

The Impact of ESG Rating on Corporate Earnings Management: A Study from the Perspective of Information Transparency

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Abstract. Against the macro backdrop of sustainable development transformation and dual carbon goals, ESG performance has gradually evolved into a core dimension for assessing a company's potential for high-quality growth. This paper examines the constraining effect of corporate ESG ratings on actual earnings management behavior and its underlying logic by constructing an empirical model using Chinese A-share listed companies from 2011 to 2020 as the research sample. Findings reveal that outstanding ESG performance generates significant governance spillover effects, effectively curbing management's tendency to embellish financial statements through abnormal business activities. At the sub-dimensional level, environmental (E) and social (S) performance demonstrate robust governance efficacy, while the constraining effect of governance (G) has yet to fully manifest at this stage. Mechanism analysis further confirms that information transparency fully mediates the relationship between ESG performance and earnings management. Notably, this governance efficacy exhibits pronounced dynamic lag characteristics, typically achieving substantive suppression of earnings manipulation through enhanced disclosure quality only after two cycles of improved ESG performance. This study not only enriches the literature on the economic consequences of ESG but also provides crucial empirical insights for regulators to refine disclosure standards and guide investors in identifying micro-level earnings quality.

Keywords: ESG performance, earnings management, information transparency, mediating effect, lag effect

1. Introduction

In recent years, global attention to sustainable development and governance transparency has grown significantly, with environmental, social, and governance (ESG) frameworks gradually becoming a key benchmark for evaluating corporate performance. Against the backdrop of China's macroeconomic push toward its dual carbon goals and high-quality development transformation, ESG represents not only a commitment to corporate social responsibility but is also viewed as a vital pathway for enhancing corporate governance and boosting long-term value. Meanwhile, earnings management—a common practice where companies manipulate financial information through accounting policies or operational actions—continues to draw extensive attention from both

academia and industry. Such behavior often exacerbates information asymmetry, undermines resource allocation efficiency, and may erode investor trust. Therefore, examining whether and how ESG, as an emerging governance mechanism, can curb earnings management practices holds not only theoretical value but also practical significance for advancing market regulation and sustainable development.

Despite the growing body of ESG-related research, existing literature still exhibits certain limitations. Most studies focus on ESG's impact on corporate performance, financing conditions, or market valuation, with relatively few delving into its specific effects on actual earnings management practices. Furthermore, existing research has not sufficiently analyzed the transmission mechanisms through which ESG influences earnings management, particularly lacking systematic exploration from the perspectives of information transparency and signaling. This has failed to fully reveal the complete pathway by which ESG improves disclosure, reduces information asymmetry, and consequently impacts management's financial behavior.

Against this backdrop, this study utilizes data from Chinese A-share listed companies between 2011 and 2020 to address the following questions: Can corporate ESG performance curb actual earnings management? If so, how does the underlying mechanism operate? Does this effect exhibit lagged characteristics? The potential contributions of this study are as follows: First, it incorporates ESG performance into the earnings management analytical framework, expanding the boundaries of ESG governance effect research. Second, it systematically constructs and validates the "ESG performance—information transparency—earnings management" transmission mechanism based on information asymmetry theory, revealing its two-period lagged dynamic characteristics and providing new empirical evidence for understanding the time-delayed nature of ESG governance effects. Finally, the study further distinguishes the differential impacts of environmental, social, and governance dimensions on earnings management, offering more targeted reference points for policymakers and investors.

2. Literature review

2.1. Current research status of earnings management

Earnings management refers to actions taken by corporate management within the bounds of accounting standards to influence financial reporting outcomes through accounting policy selection or operational adjustments for personal gain [1]. Scholars generally attribute earnings management to agency problems and information asymmetry: due to misaligned objectives between management and investors, coupled with limited external oversight, firms may exploit information advantages to manipulate earnings for short-term benefits [2]. Depending on implementation methods, earnings management can be categorized into accrual-based and real earnings management. The former primarily involves adjusting accounting estimates and recognition timings, while the latter alters production, sales, or R&D activities. Existing literature indicates that although earnings management may generate "superficial performance" in the short term, it undermines information quality, distorts resource allocation, and harms corporate value and market efficiency over the long term [3]. Consequently, identifying and constraining earnings management has become a critical issue in corporate governance and financial accounting research.

