ISSN 2616-5902 Vol. 5, Issue 21: 135-144, DOI: 10.25236/AJBM.2023.052120

Research on Corporate Social Responsibility and Audit Fees

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Abstract: *Corporate social responsibility (CSR) is a heterogeneous activity with differentiated cost inputs among different companies. With the increasing attention of the general public to CSR in recent years, numerous scholars have conducted research on this topic. Existing literature has confirmed that CSR may have an impact on internal controls of companies, thereby further affecting their operations and risks. The operation and risk profile of a company, in turn, influences the audit fees it pays. The existing literature mainly categorizes factors influencing audit fees into company characteristics and accounting firm characteristics, without considering the impact of cultural and ethical factors such as corporate social responsibility. To address this gap, this study empirically analyzes the relationship between CSR and audit fees. The research utilizes a sample of 1,100 eligible A-share listed companies from the Shanghai and Shenzhen stock markets, spanning five consecutive years. By incorporating dummy variables for year and industry, multiple linear regression models are employed for the analysis. The findings demonstrate a significant and statistically meaningful impact of CSR on audit fees. Companies with a stronger sense of social responsibility tend to pay lower audit fees. Moreover, companies with higher CSR awareness exhibit a reduced likelihood of incurring abnormal audit fees. This study contributes to the development of audit pricing theory and encourages companies to fulfill their social responsibilities.*

Keywords: *Audit fees; Abnormal audit fees; Corporate social responsibility; Corporate internal control*

1. Introduction

Audit fees represent an important economic linkage between accounting firms and their clients in the context of audit services. They reflect both the anticipated audit resources invested by auditors and the compensation sought by auditors for potential audit risks. Historically, there has been no unified fee standard set by the government for audit services provided by accounting firms, making the study of factors influencing audit fees a meaningful topic in the current Chinese audit market. Since the publication of the "Question and Answer No. 6 on the Disclosure of Company Information for Publicly Issued Securities - Payment of Accounting Firm Compensation and its Disclosure" by the China Securities Regulatory Commission in December 2001, the audit market has become more transparent, providing data support for researchers studying audit fees.

In previous studies, the following factors have been identified as influencing audit fees.① company size, ② complexity of operations, ③ audit risk,④characteristics of accounting firms, and ⑤other company-specific factors (such as corporate governance structure, management capabilities, etc.). Previous scholars have not studied the impact of corporate social responsibility as a manifestation of "corporate philanthropy" on the fees charged by external accounting firms. In light of this research gap, this paper aims to explore the general relationship between audit fees and corporate social responsibility through empirical analysis. Additionally, a certain proportion of companies pay audit fees that are higher than the normal level, which is often considered an undesirable phenomenon. It may reflect a lack of auditor independence, which can impact the quality of audit reports. This paper also aims to investigate the relationship between abnormal audit fees and corporate social responsibility.

2. Review of the Research Status at Home and Abroad

2.1. Classification of Audit Fees and Influencing Factors

Audit fees refer to the compensation charged by a certified public accounting firm for the services

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provided, which includes the cost of the auditor's time and effort as well as the risk involved. Since Simunic (1980)**[1]** pioneered the study of audit fees from a new perspective, scholars both domestically and internationally have extensively researched this topic over the past 30 years.

Currently, the influencing factors of audit fees can be broadly categorized into the following three main categories:

