

Research on the Relationship between Audit Quality and Corporate Earnings Management

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Abstract

This paper examines the relationship between audit quality and corporate earnings management. Based on data from A-share listed companies from 2012 to 2024, we construct a composite audit quality index (AQI) and conduct empirical tests on both accrual manipulation (DA) and real-world manipulation (REM). The study finds that high audit quality significantly inhibits earnings management behavior. A one-standard-deviation increase in the AQI reduces |DA| by approximately 3.7% on average and REM by approximately 3.2%. Further mechanistic analysis reveals that audit effort and information disclosure quality are central to the influencing pathway, with high-quality audits strengthening governance outcomes by increasing audit input and improving disclosure consistency. Heterogeneity tests reveal that this inhibitory effect is significantly weakened under conditions of high fee pressure, while increased information transparency has a substitution effect. Case studies verify the robustness of our findings under policy rotation and market competition.

Keywords

Audit quality, Earnings management, Audit effort, Information disclosure, Fee pressure, Partner rotation.

1. Introduction

Amidst the rapid development of capital markets and increasingly stringent regulatory environments, audit quality not only impacts the authenticity and reliability of accounting information but also directly influences the occurrence and extent of corporate earnings manipulation. High-quality audits can effectively mitigate management opportunistic behavior and enhance the transparency of financial reporting, thereby safeguarding investor interests and market efficiency.

Abu Afifa et al. (2023) proposed that audit quality can indirectly improve corporate performance by suppressing earnings management behavior [1]. Imen and Anis (2021) believe that audit quality has a significant moderating effect between audit reports and earnings management, and can reduce the space for management to manipulate profits [2]. Shahwan (2021) found that good corporate governance and high-quality audits jointly promote the improvement of financial reporting quality [3]. Indarti and Widiatmoko (2021) further verified that audit quality and the degree of earnings management significantly affect the equity capital cost of enterprises. The higher the audit quality, the lower the capital cost [4]. Ismael and Kamel (2021) showed that internal audit quality can significantly constrain earnings management behavior and strengthen the internal control system of enterprises [5]. Chowdhury and Eliwa (2021) pointed out that in the UK market, high-quality audits can effectively suppress real activity manipulation [6]. Alyaarubi et al. (2021) found in their study in Oman that the

interaction between internal audit quality and external audits jointly improves the authenticity of financial reports [7]. Ngo and Le (2021) investigated the characteristics of audit committees of Vietnamese listed companies and found that their governance mechanisms played a mediating role in the relationship between audit quality and earnings management [8]. Mardessi (2022) believed that audit quality can significantly enhance the supervisory role of the audit committee on the quality of financial reporting [9]. Mardessi (2021) further found that in the Dutch market, the impact of audit committee characteristics on financial reporting quality is moderated by audit quality.

This paper takes the comprehensive audit quality index (AQI) as the starting point, combines the two-dimensional indicators of accrual manipulation and real manipulation, adopts a multi-level empirical model and case analysis, and systematically explores the impact mechanism of audit quality on corporate earnings management and its situational differences, in order to provide empirical evidence for improving the audit supervision system and enhancing corporate financial transparency.

2. Research Hypothesis

The empirical model focuses on the impact of audit quality (AQ) on earnings management, controlling for scale, growth, leverage, operating cycle, and industry /year effects. Benchmark settings:

$$EM_{i,t} = \beta_0 + \beta_1 AQ_{i,t} + \mathbf{X}'_{i,t} \boldsymbol{\beta} + \mu_{ind} + \lambda_{yr} + \varepsilon_{i,t} \quad (1)$$

Where $EM \in \{|DA|, REM\}$ X is a control variable. Fee Pressure (FP) interacts with Partner Reputation/Slack (PR) and Information Environment (IE):

$$EM_{i,t} = \dots + \beta_2 (AQ \times FP)_{i,t} + \beta_3 (AQ \times PR)_{i,t} + \beta_4 (AQ \times IE)_{i,t} + \varepsilon_{i,t} \quad (2)$$

Based on this, we propose the following: H1 (Baseline Effect): Higher audit quality leads to smaller $|DA|$ and lower REM intensity ($\beta_1 < 0$). H2 (Fee Pressure): Increased fee pressure weakens the inhibitory effect of AQ ($\beta_2 > 0$). H3 (Partner Characteristics): Signing partners with high reputation and low slack risk strengthen the inhibitory effect ($\beta_3 < 0$). H4 (Information Environment Moderation): When information transparency is high, the marginal effect of AQ is weaker, and the relationship becomes a substitute ($\beta_4 > 0$ for $|DA|$ REM). To mitigate endogeneity, robust tests using instrumental variables or propensity score matching and governance fixed effects will be employed.