2.2. Research on ESG performance and corporate behavior

In recent years, ESG (Environmental, Social, and Governance) performance has increasingly become a significant factor influencing corporate operations and governance. Research indicates that strong ESG performance not only demonstrates fulfillment of social responsibilities but also improves corporate behavior and the information environment. Friede et al. point out that ESG helps reduce operational risks and enhance performance [4]; Velte finds that companies with high ESG ratings exhibit superior financial performance [5]. Domestic scholars Yan Weixiang et al. argue that ESG significantly enhances corporate performance [6], while Wang Shuangjin et al. observe a U-shaped relationship between ESG responsibility fulfillment and performance in manufacturing firms [7]. Additionally, studies by Zhou Fangzhao et al. and Zhang Haoxu reveal institutional investors' preference for companies with strong ESG performance [8,9]. Overall, ESG promotes long-term, stable corporate development by improving operational conduct, enhancing disclosure quality, and strengthening external oversight.

2.3. The relationship between ESG performance and earnings management

Most studies suggest that strong ESG performance can significantly curb earnings management practices. Bozzolan et al. analyzed data from European listed companies and found that firms with higher corporate social responsibility (CSR) scores exhibited significantly lower levels of accrual earnings management [10]. This indicates that fulfilling social responsibilities enhances earnings quality and reduces the risk of earnings manipulation. Gonçalves et al. further empirically analyzed an EU sample, [11] revealing a significant negative correlation between corporate ESG levels and earnings management—that is, stronger ESG performance correlates with weaker earnings manipulation. Domestic scholars Lian Yonghui et al. [12] further confirmed that ESG fundamentally reduces earnings management by lowering information asymmetry. Overall, ESG improves external oversight and internal constraint environments, making management “unwilling and unable” to engage in earnings manipulation. However, existing research has limitations: First, academic studies primarily examine ESG performance's impact on operating results, financing costs, firm value, green innovation, and capital market performance, with insufficient research on earnings management; Second, insufficient attention has been paid to information transparency mechanisms, failing to fully elucidate how ESG influences earnings management by enhancing disclosure quality and reducing information asymmetry. Therefore, this paper constructs the impact mechanism of ESG ratings on earnings management from an information transparency perspective, aiming to enrich the research on the economic consequences of ESG.

3. Theoretical analysis and research hypotheses

3.1. ESG ratings and earnings management

The root cause of earnings management lies in agency problems and information asymmetry. Strong ESG performance can mitigate “contractual friction” and “communication friction” to some extent [13], thereby reducing the motivation for earnings manipulation at its source. According to reputation theory, high ESG performance reinforces corporate social responsibility and ethical constraints, making management “unwilling and unable” to engage in earnings management. By disclosing authentic and transparent ESG information, firms send positive signals to the market,

gaining investor and creditor trust, thereby reducing the necessity for financial manipulation [14]. Therefore, this paper proposes the following hypothesis:

Hypothesis 1: Firms with higher ESG ratings should exhibit lower levels of earnings management.

3.2. The mediating role of information transparency

Information transparency reflects the adequacy and authenticity of corporate disclosures, serving as a crucial basis for external investors to evaluate corporate governance quality. Companies with strong ESG performance typically exhibit higher-quality disclosures and more proactive communication mechanisms. This improved information environment effectively reduces information asymmetry [15]. By proactively disclosing non-financial information during social responsibility fulfillment, firms enhance the credibility and market accessibility of accounting information, thereby compressing the scope for earnings management. Drawing on the research logic of Yang Jinmeng [14], ESG performance may indirectly influence earnings management behavior through the mediating mechanism of enhanced information transparency. Therefore, this study proposes the following hypothesis:

Hypothesis 2: Corporate information transparency mediates the relationship between ESG performance and corporate earnings management.

