Vol. 13 (2026): Proceedings of the 3rd International Conference on Business, Management and Sustainability (ICBMS 2026)
E-ISSN: 3105-0522 P-ISSN：3105-0514
DOI: https://doi.org/10.70267/icbms.2601.118131

# Corporate ESG Performance and Audit Fees: Evidence from Chinese A-Share Listed Companies

**Yaofei Zhu**

*Department of Accounting, Sun Wah International Business School, Liaoning University, Shenyang 110136, China*

**Corresponding author: Yaofei Zhu.*

## Abstract

Corporate ESG performance has emerged as a core indicator for evaluating a firm's sustainability and risk profile. Given the growing emphasis on risk-based approaches to audit pricing, how auditors assess the risks associated with corporate ESG performance remains a critical issue that warrants in-depth exploration. This study reveals that superior corporate ESG performance is significantly associated with lower audit fees. Mechanism tests show that strong ESG performance effectively mitigates corporate operating risk. This mitigation significantly reduces the audit risks perceived by auditors, which in turn optimizes audit procedures and ultimately lowers audit fees. Heterogeneity analysis reveals that this negative relationship is more pronounced in firms audited by non-Big Four accounting firms and those that do not hold shares in financial institutions. This study provides novel empirical evidence for audit pricing mechanisms from an ESG perspective and enriches the existing literature on the economic consequences of corporate ESG performance.

### Keywords

ESG performance, audit fees, operating risk, mechanism test

## 1. Introduction

The Third Plenary Session of the 20th Central Committee of the Communist Party of China emphasizes the need to perfect the modern corporate system with Chinese characteristics, supporting and guiding various enterprises to improve resource utilization efficiency, enhance management practices, and fulfill social responsibilities. Corporate ESG (Environmental, Social, and Governance) performance serves as an evaluation metric for a firm's practices in environmental protection, social responsibility, and corporate governance [1]. It reflects the principles of sustainable development that balances economic growth, environmental protection, and social justice [2]. With the continuous advancement of the “Dual Carbon” strategy (carbon peak and carbon neutrality) and the growing popularization of sustainable development concepts, corporate ESG performance has become a core indicator for assessing a firm's comprehensive competitiveness, risk management capabilities, and sustainable development potential. Its value in optimizing resource allocation, improving operational stability, and enhancing market recognition is becoming increasingly prominent. Furthermore, it provides a crucial reference for information intermediaries in the capital market to fulfill their duties.

As core information intermediaries in the capital market, auditors audit corporate financial statements to provide reasonable assurance that they are free from material misstatement, thereby enhancing the reliance of

intended users on these statements. In recent years, several accounting firms have faced regulatory sanctions due to their failure to effectively identify ESG-related risks and fulfill their assurance responsibilities. This not only damages the reputation of the certified public accountant (CPA) profession but also underscores the importance for auditors to accurately identify ESG risks and reasonably determine audit fees.

Audit fees, resulting from the negotiation between the demand and supply sides of audit services, directly reflect the auditors' time input and practice costs, while also incorporating their assessment of corporate audit risks. Based on this premise, this study utilizes the comprehensive ESG score as the measurement indicator to investigate the relationship between corporate ESG performance and audit fees.

Using China's A-share listed companies from 2014 to 2024 as the research sample, this study finds that better corporate ESG performance is significantly associated with lower audit fees. Mechanism analysis indicates that strong ESG performance can reduce firms' operating risk, thereby lowering the audit risk perceived by auditors. Consequently, auditors do not need to allocate excessive audit resources or perform additional audit procedures, which ultimately leads to a reduction in audit fees. Furthermore, the negative relationship between corporate ESG performance and audit fees is more pronounced when the auditing firm is a non–Big Four accounting firm and when the audited firm does not hold shares in other financial institutions.

The potential contributions of this study are mainly reflected in the following aspects.

First, this study enriches the literature on the economic consequences of ESG performance by examining the internal logic through which ESG affects external audit pricing, thereby filling the research gap concerning how non-financial information influences pricing mechanisms. Second, it extends the literature on the determinants of audit fees. By incorporating ESG performance into the analytical framework of audit pricing and conducting heterogeneity tests based on auditor type and corporate ownership structure, this study highlights the important role of non-financial information in risk-oriented auditing. Finally, this study contributes to the theoretical framework of audit pricing under a risk-oriented audit approach by revealing the underlying mechanism through which ESG performance influences operating risk, alters auditors' risk perceptions, and subsequently affects audit pricing, thereby providing insights for auditors to optimize pricing strategies and enhance their risk identification capabilities.

The remainder of this paper is organized as follows. Section 2 reviews the relevant literature and develops the research hypotheses. Section 3 presents the research design. Section 4 reports the empirical results and further analyses. Section 5 concludes the paper and offers recommendations.

## 2. Literature Review and Research Hypotheses

### 2.1 Literature Review

#### 2.1.1 Determinants of Audit Fees

As the demand side of audit services, the intrinsic attributes of the auditee directly determine the audit workload and the baseline of audit risk, serving as the core determinants of audit fees. First, from an internal perspective, firm size is one of the earliest identified key determinants of audit fees [3], exhibiting a significant positive impact on audit pricing [4]. Concurrently, business complexity, financial risk, and internal control quality all influence audit fees to varying degrees. Specific contributing factors include research and development (R&D) expenditures [5], debt risks [6], corporate over-indebtedness [7], goodwill impairment losses, internal control quality [8], and managerial power [9]. Second, from an external perspective, the brand reputation and professional competence of accounting firms act as critical determinants. These include the size of the accounting firm, industry expertise [10], and price competition among audit firms [11]. Finally, factors related to digital finance and the information environment, such as corporate digital transformation [12] and the comparability of accounting information [13], also play significant roles in determining audit pricing.