2.1.1. Firm-specific characteristics

Zhang Jixun and Xu Yi (2005)**[2]** empirically confirmed that the size of listed companies, the complexity of their audit engagements, and their geographic location are significantly related to audit fees. Zhong Fengying and Fan Xiaoyin (2018)**[3]** found a positive correlation between the total assets of the audited companies, management expenses, and audit fees, while there was a negative correlation between the quick ratio, long-term debt to total assets ratio, and audit fees. Tian Weiping (2018) **[4]** supplemented the discussion by highlighting the correlation between the nature of the actual controlling shareholder and the amount of audit fees, with non-state-owned enterprises often paying higher fees than state-owned enterprises. Wang Jian and Wang Wei (2018)**[5]**mainly focused on earnings transparency and related-party transactions in their study, concluding that these two indicators are generally positively correlated with audit fees. In other words, companies with higher volumes and amounts of related-party transactions tend to have higher audit fees. Xia Ning and Yang Shuo (2018)**[6]** found that compared to companies with a large number of individual investors in the public market, companies with more independent institutional investors and higher levels of shareholding tend to pay lower audit fees. Chen Jin and Zhang Xian (2017)**[7]** used various metrics to measure employee promotion incentives and explored their relationship with audit fees. They found that companies with better promotion incentives tend to have higher audit fees, which may be related to agency risks. He Weifeng and Liu Wei (2015)**[8]** conducted data analysis and discovered a negative correlation between the competence of corporate managers and audit fees. Shi Xiaoxiao and Chen Yuanhui (2017)**[9]** studied the impact of explicit characteristics of managers on audit fees and found a positive correlation between the average age and average education level of management team and audit fees. In other words, companies with older management team and higher average education levels often face higher audit fees. Shi Yanli and Lu Guihua (2018)**[10]** took a different approach by analyzing the ethical aspect of companies and using tax payments as an evaluation criterion. They concluded that companies with high integrity tend to pay lower audit fees. Xing Liquan and Chen Hanwen (2013)**[11]** analyzed the situation of listed companies in the market and their own competitiveness and found that in competitive markets, higher market competition intensity is often associated with lower audit fees. At the same time, the market position of listed companies has a negative impact on audit fees.

2.1.2. Characteristics of accounting firms

Zhu Xiaoping and Yu Qian (2004)**[12]** mentioned in their article that whether an accounting firm is one of the "Big Ten" accounting firms, the number of years the audit firm has continuously served the listed company, and the audit opinion can have an impact on audit fees to some extent.

2.1.3. Business risks

Since O'Keefe et al. first discovered that audit fees are influenced by client risks, numerous scholars have analyzed the relationship between various factors that affect the risks of listed companies and audit fees. Xing Liquan et al. (2013)**[11]** found that client risk is an important influencing factor on audit fees, as the higher the company's risk, the higher the audit fees demanded by auditors. Zhang Junrui et al. (2015)**[13]** found that companies with pending litigation tend to have higher audit fees compared to those without relevant issues, and the higher the amount involved in litigation, the greater the likelihood of higher audit fees. Wang Yue (2017)**[14]** pointed out in their article that companies with higher legal risks often face higher audit fees, which aligns with common knowledge. Fan Xingyu (2017)**[15]** discovered in their research that negative media coverage, as a form of social supervision, can increase the financing and default risks faced by companies, leading to higher audit fees. Yuan Rongli et al. (2018)**[16]** analyzed from the perspective of agency risks and concluded that companies that pay directors and officers liability insurance premiums may face the dilemma of needing to pay higher audit fees.

Audit fees can generally be divided into normal audit fees, which are the audit fees considering the factors mentioned above, and abnormal audit fees. Regarding the calculation method for abnormal audit fees, Professor Simunic 1980**[1]** proposed that abnormal audit fees can be represented by the absolute difference between actual audit fees and normal audit fees. In recent years, with the improved knowledge and awareness of shareholders and institutional investors, the audit reports issued by accounting firms as neutral third parties have received more attention. The question of whether listed companies would spend

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more on audit fees to obtain a "favorable" audit report has also received attention from researchers. Fang Junxiong and Hong Jianqiao (2008)**[17]** confirmed in their study that Chinese listed companies have successfully purchased audit opinions by paying higher audit fees. They also mentioned that the success rate of purchasing audit opinions in China is relatively high, which may be related to the imperfect development of the Chinese audit market. The studies conducted by Shi Yuan and Kang Lining (2017)**[18]** and He Linjie and Dai Juan (2017)**[19]** have also confirmed the same conclusion, namely, that clients engage in manipulating financial statements through the payment of abnormal audit fees.

2.2. The Relationship between Internal Control and Audit Fees

Since the Enron scandal, company internal control has attracted attention from the listed companies themselves and various stakeholders in society. Many scholars have also conducted research on this issue, and to some extent, the argument that company internal control affects enterprise risk has been supported. Chen Songsheng and Yang Shuang (2010)**[20]** found that companies unwilling to disclose their internal control status often have certain issues with their internal control systems, and at the same time, the audit fees of these companies fluctuate significantly over the years. Cao Jianxin and Chen Zhiyu (2011)**[21]** showed in their article that the effectiveness of internal control affects audit fees based on the regression results.