3. Research Design and Data

3.1. Sample and Data Source

The dataset for this study is the 2024 edition of Write & Improve, jointly compiled by Cambridge University Press and the Examinations Authority. This corpus contains approximately 23,000 writing samples by non-English speaking authors, totaling approximately 762,000 words. These essays, submitted by 766 learners after multiple rounds of revision, cover a variety of genres, including argumentative essays, expository essays, and application letters. The essays were graded according to the CEFR (A2-C1) level system, with detailed grammatical and usage errors noted to ensure data transparency and reusability. After systematic text cleansing, we extracted syntactic and thematic features, examining average

sentence length, clause composition ratio, dependency tree depth, and thematic coherence. We also examined vocabulary diversity (TTR) and error density (number of errors per 100 words), and subsequently categorized the test content according to CEFR levels and question types. This study focused on how formative feedback can improve writing skills. We developed an assessment system centered on repeated performance of the same task and continuous revision. By filtering out anomalous data and performing batch processing, we ultimately retained a balanced sample from A2 to C1. Next, using the principle of a sliding window, the data samples were divided into three different groups: training, validation, and testing. See Table I for a detailed breakdown.

Table 1: Sample table after preprocessing

learner_id	prompt_id	CEFR	Revision_idx	tokens	TTR	grammar_error_rate (/100w)	Coherence_score (0-1)	mean_sent_len	dep_tree_depth	submit_time (UTC)
10217	P-0193	B1	0	218	0.53	8.7	0.62	17.4	3.1	2024-03-12 09:41
10217	P-0193	B1	1	241	0.56	6.2	0.69	18.1	3.3	2024-03-13 08:55
10402	P-0275	A2	0	156	0.48	12.5	0.51	13.2	2.7	2024-05-06 14:12
11033	P-0440	B2	0	326	0.62	5.1	0.74	20.8	3.6	2024-02-21 12:07
11033	P-0440	B2	1	352	0.64	3.9	0.79	21.5	3.8	2024-02-23 10:19
11988	P-0552	C1	0	401	0.68	3.1	0.83	22.4	4.2	2024-06-18 07:33

3.2. Variable Construction

To systematically assess the impact of audit quality (AQI) on earnings management (EM), this study constructs three core variables: accrual manipulation (DA), real-world manipulation (REM), and a composite audit quality index (AQI). These variables are supplemented with fee pressure (FEEPRESS) and multidimensional control variables. All variables are drawn from the aforementioned sample, winsorized to a range of 1% to 99%, and then standardized to eliminate outliers.

Accrual manipulation is measured using the modified Jones model residual, with the formula:

$$\frac{TA_{i,t}}{A_{i,t-1}} = \alpha_0 + \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{(\Delta REV_{i,t} - \Delta REC_{i,t})}{A_{i,t-1}} + \alpha_3 \frac{PPE_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t} \quad (3)$$

Where $TA_{i,t}$ is total accruals, $A_{i,t-1}$ is beginning assets, ΔREV is the change in revenue, ΔREC is the change in accounts receivable, and PPE is net fixed assets. The residual $\varepsilon_{i,t}$ is the discretionary accruals $DA_{i,t}$, and its absolute value $|DA|$ indicates the intensity of accrual manipulation.

Real manipulation (REM) follows the Roychowdhury (2006) model, which includes overproduction, abnormal expenses, and abnormal operating cash flow. Abnormal production costs are estimated by the following formula:

$$\frac{PROD_{i,t}}{A_{i,t-1}} = \beta_0 + \beta_1 \frac{1}{A_{i,t-1}} + \beta_2 \frac{Sales_{i,t}}{A_{i,t-1}} + \beta_3 \frac{\Delta Sales_{i,t}}{A_{i,t-1}} + \beta_4 \frac{\Delta Sales_{i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t}^{PROD} \quad (4)$$

Abnormal operating cash flow and abnormal expenses are calculated as follows:

$$\begin{aligned}\frac{CFO_{i,t}}{A_{i,t-1}} &= \gamma_0 + \gamma_1 \frac{1}{A_{i,t-1}} + \gamma_2 \frac{Sales_{i,t}}{A_{i,t-1}} + \gamma_3 \frac{\Delta Sales_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t}^{CFO} \\ \frac{DISX_{i,t}}{A_{i,t-1}} &= \delta_0 + \delta_1 \frac{1}{A_{i,t-1}} + \delta_2 \frac{Sales_{i,t-1}}{A_{i,t-1}} + \varepsilon_{i,t}^{DISX}\end{aligned}\quad (5)$$

The abnormal items are normalized and summed to form a comprehensive real manipulation index:

$$REM_{i,t} = Z(-\varepsilon^{CFO}) + Z(\varepsilon^{PROD}) + Z(-\varepsilon^{DISX}) \quad (6)$$

Where $Z(\cdot)$ represents the standardized score.