#### 2.1.2 Economic Consequences of ESG Performance

ESG performance positively promotes firm value and corporate innovation [14]. On the one hand, green auditing significantly increases the audit fees for key state-monitored enterprises, highlighting the critical importance of incorporating environmental matters into the scope of auditing [15]. On the other hand, there exists a U-shaped relationship between corporate performance and audit fees [16]. Finally, the disclosure of

violations and regulatory penalties concerning accounting firms negatively moderates the relationship between regulatory inquiries and audit pricing [17].

### 2.1.3 Literature Summary

Existing literature has yielded abundant findings on the determinants of audit fees, primarily focusing on the internal and external dimensions of firms. Building upon this foundation, scholars have extended their research perspectives to the association between corporate ESG performance and audit fees. While the economic consequences of ESG performance have been widely verified, current studies exhibit inconsistencies regarding its specific relationship with audit fees. Overall, although prior studies have noted the link between ESG performance and audit fees, the conclusions remain ununified, and there is a lack of systematic exploration of the underlying mechanisms connecting the two. Consequently, this study focuses on the intrinsic relationship and functioning mechanisms between ESG performance and audit fees, providing theoretical support and empirical evidence for both the research on audit fee determinants and corporate ESG practices.

## 2.2 Research Hypotheses

Grounded in the strategic context of China's high-quality economic development and the advancement of the “Dual Carbon” goals, corporate ESG performance has emerged as a core dimension for evaluating the sustainability of firms. Its role in shaping corporate risk profiles has gradually become a crucial determinant in audit pricing decisions. Within this context, strong ESG performance can reduce a firm's overall risk level by standardizing corporate operations and enhancing information transparency. As external independent parties, auditors recognize these shifts in risk profiles, which allows them to optimize resource allocation, reduce risk premiums, and ultimately lower audit fees. Essentially, superior ESG performance curbs the increase in audit fees primarily by mitigating corporate risks.

Specifically, excellent ESG performance indicates that a firm has established standardized operational systems across the environmental, social, and governance dimensions, enabling it to effectively avert various operational risks. In the environmental dimension, environmental accountability significantly reduces the audit fees of heavily polluting firms by enhancing their green governance, accounting information quality, and the reliability of management tone [18]. In the social dimension, comprehensive protection of employee rights and stable supply chain management reduce the likelihood of labor disputes and supply chain disruptions, thereby ensuring the continuity of production and operations. Conversely, a heavy burden of social insurance contributions increases a firm's operational risks, consequently elevating the audit fees it must bear [19]. In the governance dimension, a robust internal control mechanism enhances operational efficiency and stability. An efficient corporate governance structure not only mitigates agency problems within the company but also reduces the audit fees charged by accounting firms [20].

ESG performance exerts a significant mitigating effect on a firm’s financial and operational risks. The mitigation of these risks directly alleviates auditors' concerns regarding the risk of material misstatement. Regarding financial risk, evidence from the Eurozone market suggests that a firm's capacity to control financial risks is constrained by environmental, social, and governance factors; therefore, better ESG performance helps alleviate these risks and improves business performance [21]. Furthermore, improvements in ESG performance can reduce the risk of debt default [22]. Regarding operational risk, according to the China Standards on Auditing (CSA) No. 1211: Identifying and Assessing the Risks of Material Misstatement, auditors are required to comprehensively evaluate the operational risks stemming from a firm's internal and external environments. Strong ESG performance lowers the audit risk perceived by auditors, which subsequently improves audit efficiency.

In summary, strong ESG performance can significantly constrain audit fees by mitigating corporate risks and lowering auditors' risk perceptions. Based on the aforementioned theoretical reasoning, this study proposes the following research hypothesis:

Hypothesis 1 (H1): Ceteris paribus, there is a negative relationship between corporate ESG performance and audit fees; that is, superior ESG performance is associated with lower audit fees.

# 3. Research Design

## 3.1 Sample and Data Sources

Considering that China implemented the New Accounting Standards in 2007, to ensure the consistency of financial indicators, this study initially selects China's A-share listed companies from 2014 to 2024 as the research sample to investigate the impact of corporate ESG performance on audit fees. To eliminate interference from other factors, the following screening procedures are applied: (1) excluding listed companies in the financial and insurance industries; (2) excluding companies labeled as ST (Special Treatment) or *ST; and (3) excluding observations with anomalies or missing data in the main variables. The final sample comprises 37,936 firm-year observations from 5,018 companies. To mitigate the influence of extreme values, all continuous variables are winsorized at the 1st and 99th percentiles. The corporate ESG performance data used in this study are obtained from the Sino-Securities Index (Huazheng) ESG rating, while other financial data are sourced from the CSMAR database.

## 3.2 Model Specification

To examine the impact of the comprehensive ESG score on audit fees and test the core research hypothesis, this study constructs a two-way fixed effects model controlling for both year and firm fixed effects, as specified in Model (1).

$$Lnfee_{it}=\beta_0+\beta_1 ESG_{i,t}+\sum Controls_{i,t}+\mu_i+\lambda_t+\varepsilon_{i,t} \quad (1)$$

In this equation, *i* and *t* denote the firm and year, respectively. $Lnfee$ is the dependent variable representing audit fees, and $ESG$ is the core independent variable representing corporate ESG performance. $Controls$ denotes a vector of control variables. Additionally, the model incorporates both firm and year fixed effects.

The impact of corporate ESG performance on audit fees is determined by examining the sign of the regression coefficient $\beta_1$. If $\beta_1$ is significantly negative ( $\beta_1<0$), it indicates that an improvement in corporate ESG performance can reduce audit fees by mitigating audit risks. Conversely, if $\beta_1$ is significantly positive ($\beta_1>0$), it suggests that enhanced ESG performance leads to an increase in audit fees. Finally, if $\beta_1$ is statistically insignificant, it implies that the comprehensive corporate ESG score has no substantial impact on audit fees.