Zhang Wangfeng et al. (2011)**[22]** developed customized evaluation indicators for enterprise internal control, enabling the quantification of internal control. The analysis revealed a negative correlation between the quality of internal control and audit fees. Sun Xinxian and Tian Lijun (2011)**[23]** used the Internal Control Index (ICI) to quantify the level of enterprise internal control and concluded that the higher the level of internal control, the lower the risk faced by the company. Zhang Ping and Zhang Taotao (2015)**[24]** analyzed the relationship between enterprise internal control and audit fees using internal control element indicators and arrived at the same conclusion that better internal control leads to lower risk for the company, resulting in lower audit fees demanded by accounting firms.

2.3. The Relationship between Corporate Social Responsibility and Company Internal Control

Corporate social responsibility (CSR) refers to the responsibility of a company to create profits while also being accountable to internal stakeholders (employees and shareholders), as well as taking responsibility for consumers, social stability, and environmental friendliness. Existing methods for measuring corporate social responsibility mainly include content analysis, reputation index, pollution index, and corporate philanthropy (Hua Shuanglian, 2011**[25]**). With the increasing recognition of CSR by the government, the general public, the emphasis of accounting firms on auditing risks, and the growing awareness of companies themselves, more and more literature has confirmed the relationship between corporate social responsibility and company internal control.

Zhang Zhaoguo et al. (2013)**[26]**, through empirical research, demonstrated that lagged social responsibility has a significant positive impact on current financial performance, revealing a statistically significant relationship between the two. Wang Qian (2014)**[27]**, in a meta-analysis summarizing 42 empirical research articles and 119 effect sizes, indicated an overall positive correlation between corporate social responsibility and financial performance. In other words, a company that fulfills social responsibility tends to have better financial performance and lower debt risk, which may result in lower audit fees demanded by accounting firms. Liu Hong (2014)**[28]**, focusing on futures companies, found that fulfilling social responsibility helps prevent corporate risks. Feng Liyan et al. (2016)**[29]** proposed research findings that in the economic environment of China, actively undertaking social responsibility contributes to reducing corporate risks, supporting the risk reduction hypothesis. Furthermore, considering the influence of differences in ownership nature, whether it is state-owned enterprises or non-state-owned enterprises, good performance in social responsibility can effectively reduce corporate risks.Therefore, whether analyzing from the perspective of improving financial performance or reducing operational risks, the importance of corporate social responsibility can be seen. Clearly, corporate social responsibility can impact auditors' assessment of company risks and profitability, which may affect audit fees.

3. Research Hypotheses

With the advancement of globalization, listed companies are required to comply with more stringent international standards. Whether they adhere to corporate social responsibility is the foundation for

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companies to thrive in the global operating environment. Deng Yuhua (2013)**[30]**, through literature review and case studies, proposed that fulfilling corporate social responsibility would have a positive impact on enhancing corporate competitiveness. Additionally, the literature review also suggests that companies with high levels of corporate social responsibility tend to have better financial performance and lower operational risks. Based on previous research, it can be observed that corporate social responsibility, as a soft requirement of ethical corporate culture, can influence internal control and subsequently affect corporate behavior, thus influencing audit fees. Based on these considerations, the following hypotheses are proposed in this study:

Hypothesis 1: There is a negative correlation between corporate social responsibility and audit fees.

Abnormal audit fees, as a special case, may also be influenced by corporate social responsibility. Abnormal audit fees can be understood as the difference between the actual audit fees paid by the company and the estimated audit fees calculated using the normal audit fee estimation proposed by Simunic (1980)**[1]**. It can be further classified into positive abnormal audit fees and negative abnormal audit fees. Positive abnormal audit fees occur when the actual audit fees paid exceed the predicted values, and in practice, this situation is often associated with financial statement manipulation by listed companies or the loss of independence by auditors. On the other hand, the occurrence of negative abnormal fees may be related to competition in the audit market and the evaluation of auditors' workload. In this study, the absolute value of abnormal audit fees is used to explore its relationship with corporate social responsibility. It is reasonable to analyze that a socially responsible listed company is less likely to engage in financial statement manipulation. Therefore, the following hypothesis is proposed:

Hypothesis 2: There is a negative correlation between corporate social responsibility and abnormal audit fees.