4. Research design

4.1. Model specifications

Based on the preceding theoretical analysis, a firm's ESG performance may curb earnings management by enhancing information transparency. To test this hypothesis, this study moderately extends Yang Jinmeng's [14] research framework. The ESG data settings (one-period lag), fixed effects (fixed time and industry), and control variables adopted here are identical to those specified in Yang Jinmeng [14].

First, we examine the direct impact of ESG performance on earnings management to test Hypothesis 1. We construct Model 1 as follows:

$$REM_{it} = \alpha_0 + \alpha_1 ESG_{i,t-1} + \sum_k \beta_k Control_{kit} + \varepsilon_{it} \quad (1)$$

Second, we introduce the information transparency variable to analyze its mediating role between ESG and earnings management, thereby testing Hypothesis 2. We construct the following Model 2:

$$REM_{it} = \alpha_0 + \alpha_1 ESG_{i,t-1} + \alpha_2 Trans_{it} + \sum_k \beta_k Control_{kit} + \varepsilon_{it} \quad (2)$$

Here, REM_{it} denotes the actual earnings management level of firm i in year t ; $ESG_{i,t-1}$ represents the ESG rating score from the previous period; $Trans_{it}$ indicates information transparency; $Control_{kit}$ comprises control variables; and ε_{it} is the random disturbance term. The second model incorporates a mediating variable to identify the transmission effect of information transparency. This modeling approach aligns with the regression framework in Yang Jinmeng's [14] paper, though this study adjusts variable definitions and sample scope to accommodate the research theme and data conditions.

4.2. Variable definitions

To validate the aforementioned hypothesis, this paper defines and measures the variables involved in the model as follows:

4.2.1. Dependent variable

The dependent variable in this study is Real Earnings Management (*REM*). Following Roychowdhury [16], this paper measures the extent to which firms manipulate earnings through substantive business activities by estimating three dimensions: abnormal operating cash flows, abnormal production costs, and abnormal discretionary expenses. A higher value of the composite indicator *REM* indicates a stronger tendency for firms to embellish financial statements through production and operational activities.

4.2.2. Core independent variable

The core explanatory variable in this study is ESG performance (*ESG*_{i,t-1}). Data is sourced from the Huazheng ESG Evaluation System, which synthesizes scores across environmental, social, and governance dimensions. To mitigate potential endogeneity issues and identify causality, this study applies a one-period lag to the ESG scores.

4.2.3. Mediating variable

The mediator variable in this study is information transparency. Following the methodology of Yang Jimmeng [14], this study employs the information disclosure assessment rating released by the Shenzhen Stock Exchange as a proxy variable. A higher score indicates that the information conveyed by the company to external parties is more accurate and timely, reflecting higher disclosure quality.

4.2.4. Control variables

To control for other factors that may influence earnings management, this study adopts the control variable selection framework established by Yang Jimmeng [14], including financial variables such as firm size (Size), debt-to-equity ratio (Lev), return on assets (ROA), and firm growth (Growth).

4.3. Sample selection and data sources

To eliminate interference from other heterogeneous factors, this paper introduces a series of firm characteristics as control variables:

Firm size (*Size*): Measured by the natural logarithm of total assets at the end of the period.

Financial leverage (*Lev*): Reflecting debt levels through the debt-to-asset ratio.

Profitability: Measured using return on assets (*ROA*) and return on equity (*ROE*), respectively.

Governance Characteristics: Including the shareholding ratio of the largest shareholder (*Top1*), the combined shareholding ratio of the top five shareholders (*Top25*), and the total compensation of the top three executives (*Exep*), which reflects high salary levels.

