021)

3. Theoretical Analysis and Research Hypothesis

First of all, after implementing earnings management, companies will try to conceal information to prevent earnings management from being revealed. However, ESG disclosure may expose too much internal information, which leads to cross-validation of information and exposes earnings management more easily. Once the company is found to have financial fraud, it may face serious consequences. According to a study of Chinese companies, compared with the control group companies, the companies engaged in financial fraud showed an 11.9-17.1% decrease in sales revenue, a 2.4-2.8% decrease in the gross profit margin of sales, and a 43.9-55.1% decrease in sales revenue from the top five major customers within three years after punishment (Xin et al. 2018). It can be seen that the consequences of financial fraud are very serious. The company management is more inclined to blur the related information for personal benefits, so as to reduce the possibility of earnings management being discovered, and then affecting the ESG disclosure of the company. In addition, companies with serious earnings management may pay more attention to safeguarding the interests of shareholders but weaken those of stakeholders, so their ESG and ESG disclosure is relatively lower. Therefore, this paper proposes hypothesis H1.

H1: Earnings management inhibits information disclosure of enterprises' ESG.

Earnings management may destroy investors' impression of the enterprise earnings' quality, thus reducing their confidence in enterprises. In order to hedge the adverse effects of earnings management, companies may attach great significance to ESG performance and improvement of ESG disclosure, so earnings management promotes ESG disclosure. Based on this, this paper puts forward the hypothesis H2.

H2: Earnings management promotes information disclosure of enterprises' ESG.

4. Empirical Design

4.1 Sample Selection and Data Sources

In this paper, Shanghai and Shenzhen A-share listed companies in China from 2011 to 2018 are used as initial research samples. ESG disclosure index is from the Bloomberg database, and other data comes from the CSMAR database. Referring to the existing research, the initial samples are treated as follows. (1) The samples of financial, ST, and ST* listed companies are eliminated. (2) Other samples with missing data are eliminated. (3) Continuous variables are transformed around 1% via Winsorization method.

4.2 Definition of Variables

1. Explained Variable: Information Disclosure Index of Enterprises' ESG

Information Disclosure Index of Enterprises' ESG reflects the detailed degree of ESG disclosure of enterprises, which is scored by Bloomberg according to ESG data of enterprises. According to 100 of the 219 original data points based on GRI requirements, they are weighted according to their importance, and the score of ESG disclosure is finally determined ranging from 0.1 (the minimum amount of data disclosed) to 100 (each data point disclosed). At the same time, due to the different ESG characteristics and risk challenges of various industries, each company only evaluates according to the data related to its industry, so the index is also applicable to various industries.

ESG data include three categories as follows. (1) Environmental aspects, such as water consumption, total waste generation, total greenhouse gases, and energy use. (2) Social aspects, such as employee mobility, labor accidents, the total number of deaths, and women in the labor force. (3) Corporate governance, including the attendance rate of board meetings and independent directors.

2. Explanatory Variable: Earnings Management

Scholars at home and abroad have done vast research on earnings management indicators, with the common models including the Healy model, Jones model, modified Jones model, cross-sectional Jones model, modified cross-sectional Jones model, and current accruals cross-sectional Jones model. According to Xia Lijun's (2003) research, it shows that the cross-sectional Jones model performs better in measuring the earnings management of companies. Therefore, the modified cross-sectional Jones model is chosen in this paper. The calculation method is as follows:

$$NDA_t = \alpha_1 \frac{1}{A_{t-1}} + \alpha_2 \frac{\Delta REV_t}{A_{t-1}} + \alpha_3 \frac{PPE_t}{A_{t-1}}$$

NDA_t represents the non-operating accrued profit of period t, A_{t-1} indicates the total assets of the period (t-1), ΔREV_t is the income difference between period t and period (t-1), and $PPE_t$is the value of fixed assets of period t, $\alpha_1 \alpha_2 \alpha_3$ are the characteristic parameters of the company, which can be obtained by the following linear regression.

$$\frac{TA_t}{A_{t-1}} = \alpha_1 \frac{1}{A_{t-1}} + \alpha_2 \frac{\Delta REV_t}{A_{t-1}} + \alpha_3 \frac{PPE_t}{A_{t-1}}$$

TA_t represents the total accrued profit of the t period.

Therefore, operational accruals = total accruals—non-operational accruals, that is, $DA_t = TA_t - NDA_t$.

3. Control Variables

Referring to the existing research, this paper controls the factors that may affect the stock prices crash, such as the board size and the asset-liability ratio. Table 1 is the definition of specific variables.