4. Research Design

4.1. Data Source and Sample Selection

Starting from 2009, the China Securities Regulatory Commission (CSRC) required listed companies to disclose their social responsibility reports along with their annual reports. It is found that the scores for CSR reports were relatively low from 2009 to 2011 (below 35 points). This could be attributed to the lower importance placed by listed companies on these reports. However, since 2012, there has been a significant improvement in the CSR scores of the reports. It can be said that since 2012, corporate social responsibility has gained widespread recognition among listed companies.

This paper selects A-share listed companies in the Shanghai and Shenzhen stock exchanges from 2012 to 2016 as our research sample. After obtaining the raw data from the Guotai An database, ST companies, financial and insurance companies, companies for which continuous five-year audit fees data and other control variable data are not available, as well as companies that are listed or delisted between 2012 and 2016 are successively excluded. Finally, a sample consisting of 1100 companies is obtained. For the continuous variables, this paper conducts winsorize at the 1% level before regression analysis.

4.2. Empirical Model and Research Variables

4.2.1. Regression Model to Explore the Relationship between Audit Fees and Corporate Social Responsibility

$$Fee = \alpha_0 + \alpha_1 Donation + \sum \alpha_2 Control + \varepsilon + Year + Industry \quad (1)$$

In Model (1), Fee represents audit fees. In the article by Chen Hanwen and Xing Liquan (2013)**[11]**, it is mentioned that the natural logarithm of audit fees is used as the measurement for audit fees. This study will also adopt this measurement method. Corporate social responsibility is measured using the variable Donation, which is defined as the ratio of corporate donations to the previous year's revenue. This approach effectively eliminates biases caused by different company sizes and enhances the credibility of the independent variable. Control represents the control variables. The control variables used in this study are based on the research literature of Zhang Tianshu and Huang Jun (2013)**[31]** and He Weifeng et al. (2015)**[8]**. They include auditor opinion, whether the auditing firm is one of the top ten accounting firms (Big10), changes in the auditing firm compared to the previous year (Change), asset-liability ratio (AL), quick ratio (Quick), return on equity (ROE), occurrence of losses in the current year for listed companies (LOSS), ownership attribute (Attribute), accounts receivable-to-total assets ratio

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(AR), inventory-to-total assets ratio (Inventory), natural logarithm of total assets (Asset), company's geographic location (Location), sustainability indicators for listed companies (Sustainable), and the number of subsidiary companies of listed companies (Subsidiary). A total of 14 control variables are included. Definitions and specific measurement methods for the control variables can be found in Table 1.

Table 1: Variable Explanations

Variables	Variable Codes	Meaning and Explanation of Variables
Types of Audit Opinions	Opinion	When a listed company receives an unqualified opinion, it is coded as 1; otherwise, it is coded as 0.
Whether it is Big10 Accounting Firms	Big10	According to the document "Top 100 Comprehensive Evaluation of Accounting Firms in 2016" released by the Chinese Institute of Certified Public Accountants (CICPA) in October 2016, the top ten accounting firms are PwC, Ruihua, Deloitte, Crowe, EY, BDO, Tiantong & Partners, ShineWing, RSM, and Zhongxingcai. When the auditing firm of a listed company is one of the top ten accounting firms, it is coded as 1; otherwise, it is coded as 0.
Is there a change in the accounting firm	Change	Compared to the previous year, if there has been a change in the auditing firm of a listed company, the value is 1; otherwise, it is 0.
Debt-to-Asset Ratio	AL	AL = Total Liabilities / Total Assets × 100%
Quick Ratio	Quick	(Cash + Short-term Securities + Net Accounts Receivable) / Current Liabilities × 100%
Return on Equity	ROE	(Net Profit + Financial Expenses) / Average Total Assets; Average Total Assets = (Ending Total Assets + Beginning Total Assets) / 2
Is the company making a loss	LOSS	If a listed company incurs a loss (net profit less than 0) in the current year, it is 1; otherwise, it is 0.
Property Rights Nature	Attribute	If the ultimate controlling entity of a listed company is the government, the value is 1; otherwise, it is 0.
Accounts Receivable to Total Assets Ratio	AR	Ratio of the Difference between Accounts Receivable and Allowance for Doubtful Accounts to Total Assets
Inventory to Total Assets Ratio	Inventory	Ratio of the Difference between Inventory and Allowance for Inventory Obsolescence to Total Assets
Natural Logarithm of Total Assets	Asset	ln (Total Assets)
Sustainable Development Capability	Sustainable	Select the corresponding indicators in Guotai An Data database
Location/Region of the Company	location	If the registered location of a listed company is in Shaanxi, Chongqing, Guizhou, Yunnan, Xinjiang, Sichuan, Gansu, Ningxia, Qinghai, Tibet, Henan, Shanxi, Hubei, Anhui, Hunan, or Jiangxi, the value is 1; otherwise, it is 0.
Number of Subsidiaries	Subsidiary	Number of Subsidiaries of a Listed Company.