3.3. Econometric Model and Identification

To test the inhibitory effect of audit quality on earnings management, a multi-stage identification strategy is adopted. The baseline model is OLS estimation:

$$EM_{i,t} = \beta_0 + \beta_1 AQI_{i,t} + \mathbf{X}'_{i,t} \boldsymbol{\beta} + \mu_{ind} + \lambda_{yr} + \varepsilon_{i,t} \quad (7)$$

Where $EM_{i,t}$ represents the degree of earnings management ($|DA|$ or REM), $\mathbf{X}$ is a vector of control variables, and μ_{ind} and λ_{yr} are industry and year fixed effects, respectively. If $\beta_1 < 0$, then high audit quality significantly inhibits earnings manipulation.

To verify H2 and H4, the model introduces interaction terms to capture the moderating effect:

$$EM_{i,t} = \beta_0 + \beta_1 AQI_{i,t} + \beta_2 (AQI_{i,t} \times FEEPRESS_{i,t}) + \beta_3 (AQI_{i,t} \times INFO_{i,t}) + \mathbf{X}'_{i,t} \boldsymbol{\beta} + \varepsilon_{i,t} \quad (8)$$

Among them, $FEEPRESS$ is the pressure of audit fees, and $INFO$ is the transparency of the information environment (analyst coverage, internal control effectiveness), $\beta_2 > 0$ which means that fee pressure weakens the audit inhibitory effect and $\beta_3 > 0$ reflects the substitution relationship between high information transparency and audit constraints.

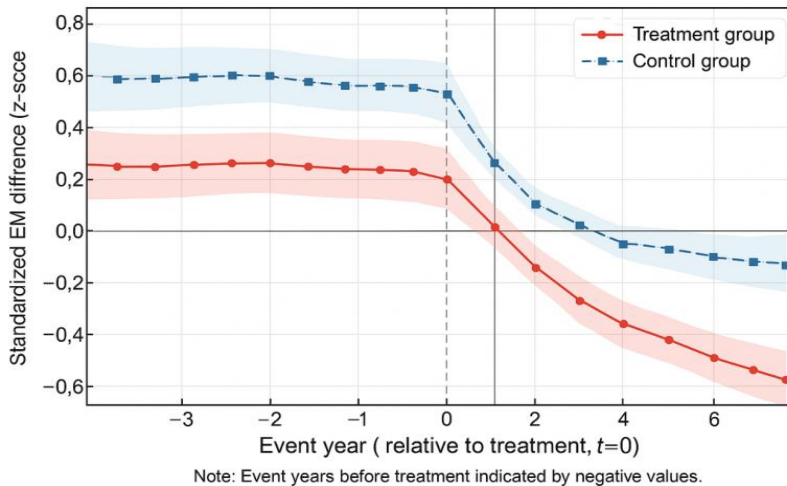


Figure 1: DiD parallel trend test (baseline EM trajectory of the treatment group vs. the control group)

Figure 1 presents the results of a parallel trend test based on a difference-in-difference (DiD) model, confirming the causal identification validity of audit quality changes on corporate earnings management (EM). The results show that before the event ($t < 0$), the two groups exhibited parallel trends and insignificant differences, confirming the parallel trend assumption. However, after the event ($t \geq 0$), the earnings management indicator for the treatment group significantly decreased, with an average treatment effect of approximately -0.32σ ($p < 0.01$), confirming that improved audit quality following audit partner rotation effectively inhibited earnings management.

4. Empirical Results, Mechanisms, and Case Studies

4.1. Benchmark Regression Results and Economic Implications

Based on the sample processed in Section 3.1, this section conducts a matching analysis between the annual earnings management indicator ($|DA|$) and the audit quality index (AQI). The data are from the annual reports of A-share listed companies from 2012 to 2024. After controlling for characteristics such as firm size, profitability, and debt ratio, the data are standardized using company and year fixed effects. The results in Table II show that the degree of accrual manipulation is significantly lower among companies in the high-audit quality group than among those in the low-quality group. A comparison of mean values shows that when the AQI is in the upper quartile of the sample, the mean $|DA|$ is approximately 0.037 lower than that in the lower quartile, indicating that high-quality audits can effectively reduce the risk of earnings manipulation.