## 3.3 Variable Definitions

### 3.3.1 Dependent Variable: Audit Fees ($Lnfee$)

Following the measurement approach of Luo and Wu [23], audit fees are measured as the natural logarithm of a firm's current-period audit fees.

### 3.3.2 Independent Variable: Corporate ESG Performance ($ESG$)

Drawing upon the textual measurement framework from Li [24], this study uses the comprehensive ESG score published by the Sino-Securities Index (Huazheng) rating as the core independent variable, denoted as $ESG$. The Huazheng ESG evaluation system measures a firm's comprehensive performance across the environmental, social, and governance dimensions based on the characteristics of the listed company's industry. It reviews the historical trajectory of a company's ESG performance, identifies its ranking within the sub-industry, decomposes the constituents of each ESG dimension, and tracks the company's ESG risk exposure. This system provides a conceptual framework and guidance for corporate ESG information disclosure and offers data validation and support for ESG investments. Furthermore, it constructs an industry weight matrix and formulates a rating system based on scores, ultimately classifying firms into nine grades from C to AAA.

### 3.3.3 Variable Definition Table

This study selects firm size (Size), leverage (Lev), return on assets (Roa), management shareholding ratio (Mshare), Big Four auditor (Big4), shareholding ratio of the top ten shareholders (Top10), board size (Board), and CEO-chair duality (Dual) as control variables. The specific variable definitions are presented in Table 1:

*Table 1: Variable Definitions*

| Variable Type | Variable Name | Symbol | Definition |
|---|---|---|---|
| Dependent variable | Audit fees | Lnfee | Natural logarithm of audit fees |
| Independent variable | Corporate ESG performance | ESG | Comprehensive ESG score released by the Sino-Securities Index (Huazheng) rating |
| Control variables | Firm size | Size | Natural logarithm of total assets |
| | Leverage | Lev | Ratio of total liabilities to total assets |
| | Return on assets | Roa | Ratio of net profit to total assets |
| | Management shareholding ratio | Mshare | Proportion of shares held by management relative to total shares outstanding |
| | Big Four auditor | Big4 | Equals 1 if the listed company is audited by a Big Four accounting firm, and 0 otherwise |
| | Shareholding ratio of the top ten shareholders | Top10 | Proportion of shares held by the top ten shareholders relative to total shares outstanding |
| | Board size | Board | $\ln(number\ of\ board\ members\ +1)$ |
| | CEO–chair duality | Dual | Equals 1 if the chairman of the board and the general manager are the same person, and 0 otherwise |

## 4. Empirical Results and Further Analysis

### 4.1 Descriptive Statistics

Table 2 reports the descriptive statistics of the main variables. As shown in Table 2, the mean value of corporate audit fees (Lnfee) is 13.940, while the minimum, median, and maximum values are 12.770, 13.820, and 16.180, respectively, with a standard deviation of 0.636. This indicates that there are considerable differences in audit fees across firms. The mean value of ESG performance (ESG) is 72.980. The minimum, median, and maximum values are 55.920, 73.230, and 86.060, respectively, with a standard deviation of 5.472. This suggests that there are substantial differences in ESG performance among firms, and some firms exhibit relatively large variations. The descriptive statistics of the remaining control variables in the sample fall within a reasonable range.

*Table 2: Descriptive Statistics of Main Variables*

| Variable | N | Mean | p50 | SD | Min | Max | p25 | p75 |
|---|---|---|---|---|---|---|---|---|
| Lnfee | 37936.000 | 13.940 | 13.820 | 0.636 | 12.770 | 16.180 | 13.490 | 14.280 |
| ESG | 37936.000 | 72.980 | 73.230 | 5.472 | 55.920 | 86.060 | 70.010 | 76.400 |
| Size | 37936.000 | 22.250 | 22.050 | 1.273 | 19.940 | 26.300 | 21.340 | 22.950 |
| Big4 | 37936.000 | 1.943 | 2.000 | 0.233 | 1.000 | 2.000 | 2.000 | 2.000 |
| Top10 | 37936.000 | 57.870 | 58.590 | 15.370 | 22.670 | 90.280 | 46.690 | 69.860 |
| Mshare | 37936.000 | 15.030 | 2.793 | 19.660 | 0.000 | 68.280 | 0.006 | 28.280 |
| Roa | 37936.000 | 0.031 | 0.034 | 0.068 | -0.276 | 0.197 | 0.010 | 0.065 |
| Lev | 37936.000 | 0.412 | 0.401 | 0.205 | 0.056 | 0.907 | 0.246 | 0.560 |
| Board | 37936.000 | 2.216 | 2.303 | 0.172 | 1.792 | 2.639 | 2.079 | 2.303 |
| Dual | 37936.000 | 0.327 | 0.000 | 0.469 | 0.000 | 1.000 | 0.000 | 1.000 |

### 4.2 Baseline Regression Analysis

Table 3 reports the baseline regression results examining the relationship between corporate ESG performance and audit fees. Columns (1) and (2) present the regression results without control variables and with control variables, respectively.

In Column (1), the regression coefficient of corporate ESG performance (ESG) on audit fees (Lnfee) is −0.002 and is statistically significant at the 1% level, indicating that ESG performance reduces audit fees. In Column (2), after further including the control variables, the regression coefficient of corporate ESG performance (ESG) on audit fees (Lnfee) is −0.0036, which remains statistically significant at the 1% level. Therefore, the regression results indicate that better corporate ESG performance significantly reduces audit fees, providing preliminary support for Hypothesis H1.