In addition to the variables mentioned above, the model also includes time and industry dummy variables to examine the fixed effects of industry and year. The reason for taking the logarithm of total assets among the control variables is to mitigate the negative impact of differences in magnitudes and variances to some extent.

4.2.2. Exploring the Measurement Methods for Abnormal Audit Fees

$$PFee = \beta_0 + \beta_1 Opinion + \beta_2 Big10 + \beta_3 Change + \beta_4 AL + \beta_5 Quick + \beta_6 ROE + \beta_7 LOSS + \beta_8 Attribute + \beta_9 AR + \beta_{10} Inventory + \beta_{11} Asset + \beta_{12} Substanable + \beta_{13} location \quad (2)$$

In Model (2), PFee refers to the estimated audit fees obtained from the model. According to the normal audit fee estimation method proposed by Simunic (1980)**[1]**, the factors that have been demonstrated to affect audit fees, namely the control variables from Model (1), are incorporated along with industry and year dummy variables for estimation. The calculation method for abnormal audit fees (AbFee) is obtained by subtracting the absolute value of the estimated audit fees from Model (2) from the natural logarithm of the actual audit fees of the listed company.

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4.2.3. Exploring the Relationship between Abnormal Audit Fees and Corporate Social Responsibility

$$AbFee = \varphi_0 + \varphi_1 Donation + \sum \varphi_2 Control + \varepsilon + Year + Industry \quad (3)$$

In Model (3), AbFee refers to the absolute value of abnormal audit fees. The same multiple linear regression model as in Model (1) is used to analyze the relationship between corporate social responsibility and abnormal audit fees.

4.3. Descriptive Statistics and Correlation Analysis

Table 2 presents a descriptive statistical analysis of the 18 variables involved in the three hypotheses mentioned above. In Model (1), there is a significant difference between the maximum and minimum values of audit fees (Fee), reflecting a large variation in audit fees paid by listed companies in our country. This difference may be related to the varying payment capabilities of these companies.

In Model (2), the predicted audit fees (PFee) estimate the normal audit fees. From Table 2, it can be observed that the range and standard deviation of the predicted values (PFee) are smaller compared to the actual audit fees (Fee), indicating a more compact distribution of data.