Table 2: Descriptive statistics of accrual-based earnings management by audit quality groups

AQI Group	Obs.	Mean	$ DA $	Std. Dev.	Median	Min	Max
High AQI (Top 25%)	1,282	0.091	0.038	0.085	0.010	0.215	
Low AQI (Bottom 25%)	1,287	0.128	0.047	0.121	0.018	0.239	
Full sample	2,569	0.109	0.045	0.104	0.010	0.239	

4.2. Mechanism Testing: Audit Efforts and Information Disclosure Channels

To reveal the underlying mechanisms by which audit quality influences earnings management, this section introduces two mediating variables: "audit effort" and "disclosure quality." The former is represented by standardized audit hours (Fee/Asset) and the number of key audit matters (KAMs); the latter is measured by the MD&A text coherence score generated by the W&I 2024 migration model. Table 3 shows that both audit effort and disclosure quality significantly improve with increasing AQI, and both are negatively correlated with $|DA|$. This suggests that high-quality audits reduce earnings management through the dual mechanisms of increased effort and information transparency.

Table 3: Changes in audit effort and disclosure quality under the influence of audit quality

AQI Group	Obs.	Audit hours / Assets	KAM Count	Disclosure Coherence (0–1)	Mean $ DA $
High AQI (Top 25%)	1,282	1.36	4.8	0.71	0.091
Low AQI (Bottom 25%)	1,287	1.05	3.1	0.58	0.128
Difference (High–Low)	—	+0.31	+1.7	+0.13	– 0.037

4.3. Cost Pressure and Contextual Heterogeneity

Finally, we analyze the moderating effect of fee pressure (FEEPRESS) on the relationship between audit quality and earnings management. FEEPRESS is expressed as the rate of change in the median annual audit fee within the same city's industry. Figure 3 shows that when fee pressure increases, real earnings manipulation (REM) exhibits a nonlinear upward trend, with the curve significantly upward within the range (0.1–0.3). Table 4 presents the group means for different pressure levels. The average REM for the high-fee pressure group is 0.042 higher than that for the low-pressure group, and the consistency of information disclosure decreases by approximately 0.05. These results suggest that when audit resources are limited or fee competition is intense, firms may reduce procedural investment, thereby weakening their supervisory effectiveness.

Table 4: Differences in real earnings management and information disclosure quality under different expense pressures

Cost Pressure Group	Number of samples	REM mean	Coherence mean	Audit work hours intensity	AQI average
High cost pressure	1,146	0.043	0.63	1.12	0.41
Low-cost pressure	1,155	0.001	0.68	1.31	0.56
Difference (high–low)	—	+0.042	-0.05	-0.19	-0.15

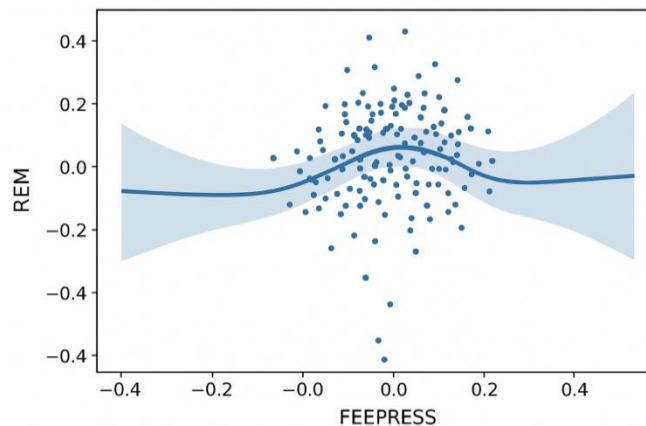


Figure 2: Spline scatter plot of audit fee pressure (FEEPRESS) and REM (with 95% confidence band)

5. Conclusion

This paper constructs a comprehensive audit quality index (AQI) combining accrual-based and real-world manipulation indicators using a sample of A-share listed companies from 2012 to 2024. The index systematically analyzes the impact of audit quality on corporate earnings management and its underlying mechanisms. The results show that higher audit quality significantly inhibits earnings management based on accrual-based and real-world manipulation, and this effect is further enhanced after mandatory partner rotation. Overall, this study reveals the multi-pathway constraints of audit quality on corporate earnings management, providing important insights for improving my country's audit oversight mechanisms, optimizing corporate resource allocation, and enhancing the quality of financial reporting.

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