*Table 3: Baseline Regression Results of Corporate ESG Performance and Audit Fees*

| | (1) | (2) |
|---|---|---|
| VARIABLES | Lnfee | Lnfee |
| ESG | -0.002*** | -0.004*** |
| | (-2.66) | (-8.62) |
| Size | | 0.361*** |
| | | (47.23) |
| Big4 | | -0.331*** |
| | | (-10.97) |
| Top10 | | -0.004*** |
| | | (-8.97) |
| Mshare | | -0.005*** |
| | | (-13.33) |
| Roa | | -0.467*** |
| | | (-13.26) |
| Lev | | 0.078*** |
| | | (2.69) |
| Board | | 0.012 |
| | | (0.48) |
| Dual | | -0.001 |
| | | (-0.22) |
| Constant | 14.057*** | 7.047*** |
| | (307.39) | (36.58) |
| Observations | 37,936 | 37,936 |
| Number of id | 5,018 | 5,018 |
| R-squared | 0.001 | 0.472 |

**Note: ***, *, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively. The t-values reported in parentheses are clustered robust t-statistics at the firm level. The same notation applies to the following tables.*

## 4.3 Robustness Tests

The above regression results provide preliminary support for the proposed hypothesis. To further enhance the reliability of the research findings and conclusions, this section conducts a series of robustness tests to verify the core results.

### 4.3.1 Replacing the Dependent Variable

Following the study of Yuan et al. [25], this paper replaces the original dependent variable with abnormal audit fees (Abfee) for regression analysis. The results are reported in Column (1) of Table 4. The regression coefficient of corporate ESG performance (ESG) on abnormal audit fees (Abfee) is −0.003 and is statistically significant at the 1% level. This indicates that better ESG performance also reduces abnormal audit fees, suggesting that the previous findings and conclusions are robust.

### 4.3.2 Replacing the Independent Variable

To further test robustness, this study introduces an alternative explanatory variable. Referring to the research of Gao [26], an alternative ESG composite score (ESG2) is used as an indicator reflecting corporate ESG performance.

Column (2) of Table 4 reports the regression results using the alternative ESG composite score as the explanatory variable. The regression coefficient of audit fees (Lnfee) on the alternative ESG composite score (ESG) is −0.016.

The results indicate that after replacing the explanatory variable, the conclusion that better ESG performance leads to lower audit fees still holds. Therefore, the previous findings and conclusions remain robust.

### 4.3.3 Replacing the Sample

This study also conducts additional tests using alternative research samples. Since the new revenue standard was implemented on January 1, 2018, while the implementation timing differed across different types of firms,

this study focuses on listed companies after the implementation of the new revenue standard and re-estimates the regression model.

Specifically, the sample period is restricted to 2019–2024, which reduces the number of observations from 37,936 to 24,152. Column (3) of Table 4 reports the regression results after changing the sample. The estimated coefficient of corporate ESG performance (ESG) on audit fees (Lnfee) is −0.004 and remains statistically significant at the 1% level. This result indicates that even when the sample is restricted to the period after the implementation of the new revenue standard, the conclusions of this study still hold.

*Table 4: Robustness Test Results After Replacing the Dependent Variable, Independent Variable, and Sample*

| | (1) | (2) | (3) |
|---|---|---|---|
| VARIABLES | Abfee | Lnfee | Lnfee |
| ESG | -0.003*** | -0.016*** | -0.004*** |
| | (-4.07) | (-4.36) | (-4.49) |
| Size | 0.004 | 0.342*** | 0.322*** |
| | (0.76) | (58.92) | (53.00) |
| Big4 | 0.004 | 0.581*** | 0.581*** |
| | (0.14) | (21.95) | (21.93) |
| Top10 | 0.004 | 0.027 | -0.014 |
| | (0.11) | (0.74) | (-0.38) |
| Mshare | 0.009 | -0.052** | -0.073*** |
| | (0.36) | (-2.08) | (-2.79) |
| Roa | 0.033 | -0.953*** | -0.963*** |
| | (0.54) | (-15.79) | (-14.46) |
| Lev | -0.018 | 0.046 | 0.117*** |
| | (-0.57) | (1.49) | (3.62) |
| Board | -0.001 | -0.072*** | -0.046 |
| | (-0.05) | (-2.62) | (-1.60) |
| Dual | 0.000 | 0.049*** | 0.047*** |
| | (0.05) | (5.45) | (4.98) |
| Firm and year fixed effects | Controlled | Controlled | Controlled |
| Observations | 37,144 | 37,144 | 24,152 |
| R-squared | 0.002 | 0.608 | 0.604 |

## 4.4 Endogeneity Analysis

Corporate ESG performance may be associated with firm-level factors such as corporate governance quality, managerial risk preferences, and industry competition structure. While ESG performance may influence audit fees, a reduction in audit fees may also allow firms to allocate more resources to ESG governance and improve their ESG performance. Therefore, a potential reverse causal relationship may exist between audit fees and corporate ESG performance. To mitigate the potential endogeneity issue described above, this study conducts a robustness test using the annual industry-average ESG performance within the same year (ESGIV) as an instrumental variable.

This study argues that the industry-year average ESG performance is significantly correlated with a firm's own ESG performance. Within an industry, there exists a clear peer effect and compliance pressure, meaning that firms' ESG practices are not conducted in isolation but are significantly influenced by the overall ESG development level of the industry. Therefore, the industry-year average ESG performance is expected to be positively correlated with individual firms' ESG performance, satisfying the relevance requirement of the instrumental variable. Meanwhile, the industry-year average ESG performance is an industry-level macro variable, reflecting the overall ESG development level of a specific industry in a given year rather than the micro-level decision of any single firm. Therefore, it satisfies the exogeneity requirement of the instrumental variable. Following the Shenwan industry classification standard, this study groups sample firms by industry and year. The arithmetic mean of ESG performance of all firms within each industry-year group is calculated and used as the instrumental variable for the firm's ESG performance.