Table 2: Descriptive Statistics

	count	mean	sd	max	min	median	1st Qu	3rd Qu
Fee	5,500	13.810	0.671	17.600	9.210	13.710	13.340	14.150
Pfee	5,500	13.780	0.535	16.690	12.470	13.710	13.400	14.080
AbFee	5,500	0.304	0.266	4.491	0.000	0.243	0.117	0.418
Opinion	5,500	0.984	0.127	1.000	0.000	1.000	1.000	1.000
Big 10	5,500	0.562	0.496	1.000	0.000	1.000	0.000	1.000
Change	5,500	0.134	0.341	1.000	0.000	0.000	0.000	0.000
AL	5,500	0.456	0.208	2.861	0.014	0.451	0.295	0.617
Quick	5,500	1.617	2.101	44.494	0.051	1.045	0.639	1.799
ROE	5,500	0.072	0.127	2.931	-2.459	0.071	0.030	0.118
LOSS	5,500	0.077	0.266	1.000	0.000	0.000	0.000	0.000
Attribute	5,500	0.112	0.315	0.000	0.000	0.000	1.000	0.000
AR	5,500	0.111	0.102	0.678	0.000	0.084	0.029	0.164
Inventory	5,500	0.171	0.160	0.940	0.000	0.126	0.070	0.203
Asset	5,500	22.350	1.186	27.100	19.490	22.170	21.500	23.060
Donation	5,500	0.001	0.002	0.067	0.000	0.000	0.000	0.000
Sustainable	5,500	0.035	1.063	1.807	-77.067	0.048	0.018	0.086
Location	5,500	0.274	0.446	1.000	0.000	0.000	0.000	1.000
Subsidiary	5,500	20.880	26.872	550.000	1.000	13.000	7.000	25.000

In Model (3), the dependent variable (AbFee) represents the deviation between the actual audit fees (Fee) and the predicted values (PFee). The average deviation is approximately 0.3, indicating that the average theoretical deviation for the sample companies is 0.3. The average deviation rate (the ratio of the average value of AbFee to the average value of actual audit fees) is around 2.2%, suggesting that the majority of sample companies have relatively small discrepancies between the actual audit fees paid and the predicted values obtained using the audit fee estimation method. This implies that the proportion of companies with abnormal audit fees is relatively small.

For the independent variable Donation in Models (1) and (3), this paper finds that out of the 5,500 firm-year samples, there are 333 instances where the donation value was 0, accounting for 6.05% of the total. This indicates that over 90% of listed companies have a sense of social responsibility and are willing to establish a positive social image through donations. The average ratio of donations to the previous year's revenue is 0.0005, suggesting that on average, listed companies allocate 0.05% of their operating income for external donations. The maximum value of 0.0666 indicates that, during the five-year period from 2012 to 2016, the company with the highest donation ratio allocated 6% of its operating income to social donations. This proportion is higher than the average donation ratio of 120 times, reflecting significant variation in the attitudes of listed companies in the Chinese market towards fulfilling social responsibility, even when the effect of company size is largely excluded. On average, state-owned holding companies donate 0.076% of their revenue, slightly higher than the average donation ratio of listed companies. This suggests that state-owned enterprises pay more attention to social responsibility, possibly due to greater supervision and scrutiny from the public compared to private enterprises. Moreover, the analysis reveals a decreasing trend in the proportion of the amount allocated for donations

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to total income during the period of 2012-2016. This could be attributed to the transition of China's economy from an extensive development model to a high-quality and high-returns model during that period, which led to a decline in GDP growth rate. It could also be due to the growth rate of donation amounts being lower than the growth rate of corporate income.

Regarding the analysis of control variables, it is found that 98.36% of listed companies receive standard unqualified opinions. 56.15% of listed companies choose Big 10 audit firms. 13.42% of companies change audit firms during the five-year period. Among the samples, 11.15% of companies are state-owned enterprises, and 27.36% of enterprises are located in relatively underdeveloped regions such as Qinghai, Tibet, and Xinjiang. On average, each listed company has 21 affiliated subsidiaries, and the number of subsidiary companies of listed companies has shown an increasing trend during the 2012-2016 five-year period.

In Table 3, the correlation coefficient matrix, it is observed that there is no significant correlation between the independent variables and unrelated variables in Model (1), as well as among the unrelated variables. Therefore, it can be concluded that a regression model can be used. The correlation coefficient between Donation and Fee is -0.07, indicating a preliminary negative correlation between audit fees and corporate social responsibility. Variables such as Assets, Subsidiary, AL, Quick, and Big 10 also show preliminary significant correlations with audit fees. However, correlation coefficients only provide preliminary indications of the relationships between variables, and specific results can only be obtained after conducting multiple linear regressions.