Table 1. Variable definitions and descriptions

Variable Type	Variable Name	Variable Symbol
Independent Variable	ESG Performance	ESG_t-1
Dependent variable	Real Earnings Management	REM
Mediating Variable	Information Transparency	Disclosure
	Leverage	Lev
	Firm Size	Size
	Equity Concentration	Top1
Control Variables	Equity Restriction	Top25
	Executive Experience	Exep
	Return on Assets	ROA
	Return on Equity	ROE

5. Empirical analysis

5.1. Descriptive statistics

Table 2 presents the statistical profile of the sample. The ESG score shows a mean of 4.13 (SD = 1.05), with a full range from 1 to 7, reflecting significant performance diversity. For Real Earnings Management (*REM*), the mean is -0.0062; however, its wide range (-6.82 to 7.13) and standard deviation (0.26) highlight substantial fluctuations in manipulation intensity. Firm Size (*Size*) averages 22.41 (SD = 1.32), while the Leverage (*Lev*) ratio averages 0.43 (Max = 1.96, SD = 0.20), indicating notable variations in operational scale and capital structure across the sampled Chinese A-share companies.

Table 2. Descriptive statistics results

Variable Name	Mean	Standard Deviation	Minimum	Maximum
REM	-0.006211	0.2550987	-6.8209	7.1289
Size	22.40723	1.323922	15.57726	28.63649
Lev	0.4332844	0.2035498	0.0079691	1.9565558
ROA	0.032293	0.0823958	-2.646461	-0.785861
ROE	0.0163786	1.579531	-186.557	43.61454
Top1	0.3363833	0.1481764	0.002863	0.89991
Top25	0.7417513	0.6156795	0.0045	4
Exep	7.791948	1.266402	1.94591	13.2535
ESG	4.127681	1.049187	1	7

5.2. Regression analysis

5.2.1. Baseline regression analysis

The empirical results concerning the impact of ESG ratings on real earnings management are detailed in Table 3. In the comprehensive model (Column 1), the coefficient for ESG performance is significantly negative at the 10% level, indicating that higher sustainability ratings effectively suppress the practice of manipulating earnings through operational activities. To further explore the individual contributions of ESG components, we conducted sub-dimensional tests presented in Columns (2) through (4). The findings reveal that environmental (E) and social (S) pillars exert a robust inhibitory effect on REM, with coefficients significant at the 1% level. In contrast, the governance (G) dimension, while showing a negative correlation, fails to reach statistical significance. This discrepancy may suggest that within the current Chinese corporate landscape, ESG reporting focuses more heavily on environmental and social responsibilities, whereas the direct oversight function of the governance framework requires further strengthening to influence financial reporting quality.

Regarding the control variables, the model behaves consistently with existing literature. Firm size (*Size*) and leverage (*Lev*) exhibit positive associations with earnings management, suggesting that larger or more debt-laden firms may face stronger incentives for financial window-dressing. Other indicators, including *ROA*, *ROE*, and equity concentration (*Top1*), maintain reasonable significance levels and directions across all specifications, ensuring the robustness of our baseline findings.

Table 3. Baseline regression

	(1)	(2)	(3)	(4)
	REM	REM	REM	REM
L.ESG	-0.0604* (-1.9072)			
L.E		0.1921*** (8.9381)		
L.S			-0.0761*** (-4.7238)	
L.G				-0.0277 (-1.1519)
Size	0.0437*** (21.4665)	0.0411*** (20.4083)	0.0439*** (21.8189)	0.0433*** (21.4704)
Lev	0.0812*** (8.1751)	0.0847*** (8.6155)	0.0846*** (8.6023)	0.0812*** (8.0175)
ROA	-0.7581*** (-34.7860)	-0.7628*** (-35.1510)	-0.7560*** (-34.7501)	-0.7594*** (-34.8447)
ROE	0.0036*** (3.5788)	0.0037*** (3.7164)	0.0035*** (3.5369)	0.0036*** (3.5999)
Top1	-0.1178***	-0.1131***	-0.1212***	-0.1170***

Table 3. (continued)

	(-7.5075)	(-7.2164)	(-7.7243)	(-7.4325)
Top25	-0.0320*** (-8.7394)	-0.0318*** (-8.6981)	-0.0317*** (-8.6368)	-0.0321*** (-8.7682)
Exep	-0.0506*** (-26.3746)	-0.0517*** (-26.9496)	-0.0506*** (-26.3839)	-0.0506*** (-26.3765)
_cons	-0.4956*** (-13.3078)	-0.5918*** (-17.0185)	-0.4881*** (-14.0042)	-0.5079*** (-13.7509)
N	21969	21969	21969	21969
F	359.1075	369.8841	361.7470	358.7810
R ²	0.1157	0.1187	0.1164	0.1156

Note: *, **, and *** denote significance levels of 10%, 5%, and 1%, respectively. The values in parentheses are t-statistics.