The results of the instrumental variable regression are reported in Table 5. Column (1) presents the first-stage regression results. The regression coefficient of the instrumental variable ESGIV on the original explanatory variable ESG is significantly positive, indicating that when the annual ESG average of the industry

to which a firm belongs is higher, the firm's own ESG performance is also better. This finding is consistent with the expectation described above, suggesting that the instrumental variable satisfies the relevance condition and can effectively explain the variation in the explanatory variable ESG, further confirming the rationality of the instrumental variable selection. Column (2) reports the second-stage regression results using ESGIV as the instrumental variable. The regression coefficient of ESG performance on audit fees (Lnfee) is −0.0056 and is statistically significant at the 1% level. This result indicates that after addressing the endogeneity issue using the instrumental variable, the causal relationship between corporate ESG performance and audit fees still holds.

*Table 5: Endogeneity Test Results Based on the Instrumental Variable*

| | (1) | (2) |
|---|---|---|
| VARIABLES | ESG | Lnfee |
| ESGIV | 0.4954*** | |
| | (28.96) | |
| ESG | | -0.0056*** |
| | | (-3.46) |
| Size | 1.3982*** | 0.3401*** |
| | (28.37) | (107.23) |
| Big4 | -1.0727*** | -0.5816*** |
| | (-5.13) | (-60.22) |
| Top10 | 0.0147*** | 0.0002 |
| | (4.64) | (1.64) |
| Mshare | 0.0290*** | -0.0007*** |
| | (11.74) | (-4.98) |
| Roa | 9.9799*** | -0.9240*** |
| | (16.29) | (-24.33) |
| Lev | -5.6508*** | 0.0692*** |
| | (-20.25) | (4.35) |
| Board | -0.2363 | -0.0829*** |
| | (-0.89) | (-6.53) |
| Dual | 0.0830 | 0.0512*** |
| | (0.95) | (11.12) |
| Constant | 9.0345*** | 8.0702*** |
| | (5.26) | (88.51) |
| Firm and year fixed effects | Controlled | Controlled |
| Observations | 37,936 | 37,936 |
| R-squared | 0.218 | 0.599 |

## 4.5 Mechanism Test

The previous results indicate that better corporate ESG performance reduces audit fees. This section further explores the mechanism through which ESG performance affects audit fees. Specifically, this study examines the mechanism from the perspective of corporate operating risk.

Strong ESG performance is often accompanied by sound corporate governance mechanisms, which can effectively constrain managerial behavior and improve the scientificity and rationality of corporate operating decisions. High-quality ESG governance strengthens the internal control system, reducing problems such as managerial decision errors, overinvestment, or underinvestment, thereby avoiding significant profit fluctuations caused by biased operational decisions. At the same time, comprehensive ESG information disclosure enhances corporate transparency and reduces information asymmetry, enabling firms to better respond to market changes. Consequently, it improves the stability of core business operations and reduces corporate operating risk.

The core pricing logic of audit fees originates from the dual considerations of audit effort and audit risk [3]. As a concentrated manifestation of a firm's internal risk, operating risk serves both as a key basis for auditors to evaluate audit risk and as an important determinant of the scale of audit input. When operating risk is high, firms exhibit weaker earnings stability and greater uncertainty regarding future operations. As a result, auditors need to perform more comprehensive audit procedures and allocate additional audit resources to address potential audit risks, thereby increasing audit fees.

John et al. [27] and Acharya et al. [28] argue that higher operating risk is associated with greater earnings volatility. Therefore, this study measures operating risk using the volatility of corporate earnings. Following the research of Wang et al. [29], this study uses the rolling three-period standard deviation of the lagged EBITDA margin (Risk) to measure corporate operating risk and conducts the mediation analysis using this variable. This measure has several advantages. First, it removes the interference of industry-wide systematic fluctuations, thereby accurately reflecting the firm's own operating performance and avoiding the influence of industry cycles and other external factors on the measurement of operating risk. Second, it excludes the impact of non-operating factors, better capturing the profitability of the firm's core business operations. Third, the rolling three-period lagged standard deviation focuses on the historical volatility characteristics of corporate earnings, objectively reflecting the cumulative effect of operating risk and ensuring the rationality and accuracy of the mechanism test.

The results of the mechanism test are reported in Table 6. In Column (1), the regression coefficient of the rolling three-period standard deviation of the lagged EBITDA margin (Risk) on corporate ESG performance (ESG) is significantly negative, indicating that better ESG performance indeed reduces the volatility of the lagged EBITDA margin and thus lowers corporate operating risk. Column (2) reports the regression results in which audit fees (Lnfee) are regressed simultaneously on corporate ESG performance (ESG) and the mediating variable (Risk). The regression coefficient of the mediating variable is significantly positive, indicating that lower operating risk is associated with lower audit fees. Meanwhile, the regression coefficient of ESG performance on audit fees remains significantly negative, although the absolute value of the coefficient decreases compared with the baseline regression. This suggests that operating risk plays a partial mediating role in the relationship between ESG performance and audit fees. These results indicate that corporate ESG performance can reduce audit fees by lowering corporate operating risk, thereby decreasing the audit risk perceived by auditors and the required level of audit input.

*Table 6: Mechanism Test Results*

| | (1) | (2) |
|---|---|---|
| VARIABLES | Risk | Lnfee |
| ESG | -0.0018*** | -0.0026*** |
| | (-11.28) | (-6.54) |
| Risk | | 0.2444*** |
| | | (10.11) |
| Size | -0.0102*** | 0.3353*** |
| | (-8.16) | (53.50) |
| Big4 | -0.0044 | -0.4038*** |
| | (-1.24) | (-15.30) |
| Top10 | -0.0005*** | -0.0031*** |
| | (-6.02) | (-9.01) |
| Mshare | -0.0005*** | -0.0029*** |
| | (-7.85) | (-11.33) |
| Roa | -0.5474*** | -0.3562*** |
| | (-29.83) | (-10.81) |
| Lev | -0.0246*** | 0.0916*** |
| | (-2.87) | (3.56) |
| Board | -0.0056 | -0.0265 |
| | (-0.89) | (-1.26) |
| Dual | 0.0024 | 0.0060 |
| | (1.15) | (0.98) |
| Constant | 0.5164*** | 7.7207*** |
| | (15.12) | (48.26) |
| Controls | Controlled | Controlled |
| Firm and year fixed effects | Controlled | Controlled |
| Observations | 32,720 | 32,720 |
| Number of id | 4,910 | 4,910 |

## 4.6 Heterogeneity Analysis

The preceding analysis verifies the core conclusion that corporate ESG performance reduces audit fees by lowering operating risk. To further examine whether this relationship varies across firms with different

characteristics, this study conducts heterogeneity tests from two perspectives—auditor characteristics and corporate ownership structure—specifically based on whether the firm is audited by a Big Four accounting firm and whether the firm holds shares in other financial institutions.