Table 1. Variable Definitions

Variable Type	Variable Name	Symbol	Indicator Interpretation
Explained Variable	Information Disclosure Index of ESG	$ESG_{i,t}$	Detailed degree of ESG disclosure
Explanatory Variable	Earnings Management	$DA_{i,t}$	Mentioned as above
Control Variable	CEO Duality	BOTH	If the chairman and CEO are the same people, the value is 1; otherwise, it is 0
	Board Size	BOARD	Natural logarithm of the number of directors
	Asset-Liability ratio	LEV	Total liabilities/assets of the company at the end of the period
	Return on Assets	ROA	Company net profit/total assets at the end of the period
	Property Right Nature	STATE	State-owned enterprises are recorded as 1, otherwise, it is 0
	Year	Years	Fixed effect of control year
	Company	Firm	Fixed effect of control firm

4.3 Test Model

To test the hypothesis, this paper establishes the following OLS model:

$$ESG_{i,t} = \beta_0 + \beta_1 DA_{i,t} + Controls_{i,t} + \sum Years + \sum INDUSTRY + \varepsilon_{i,t} \quad (1)$$

$ESG_{i,t}$ is the ESG disclosure index of i Company in Phase t, and $DA_{i,t}$ is the earnings management of Company i in Phase t. $Controls_{i,t}$ is the control variable affecting Company i in Phase t, as shown in Table 1 for details. As for the regression in this paper, we control both annual and industry fixed effects.

5. Empirical Results and Analysis

This paper makes a regression analysis of the relationship between ESG disclosure and earnings management, with the results summarized in Table 2.

Table 2. Earnings Management and ESG Disclosure

	(1)	(2)
VARIABLES	ESG	ESG
da2	-0.097*	-0.234***
	(0.049)	(0.035)
CVs	No	Yes
Industry fe	Yes	Yes
Year fe	Yes	Yes
Constant	20.295***	-27.574***
	(0.000)	(5.208)
Observations	5,793	5,793
R-squared	0.108	0.263
rmse	6.103	5.550
Robust standard errors in parentheses		
*** p < 0.01, ** p < 0.05, * p < 0.1		

Table 2 reports the regression results, which are interpreted as ESG disclosure, with earnings management as the explanatory variable. In order to eliminate the influence of variables only changing with time and industry, this paper adds time-fixed effect and industry-fixed effect. The results in column (1) show that the coefficient of earnings management is -0. 097 before adding control variables, which is significant at the significance level of 10%, that is, ESG disclosure is negatively correlated with earnings management. In order to prevent the interference of other factors, this paper adds control variables such as asset-liability ratio, asset return rate, enterprise scale, board sizes, enterprise age, enterprise property right nature, CEO identity, etc. The results are shown in column (2). The coefficient of earnings management is -0. 234, significant at the level of 1%. The above results show that earnings management does inhibit ESG disclosure, which confirms H1. Perhaps, the company reduced the relevant disclosure to prevent earnings management from being discovered.

6. Further Analysis

6.1 Dimension of Property Rights Nature

The agency problem of state-owned enterprises is serious, so the property rights nature may affect earnings management and ESG disclosure at the same time. In order to further explore whether there are differences in the negative impact of earnings management on ESG disclosure in enterprises with different property rights, this paper conducts heterogeneity analysis, with the results summarized in Table 3.

Table 3. Heterogeneity Analysis of Property Rights

	(1)	(2)
VARIABLES	ESG	ESG
da2	-0.290***	-0.162***
	(0.055)	(0.038)
CVs	Yes	Yes
Year fe	Yes	Yes
Industry fe	Yes	Yes
Constant	-31.927***	-18.396 ***
	(6.545)	(5.895)
Observations	3,318	2,475
R-squared	0.280	0.167
rmse	5.738	5.190
Robust standard errors in parentheses		
*** p < 0.01, ** p < 0.05, * p < 0.1		

According to Table 3, the results in column (1) show that the coefficient of da2 is -0. 290 in state-owned enterprises, which is significant at the level of 1%. The results in column (2) indicate that the coefficient of da2 is -0. 162 in non-state-owned enterprises, significant at the level of 1%. Thus, earnings management has a greater negative impact on ESG disclosure in state-owned enterprises. This may be because the principal-agent problem of state-owned enterprises is more serious, and there is no motivation to disclose ESG information after earnings management. However, non-state-owned enterprises may need to disclose more ESG information to offset the negative impact of earnings management.