5.2.2. Results of the mediational effect test

To examine whether ESG performance influences earnings management through disclosure quality, this study employs the Bootstrap method for mediation analysis. Bootstrap obtains robust estimates of indirect effects through repeated sampling (set at 2,000 iterations in this study) and uses bias-corrected confidence intervals to determine the significance of mediation effects. The results are presented in Tables 4 and 5.

First, the Lag 1 test reveals that the coefficient for ESG on disclosure quality is 1.4188 ($p = 0.627$), indicating non-significance. Similarly, the impact of disclosure quality on earnings management was insignificant. The indirect effect coefficient was 0.00026 ($p = 0.905$), with the 95% confidence interval encompassing zero. This indicates that Lag 1 ESG performance did not significantly influence earnings management through disclosure quality, suggesting no mediating effect exists.

In contrast, Lag 2 revealed a significant mediating effect. The coefficient for ESG performance lagged by two periods on disclosure quality was -7.391 ($p < 0.05$), significantly negative, indicating that improvements in ESG performance led to substantial enhancements in disclosure quality approximately two years later. The effect of disclosure quality on earnings management was 0.00097 ($p < 0.05$), significantly positive. The Bootstrap indirect effect was -0.0071, with a 95% confidence interval of [-0.0128, -0.0014], excluding zero, confirming a significant mediating effect. Further analysis revealed that ESG's direct effect became insignificant after incorporating disclosure quality, indicating a pure mediation effect.

In summary, ESG's influence on earnings management exhibits pronounced time lag: the short-term (one-period lag) effect is insignificant, while the impact on earnings management emerges only after a two-period lag by enhancing information disclosure quality. This suggests that corporate ESG improvements require time to exert governance effects on financial transparency and earnings behavior.

Table 4. Bootstrap mediation effect test results for the lagged period

Path	Observed Coefficient	Bootstrap Std. Err.	z	P> z	95% Confidence Interval
a (ESG→Disclosure)	1.4188	2.9175	0.49	0.627	[-4.299, 7.137]
b (Disclosure→REM)	0.00018	0.00042	0.43	0.665	[-0.00064, 0.00100]
direct	0.05024	0.07190	0.70	0.485	[-0.091, 0.191]
indirect	0.00026	0.00216	0.12	0.905	[-0.00398, 0.00450]
total	0.05050	0.07169	0.70	0.481	[-0.090, 0.191]

Table 5. Results of the bootstrap mediation effect test with two-period lag

Path	Observed Coefficient	Bootstrap Std. Err.	z	P> z	95% Confidence Interval
a (ESG→Disclosure)	-7.391	3.461	-2.14	0.033	[-14.174, -0.608]
b (Disclosure→REM)	0.00097	0.00046	2.11	0.035	[0.00007, 0.00181]
direct	0.1107	0.0802	1.38	0.169	[-0.046, 0.268]
indirect	-0.0071	0.0029	-2.45	0.014	[-0.0128, -0.0014]
total	0.1035	0.0780	1.30	0.194	[-0.0528, 0.260]

5.3. Robustness test

To verify the reliability of this paper's conclusions, we first applied tail trimming at the 1% and 99% percentiles to key variables to reduce the impact of extreme values on estimation results. The regression results after tail trimming are shown in Table 6.

In Column (1), the impact of ESG lagged by two periods on earnings management is re-estimated using the trimmed data. The coefficient for the core explanatory variable L2.ESG is -0.0312, though it fails to reach statistical significance. This pattern aligns with the benchmark regression, where the one-period lag is insignificant while the two-period lag is significant. Column (2) further examines ESG's effect on disclosure quality. The coefficient for L2.ESG is -8.7784, significantly negative at the 1% level, indicating that outlier trimming did not diminish ESG's negative impact on disclosure quality.