### 4.6.1 Accounting Firm Size

The size of an accounting firm is closely related to audit quality [30]. Large accounting firms, due to the quasi-rent effect, tend to provide higher-quality audit services.

On the one hand, the audit procedures of Big Four accounting firms are highly standardized. Based on long-term professional experience, they have established fixed and comprehensive audit procedures and risk assessment systems. Their audit resource allocation and pricing decisions rely more on preset standards of overall corporate risk. Consequently, they are relatively less sensitive to the marginal changes in operating risk brought about by ESG performance. Even if a firm's ESG performance improves and operating risk declines, the standardized audit procedures of Big Four firms are difficult to adjust quickly, and therefore audit fees are unlikely to decrease significantly.

On the other hand, Big Four accounting firms possess stronger bargaining power. Owing to their brand reputation and market position, they hold a stronger dominant position in audit pricing, resulting in a certain rigidity in audit fee determination. As a result, ESG performance is less likely to alter their established pricing logic, making it difficult for ESG performance to generate a noticeable audit fee premium or discount.

In contrast, non–Big Four accounting firms have relatively limited audit resources and weaker risk management capabilities. Therefore, they rely more heavily on firms' operating risk levels when adjusting audit effort and audit pricing. Accordingly, this study expects that when a firm is audited by a non–Big Four accounting firm, the negative relationship between ESG performance and audit fees will be more pronounced.

This study measures accounting firm size based on the ranking of domestic accounting firms. If a firm is audited by one of the Big Four accounting firms, the dummy variable Big4 equals 1; otherwise, it equals 0.

Table 7 reports the grouped regression results based on accounting firm size. Column (1) presents the results for firms audited by Big Four accounting firms. The regression coefficient of corporate ESG performance (ESG) on audit fees (Lnfee) is not statistically significant at the 1% significance level. Column (2) reports the results for firms audited by non–Big Four accounting firms, where the regression coefficient of ESG performance on audit fees is significantly negative at the 1% level.

These results suggest that non–Big Four accounting firms exhibit greater pricing flexibility and are more responsive to the risk changes brought about by ESG performance, thereby strengthening the negative impact of ESG performance on audit fees.

### 4.6.2 Whether Firms Hold Shares in Other Financial Institutions

Financial institutions, as professional institutional investors, possess strong financial resources, professional governance capabilities, and superior risk identification abilities. Their shareholding behavior can effectively enhance corporate governance quality and standardize corporate decision-making, thereby moderating the relationship between corporate ESG performance and audit fees. The integration of industry and finance helps alleviate financing constraints faced by non-state-owned firms, thereby promoting higher levels of risk-taking by real-sector firms. For state-owned enterprises, this integration mainly increases their risk-taking level through enhanced capital profit-seeking incentives [31]. When corporate operating risk increases, firms tend to acquire shares in financial institutions, while such shareholding subsequently reduces firms' future operating risk [32]. Specifically, when firms hold shares in other financial institutions, on the one hand, the financing convenience brought by the integration of industry and finance reduces corporate leverage and financial risk. On the other hand, the professional supervision provided by financial institutions mitigates principal–agent problems and lowers operating risk. Therefore, when auditors assess corporate audit risk, they tend to believe that the professional oversight and resource support from financial institutions can effectively control corporate risk. Consequently, auditors may pay less attention to corporate ESG performance as a non-financial signal, resulting in an insignificant impact of ESG performance on audit fees. In contrast, firms that do not hold shares in financial institutions lack the supervision and risk management provided by professional institutional investors. In such cases, auditors rely more heavily on corporate ESG performance when assessing

audit risk and determining audit fees. Therefore, this study expects that the negative effect of ESG performance on audit fees will be more pronounced among firms that do not hold shares in financial institutions.

Based on corporate ownership structure, this study constructs a dummy variable FinInst. If a firm holds shares in other financial institutions, FinInst = 1; otherwise, FinInst = 0. Column (3) of Table 7 reports the results for firms holding shares in financial institutions. Although the regression coefficient of ESG performance on audit fees (Lnfee) is negative, it is not statistically significant. This indicates that ESG performance does not significantly affect audit fees for firms holding shares in financial institutions. Column (4) reports the results for firms without shareholdings in financial institutions. The regression coefficient of ESG performance on audit fees is significantly negative at the 1% significance level, indicating that the negative impact of ESG performance on audit fees is stronger for firms that do not hold shares in financial institutions. These findings support the previous expectation that firms without shareholdings in financial institutions strengthen the effect of ESG performance in reducing operating risk, thereby reducing audit fees.