Table 3: Correlation Coefficient Matrix (Model 1)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Fee	-															
Opinion	-0.005	-														
Big 10	0.218	-0.015	-													
Change	-0.066	-0.023	-0.026	-												
AL	0.395	-0.093	0.061	0.016	-											
Quick	-0.247	0.032	-0.057	0.005	-0.575	-										
ROE	0.036	0.056	0.002	0.022	-0.08	0.066	-									
LOSS	0.027	-0.128	0.03	-0.006	0.191	-0.1	-0.492	-								
Attribute	-0.117	-0.02	-0.019	0.02	-0.069	0.052	-0.006	-0.011	-							
AR	-0.159	0.01	-0.015	0.007	-0.072	0.074	0.043	-0.062	0.018	-						
Inventory	0.062	0	-0.005	-0.01	0.372	-0.225	-0.006	-0.003	0.025	-0.151	-					
Asset	0.772	0.032	0.144	-0.036	0.545	-0.301	0.067	-0.009	-0.11	-0.217	0.169	-				
Donation	-0.074	0.016	-0.037	0.032	-0.1	-0.072	0.067	-0.025	0.039	-0.045	0.011	-0.075	-			
Sustainable	0.014	0.134	-0.008	0.01	-0.083	0.014	-0.198	-0.102	0.007	-0.007	0.009	0.039	0.007	-		
Location	-0.029	0.001	-0.114	0.03	0.072	-0.037	-0.054	0.064	0.003	-0.133	-0.049	0.048	0.001	-0.026	-	
Subsidiary	0.47	0.024	0.06	-0.037	0.28	-0.149	0.059	-0.032	-0.048	-0.08	0.155	0.467	-0.021	0.013	-0.025	-

In Table 4, the correlation coefficient matrix, it is observed that there is no significant correlation between the independent variables and control variables in Model (3), as well as among the control variables. Therefore, it can be concluded that a multiple regression model can be used. The correlation coefficient between Donation and AbFee is -0.03, indicating a preliminary negative correlation between audit fees and corporate social responsibility.

Table 4: Correlation Coefficient Matrix (Model 3)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
AbFee	-															
Opinion	-0.014	-														
Big 10	0.048	-0.015	-													
Change	0.026	-0.023	-0.026	-												
AL	0.118	-0.093	0.061	0.016	-											
Quick	-0.041	0.032	-0.057	0.005	-0.575	-										
ROE	0.031	0.056	0.002	0.022	-0.08	0.066	-									
LOSS	0.001	-0.128	0.03	-0.006	0.191	-0.1	-0.492	-								
Attribute	-0.025	-0.02	-0.019	0.02	-0.069	0.052	-0.006	-11	-							
AR	-0.043	0.01	-0.015	0.007	-0.072	0.074	0.043	-0.062	0.018	-						
Inventory	0.004	0	-0.005	-0.01	0.372	-0.225	-0.006	-0.003	0.025	-0.151	-					
Asset	0.241	0.032	0.144	-0.036	0.545	-0.301	0.067	-0.009	-0.11	-0.217	0.169	-				
Donation	-0.025	0.016	-0.037	0.032	-0.1	0.072	0.067	-0.025	0.039	-0.045	0.011	-0.075	-			
Sustainable	-0.002	0.134	-0.008	0.01	-0.083	0.014	-0.198	-0.102	0.007	-0.007	0.009	0.039	0.007	-		
Location	-0.016	0.001	-0.114	0.03	0.072	-0.037	-0.054	0.064	0.003	-0.133	-0.049	0.048	0.001	-0.026	-	
Subsidiary	0.147	0.024	0.06	-0.037	0.28	-0.149	0.059	-0.032	-0.048	-0.08	0.155	0.467	-0.021	0.013	-0.025	-

5. Empirical Analysis

5.1. Testing Hypothesis 1

Model (1) employs the R statistical software to conduct regression analysis between the independent variables and the dependent variable, as well as multiple linear regression after adding control variables. The results are shown in Table 5.