Column (3) incorporates the moderator variable into the model. Although the direct effect of ESG is insignificant, the coefficient for the moderator disclosure score is positive and consistent in direction with the benchmark findings, indicating that the direction of the mediating path remains stable. Overall, the coefficient directions and significance levels of key variables in the trimmed model largely align with those in the benchmark regression, demonstrating that the study's conclusions are robust and unaffected by outliers.

In summary, outlier treatment does not alter the conclusion that ESG influences earnings management and mediates this effect through disclosure quality, further validating the reliability of the research findings.

Table 6. Robustness test results

Variable	(1) REM (abbreviation)	(2) Disclosure (abbreviation)	(3) REM (abbreviation + intermediary)
L2.ESG	-0.0312 (-0.69)	-8.7784*** (-3.23)	-0.0283 (-0.63)
disclosure_score	—	—	0.00032 (1.27)
Lev	0.0565 (1.76)	-5.4385*** (-3.42)	0.0583* (1.82)
Size	0.0626*** (5.12)	2.4283*** (4.26)	0.0618*** (5.05)
Top1	0.0400 (0.55)	7.2208*** (2.60)	0.0377 (0.52)
Top25	0.0440 (0.64)	0.2915 (0.58)	0.00436 (0.45)
Exep	-0.0192 (-1.46)	1.9798*** (4.02)	-0.0193 (-1.47)
ROA	-0.6158*** (-8.14)	15.370*** (4.24)	-0.6208*** (-7.75)
ROE	0.1005*** (3.69)	0.4075 (0.28)	0.1004*** (3.69)
Year FE	YES	YES	YES
Company FE	YES	YES	YES
N	9,484	9,484	9,484
R ² (within)	0.0599	0.0511	0.0602

Note: Values in parentheses represent t-statistics; *, **, *** denote significance at the 10%, 5%, and 1% levels, respectively; standard errors are estimated robustly at the company level using clustering.

6. Conclusions and implications

6.1. Conclusion

This study examines the impact of ESG performance on real earnings management and its underlying mechanisms from an information transparency perspective, using Chinese A-share listed companies from 2011 to 2020 as the sample. Findings reveal that overall, corporate ESG ratings exhibit a significant negative correlation with real earnings management, indicating that higher ESG performance effectively curbs earnings manipulation through abnormal business activities. At the component level, environmental (E) and social (S) performance exhibit stronger suppression effects, while governance (G) shows a negative but insignificant correlation. This reflects that in China's current ESG practices, environmental governance and social responsibility more readily generate external oversight and reputational constraints, whereas the constraint effect of governance mechanisms still has room for improvement. Further mediation analysis reveals that information transparency fully mediates the relationship between ESG and true earnings management with a time lag. Two periods later, ESG enhances earnings management by improving disclosure quality. Robustness tests, including tail-truncation, confirm the validity of these findings, indicating strong robustness and explanatory power for the empirical results on the "ESG-Information Transparency-Earnings Management" relationship.

6.2. Implications

Based on the above conclusions, this paper argues that: On one hand, listed companies should integrate ESG development into their long-term growth and corporate governance strategies. By tangibly improving environmental performance, fulfilling social responsibilities, optimizing governance structures, and enhancing the quality of ESG and financial disclosures, they can increase

transparency, reduce incentives for short-term earnings manipulation, and fundamentally curb opportunistic behavior by management. On the other hand, regulators should further refine ESG disclosure systems and evaluation standards, incorporating ESG performance and disclosure quality into governance assessments and routine oversight. They should intensify regulatory inquiries targeting firms with poor ESG performance and elevated earnings management risks to prevent “cosmetic ESG.” Concurrently, investors and intermediaries should integrate ESG metrics and information transparency into unified analytical frameworks during valuation and risk identification processes. High ESG standards and transparency should be regarded as key indicators of superior earnings quality, while heightened risk warnings should be issued for companies with low ESG and transparency levels. This approach will leverage market discipline and external governance to enhance capital markets' resource allocation and governance functions within frameworks of high-quality development and sustainable finance.

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