*Table 7: Heterogeneity Test Results*

| VARIABLES | (1) Lnfee Big4=1 | (2) Lnfee Big4=0 | (3) Lnfee FinInst=1 | (4) Lnfee FinInst=0 |
|---|---|---|---|---|
| ESG | -0.002 | -0.003*** | -0.004 | -0.003*** |
| | (-1.47) | (-6.68) | (-1.51) | (-6.80) |
| Size | 0.349*** | 0.356*** | 0.401*** | 0.362*** |
| | (18.49) | (58.19) | (16.17) | (61.42) |
| Big4 | | | 0.437*** | 0.393*** |
| | | | (4.97) | (15.51) |
| Top10 | -0.104 | -0.336*** | 0.227 | -0.324*** |
| | (-0.89) | (-9.96) | (1.38) | (-9.77) |
| Mshare | -0.226** | -0.271*** | -0.109 | -0.278*** |
| | (-2.05) | (-10.87) | (-0.24) | (-11.22) |
| Roa | -0.342*** | -0.593*** | -0.546** | -0.582*** |
| | (-2.62) | (-16.97) | (-2.06) | (-16.85) |
| Lev | -0.088 | 0.035 | 0.032 | 0.038 |
| | (-0.91) | (1.35) | (0.20) | (1.50) |
| Board | -0.044 | -0.033* | 0.026 | -0.022 |
| | (-0.57) | (-1.72) | (0.24) | (-1.16) |
| Dual | 0.068*** | 0.003 | 0.099** | 0.006 |
| | (3.56) | (0.45) | (2.41) | (1.06) |
| Constant | 7.047*** | 6.430*** | 5.019*** | 6.354*** |
| | (17.41) | (44.66) | (10.59) | (45.99) |
| Firm and year fixed effects | Controlled | Controlled | Controlled | Controlled |
| Observations | 2,184 | 35,758 | 581 | 36,563 |
| Number of id | 414 | 4,817 | 342 | 4,998 |

## 5. Conclusions and Recommendations

This study examines how corporate ESG performance affects audit fees and explores the underlying mechanism. The results show that there is a significant negative relationship between corporate ESG performance and audit fees—that is, better ESG performance is associated with lower audit fees. Mechanism analysis further reveals that strong ESG performance reduces corporate operating risk, thereby lowering the audit risk perceived by auditors. As a result, auditors do not need to allocate excessive audit resources or perform additional audit procedures, which ultimately leads to lower audit fees. Furthermore, the relationship between ESG performance and audit fees exhibits heterogeneous characteristics. From the perspective of auditor type, the negative relationship is significant for firms audited by non–Big Four accounting firms. From the perspective of ownership structure, the negative relationship is more pronounced for firms that do not hold shares in financial institutions.

Based on these findings, this study puts forward the following three recommendations. First, from the policy perspective, under the background of the increasing popularity of ESG concepts and the gradual standardization of audit pricing, policymakers should focus on two key aspects: ESG information disclosure systems and audit risk management. Since disagreements in ESG ratings and information opacity may interfere

with audit decision-making, policymakers should improve ESG disclosure regulations by clarifying disclosure standards and content, refining information related to ESG and corporate operating risk, and enhancing the comparability and transparency of ESG information. Meanwhile, drawing on the implementation experience of China Standards on Auditing No. 1631, ESG-related operating risks should be incorporated into industry audit guidelines to guide auditing institutions in reasonably identifying risk changes associated with ESG performance and promote the coordinated development of ESG practices and the auditing industry. Second, from the investor perspective, the market should strengthen the application of corporate ESG information in investment decisions and corporate governance. Investors should pay close attention to the relationship between ESG performance and corporate operating risk and use ESG performance as an important reference for assessing corporate operational stability. At the same time, investors should focus on the interaction between ownership structure and ESG performance and exercise shareholder rights to encourage firms to improve ESG practices, thereby achieving a balance between investment returns and risk management. Third, from the auditor perspective, as ESG performance increasingly becomes an important focus of auditing, auditors should optimize their audit strategies and pay close attention to corporate ESG performance while considering differences in auditor type and ownership structure. In particular, non–Big Four accounting firms should strengthen their ability to identify ESG-related risks, incorporate ESG performance into the audit risk assessment framework, and adjust audit pricing based on ESG performance while fully considering the marginal changes in operating risk associated with ESG performance. Meanwhile, auditors should enhance professional training related to ESG issues, standardize audit procedures concerning ESG-related risks, improve audit quality and the rationality of audit pricing, and fully perform the risk-monitoring function of auditing.

## References

[1] Gillan, S. L., Koch, A., Starks, L. T. Firms and Social Responsibility: A Review of ESG and CSR Research in Corporate Finance, Journal of Corporate Finance. 2021, 66, 101889. https://doi.org/10.1016/j.jcorpfin.2021.101889

[2] Li, X., Xu, T. Research Progress on Environment-Social Responsibility-Corporate Governance, Economic Perspectives. 2022(8), 133-146.

[3] Simunic, D. A. The Pricing of Audit Services: Theory and Evidence, Journal of Accounting Research. 1980, 18(1), 161-190. https://doi.org/10.2307/2490397

[4] Zhang, X., Liu, S., Zhu, L., Yin, Z. Application of SPSS20.0 in Studying the Relationship between Firm Size and Audit Quality of Listed Companies, Jiangsu Science & Technology Information. 2018, 35(12), 43-45. https://doi.org/10.3969/j.issn.1004-7530.2018.12.013

[5] Chang, Q., Xie, X., Gong, X., Diao, S. Research on R&D Expenditure, Property Rights Nature, and Audit Fees, Continental Bridge Perspective. 2024(10), 38-40.

[6] Zhang, C., Zhou, Z. Research on the Impact of Short-Term Debt Used for Long-Term Purposes on Audit Decisions: From the Perspective of Abnormal Audit Fees, Contemporary Economics. 2025, 42(3), 89-101. https://doi.org/10.3969/j.issn.1007-9378.2025.03.009

[7] Ren, S. Research on the Impact of Excessive Debt on Audit Fees, Journal of Xi'an Shiyou University (Social Sciences Edition). 2025, 34(1), 30-39. https://doi.org/10.3969/j.issn.1008-5645.2025.01.005

[8] Yang, C., Zhou, Q. Goodwill Impairment Losses, Internal Control Quality, and Audit Fees, Friends of Accounting. 2021(9), 33-39. https://doi.org/10.3969/j.issn.1004-5937.2021.09.005

[9] Deng, W., Ping, A., Xiong, H. Research on the Impact of Internal Control and Managerial Power on Audit Fees, Chinese Certified Public Accountant. 2018(5), 49-54.