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Table 5: Regression Results for Hypothesis 1

	Coefficient	P value	Coefficient	P value
Donation	-28.603***	0.000	-6.540**	0.048
Opinion			-0.129***	0.005
Big 10			0.126***	0.000
Change			-0.054***	0.002
AL			-0.075*	0.080
Quick			-0.011***	0.002
ROE			-0.024	0.671
LOSS			0.068***	0.008
Attribute			-0.055	0.002
AR			-0.069***	0.259
Inventory			-0.112***	0.035
Asset			0.412***	0.000
Sustainable			0.007**	0.184
Location			-0.093***	0.000
Subsidiary			0.003***	0.000
year	Yes		Yes	
Industry	Yes		Yes	
obs	5,500		5,500	
Adjusted R^2	0.005		0.647	

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively

The linear regression between the independent variable "Donation" and the dependent variable "Fee" yields an estimated coefficient of -24.6, which is highly significant after including year and industry dummy variables. This suggests a clear negative correlation between the independent variable and the dependent variable, indicating that corporate social responsibility has an impact on audit fees.

In the regression model considering the control variables, the Adjusted R-squared is 0.647, indicating that the model effectively explains the relationship between the variables. The independent variable "Donation" still exhibits a negative correlation with the dependent variable, with a significant interaction effect at a two-star level. This suggests that companies with higher levels of corporate social responsibility tend to pay lower audit fees, consistent with Hypothesis 1.

Furthermore, from the regression results of the control variables, it can be observed that the audit opinion (Opinion), changes in audit firms compared to the previous year for listed companies (Change), the proportion of quick assets (Quick), company nature (Attribute), and company registration location (Location) are significantly negatively correlated with audit fees. On the other hand, variables such as whether the accounting firm is a Big 10 firm (Big 10), whether the listed company experiences losses (LOSS), total assets (Asset), and the number of subsidiary companies (Subsidiary) are significantly positively correlated with audit fees. These regression results align with common knowledge and expectations.

5.2. Testing Hypothesis 2

Model (3) utilizes the R statistical software to analyze the relationship between the independent variable "Donation" and the dependent variable "AbFee." After including year and industry dummy variables, the results are shown in Table 6.

Table 6: Regression Results for Hypothesis 2

	Coefficient	P value	Coefficient	P value
Donation	-4.202*	0.052	-2.281	0.280
Opinion			-0.041	0.158
Big 10			0.006	0.419
Change			0.027**	0.013
AL			0.031	0.251
Quick			0.004	0.104
ROE			0.023	0.476
LOSS			0.006	0.849
Attribute			-0.040	0.122
AR			-0.023	0.561
Inventory			-0.112***	0.001
Asset			0.052**	0.000
Sustainable			-0.001	0.764
Location			-0.015*	0.068
Subsidiary			0.000***	0.002
year	Yes		Yes	
Industry	Yes		Yes	
obs	5,500		5,500	
Adjusted R^2	0.010		0.069	

Note: ***, **, and * indicate significance at the 1%, 5%, and 10% levels, respectively

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From the regression results, it can be observed that there is a negative correlation between the independent variable "Donation" and abnormal audit fees, indicating that companies with better corporate social responsibility may have lower instances of abnormal audit fees. However, due to a high p-value, the results are not sufficiently significant. The analysis of Model (3) reveals that the explanatory power is relatively weak, which could be attributed to the influential variables on audit fees not having a significant impact on abnormal audit fees. In this regression result, the number of subsidiary companies (Subsidiary), the proportion of inventory to total assets (Inventory), total assets (Assets), company location (Location), and whether there are changes in the accounting firm (Change) have a significant impact on abnormal audit fees for listed companies.

6. Conclusion and Outlook

This study employs empirical research methods to explore the influence of corporate social responsibility as a cultural and ethical factor on audit fees and abnormal audit fees, building upon existing factors that affect audit fees. To quantify corporate social responsibility, it uses corporate philanthropy index, specifically processed corporate donations, as a measure. The research findings indicate that corporate social responsibility does impact audit fees, with higher levels of social responsibility leading to lower audit fees. However, the correlation between corporate social responsibility and abnormal audit fees was not significant.

The innovation of this study lies in considering the indirect impact of the relatively soft factor of corporate social responsibility on audit fees. Previous studies have primarily focused on firm characteristics and characteristics of accounting firms. This study expands the scope of factors influencing audit fees to some extent.

The research findings have a positive impact on audit fees in the Chinese audit market and encourage listed companies to cultivate their own sense of social responsibility. It highlights that in addition to attracting consumers and building a good corporate reputation, a high level of social responsibility can also save costs for companies to some extent.

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