6.2 Dimension of Power Concentration

Power concentration is a key factor affecting enterprises' governance. Some studies have found that the greater the power of executives, the more effective the internal control of enterprises. Therefore, this paper analyzes the heterogeneity of power concentration, with the results shown in Table 4.

Table 4. Heterogeneity Analysis of Power Concentration

	(1)	(2)
VARIABLES	ESG	ESG
da2	-0.266**	-0.225***
	(0.107)	(0.052)
CVs	Yes	Yes
Year fe	Yes	Yes
Industry fe	Yes	Yes
Constant	-16.114**	-29.240***
	(6.019)	(5.562)
Observations	1,013	4,779
R-squared	0.254	0.266
rmse	5.208	5.601
Robust standard errors in parentheses		
*** p < 0.01, ** p < 0.05, * p < 0.1		

Column (1) is BOTH=1, which is the result of CEO duality. The coefficient of da2 was -0. 266, significant at 1%. Column (2) is the result when BOTH=0 without CEO duality. At this time, the coefficient of da2 is -0. 225, significant at the level of 1%. It can be seen that earnings management has a greater negative impact on ESG disclosure with CEO duality. This may be because when the power concentration is high, the CEOs need to bear more responsibilities with greater pressure from public opinion, which leads to their reluctance to expose the earnings management to society. Therefore, after implementing earnings management, companies tend to disclose less ESG information to prevent earnings management from being discovered.

6.3 Dimension of Financing Constraints

Zhu Yongming and other scholars have found that there is a negative correlation between the intensity of financing constraints and the performance of corporate social responsibility. Besides, the ESG performance of enterprises with high financing constraints may be worse. Thus, this paper analyzes the heterogeneity of financing constraints, with the results shown in Table 5.

Table 5. Heterogeneity Analysis of Financing Constraints

	(1)	(2)
VARIABLES	ESG	ESG
da2	-0.232**	-0.207**
	(0.091)	(0.095)
CVs	Yes	Yes
Industry fe	Yes	Yes
Year fe	Yes	Yes
Constant	-60.936***	0.462
	(11.386)	(4.289)
Observations	2,890	2,902
R-squared	0.303	0.118
rmse	6.059	4.640
Robust standard errors in parentheses		
*** p < 0.01, ** p < 0.05, * p < 0.1		

According to Table 5, Column (1) indicates enterprises with greater financing constraints than the median, that is, enterprises with severe financing constraints, while Column (2) indicates enterprises with smaller financing constraints. It can be seen that the da2 coefficients of enterprises with severe and loose financing constraints are -0.232 and -0. 207 respectively, which proves that earnings management has a stronger inhibitory effect on ESG disclosure for enterprises with severe financing constraints. Perhaps, it is because enterprises with strong financing constraints have no enough funds to improve ESG performance and fail to hedge the negative impact of earnings management through ESG disclosure after earnings management.

7. Conclusion and Recommendations

7.1 Research Conclusion

Based on ESG information disclosure of Bloomberg's assessment and the data of A-share listed companies in the Shanghai stock market from 2008 to 2018, this paper uses the fixed effect model of panel data to fix industries and years, so as to explore the impact of earnings management on information disclosure of enterprises' ESG. The results show that the improvement of earnings management can significantly weaken ESG disclosure. According to further analysis, it is found that compared with private enterprises, the earnings management of state-owned enterprises has a greater weakening effect on ESG disclosure. Meanwhile, in terms of management structure, compared with companies where the chairman and general manager are separated, the earnings management of companies with CEO duality has a stronger weakening effect on information disclosure.

7.2 Research Enlightenment

(1) Investors should pay attention to corporate social responsibility and make selective investments according to the ESG disclosure and rating of enterprises. Investors' investment practices can promote ESG disclosure of enterprises, and their specific investment can force enterprises to value the fulfillment of social responsibilities and actively disclose ESG information.

(2) Enterprises should strengthen management and reduce earnings management. Specifically, they should improve internal and external supervision systems with clear responsibilities, so as to promote ESG disclosure.

(3) Enterprises should actively undertake social responsibilities and actively disclose ESG information, apart from showing their good corporate image to the capital market for the attraction of green investment.

(4) Relevant government departments should optimize the ESG disclosure system of listed companies, guiding the ESG disclosure of Chinese enterprises from voluntary to mandatory disclosure. Up against the new development concept, mandatory ESG disclosure is the general trend. Thus, the government should guide enterprises to make a smooth transition and realize mandatory ESG disclosure in conformity with the laws and regulations.

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