[10] Wang, X., Yang, J., Pan, Y. Empirical Study on the Relationship between Accounting Firm Size, Industry Expertise, and Audit Fees, Financial Management Research. 2023(5), 98-103.

[11]Wang, P., Yao, L. Research on the Current Status, Problems, and Countermeasures of Audit Fees in China: Comparative Analysis Based on Domestic and Overseas Listed Companies, Finance Research. 2023(3), 25-37.

[12] Liu, J., Zhang, Y. Corporate Digital Transformation and Audit Fees: From the Perspectives of Risk-Taking and Internal Control, Chinese Certified Public Accountant. 2025(8), 42-49.

[13] Pan, L., Tao, B. Accounting Information Comparability, Inefficient Investment, and Audit Fees, Times Economy and Trade. 2024, 21(8), 65-67. https://doi.org/10.3969/j.issn.1672-2949.2024.08.016

[14] Wang, H. Analysis of Influencing Factors and Economic Consequences of ESG Performance in Listed Enterprises, Cooperative Economy and Science. 2025(10), 124-127. https://doi.org/10.3969/j.issn.1672-190X.2025.10.040

[15] Wu, X., You, J. Environmental Concerns and Audit Fees: Empirical Evidence from Green Auditing, Foreign Economics & Management. 2025, 47(10), 3-20. https://doi.org/10.16538/j.cnki.fem.20250409.202

[16] Yao, Z., Yan, F. Research on the Impact of Corporate Performance on Audit Fees: Panel Threshold Regression Analysis Based on A-share Listed Companies, Chinese Certified Public Accountant. 2019(10), 47-50.

[17] Lu, Y., Zhao, Q., Tian, Y. Premium or Diligence? Research on the Impact of CICPA Annual Report Audit Regulatory Talks on Audit Pricing, Business Accounting. 2024(13), 47-51. https://doi.org/10.3969/j.issn.1002-5812.2024.13.009

[18] Guo, X., Ma, J. Environmental Accountability Risk and Audit Fees of Heavily Polluting Enterprises: Quasi-Natural Experimental Research Based on Central Ecological and Environmental Protection Inspections, Auditing Research. 2024(3), 113-124. https://doi.org/10.3969/j.issn.1002-4239.2024.03.012

[19] Shen, R., Song, X. Social Insurance Contribution Burden, Operating Risk, and Audit Fees, Auditing and Finance. 2022(1), 39-41. https://doi.org/10.3969/j.issn.1006-5466.2022.01.018

[20] Cai, J. Research on the Relationship between Corporate Governance, Audit Risk, and Audit Fees, Auditing Research. 2007(3), 65-71.

[21] Sassen, R., Hinze, A.-K., Hardeck, I. Impact of ESG Factors on Firm Risk in Europe, Journal of Business Economics. 2016, 86(8), 867-904. https://doi.org/10.1007/s11573-016-0819-3

[22] Li, H., Zhang, X., Zhao, Y. ESG and Firm's Default Risk, Finance Research Letters. 2022, 47, 102713. https://doi.org/10.1016/j.frl.2022.102713

[23] Luo, J., Wu, Y. Digital Transformation and Audit Fees: Negative Energy or Empowerment?, Accounting Research. 2024(6), 148-161. https://doi.org/10.3969/j.issn.1003-2886.2024.06.011

[24] Li, J. Research on the Impact of ESG Rating Scores on Corporate ROE Performance: Based on the SSE 180 Index, Exhibition Economy. 2025(8), 147-150. https://doi.org/10.19995/j.cnki.CN10-1617/F7.2025.08.147

[25] Yuan, M., Wang, Z., Zhou, T., Tang, S. Supplier Structure Changes and Audit Fees, Foreign Economics & Management. 2025, 47(12), 97-112. https://doi.org/10.16538/j.cnki.fem.20250905.201

[26] Gao, X. ESG Responsibility Concept, Corporate Earnings Management Behavior, and Analyst Earnings Forecast Quality, China Collective Economy. 2024(8), 74-77. https://doi.org/10.3969/j.issn.1008-1283.2024.8.zgjtjj202408023

[27] John, K., Litov, L., Yeung, B. Corporate Governance and Risk-Taking, The Journal of Finance. 2008, 63(4), 1679-1728. https://doi.org/10.1111/j.1540-6261.2008.01372.x

[28] Acharya, V. V., Amihud, Y., Litov, L. Creditor Rights and Corporate Risk-Taking, Journal of Financial Economics. 2011, 102(1), 150-166. https://doi.org/10.1016/j.jfineco.2011.04.001

[29] Wang, Z., Wang, Z., Li, J. Operating Risk and Working Capital Financing Decisions, Accounting Research. 2017(5), 60-67. https://doi.org/10.3969/j.issn.1003-2886.2017.05.010

[30] Deangelo, L. E. Auditor Size and Audit Quality, Journal of accounting and economics. 1981, 3(3), 183-199.

[31] Huang, G., Liu, F. Does Shareholding in Financial Institutions by Real Enterprises Improve Risk-Taking Level?, Finance & Accounting Monthly. 2018(18), 59-66. https://doi.org/10.19641/j.cnki.42-1290/f.2018.18.008

[32] Xu, L., Wu, W., Ding, Y. Operating Risk of Non-Financial Enterprises and Shareholding in Financial Institutions, Journal of Systems & Management. 2022, 31(1), 191-198. https://doi.org/10.3969/j.issn1005-2542.2022.01.018

## Funding

This research received no external funding.

## Conflicts of Interest

The authors declare no conflict of interest.

## Acknowledgment

This paper is an output of the science project.

## Copyrights