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An Empirical Study on the Impact of Corporate Social Responsibility on Financial Performance in Financial Enterprises

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Abstract

As society advances, corporate social responsibility (CSR) has garnered substantial scholarly attention. This article aims to explore the impact mechanism of financial CSR on its financial performance. The research adopted an empirical research method and conducted an in-depth study of the panel data of 71 listed financial companies in China from 2013 to 2020. This study focuses on the specific impact of financial CSR on financial performance, and further explores the mediating role of corporate reputation in the relationship between the two. The research results show that the social responsibility practices of financial enterprises significantly improve their financial performance, and corporate reputation plays a mediating role in the relationship between the two. The research conclusions not only provide new perspectives and methods for the management practices of financial enterprises, and also provides policy makers with a theoretical basis to promote the effective implementation of CSR.

Keywords: *financial enterprises, corporate social responsibility, financial performance, corporate reputation.*

1. Introduction

With the progress and development of society, corporate social responsibility has received more and more attention. The importance of corporate participation in social welfare activities has become increasingly apparent. However, in the face of the challenges brought about by corporate social responsibility, people have encountered a series of complex problems, such as the widening gap between the rich and the poor, environmental degradation, resource shortages, and lack of integrity. Many companies are too focused on economic interests and ignore the importance of social responsibility. This pursuit of profit maximization has led to a series of social problems, such as the depletion of ecological resources and the loss of employee rights. Therefore, at the international level, companies are encouraged to support the United Nations Sustainable Development Goals (SDGs), follow the Global Reporting Initiative (GRI), join the United Nations Global Compact (UNGC), comply with ISO 26000 standards and the International Labor Organization (ILO) core labor standards to promote global social responsibility practices and sustainable development.

China's national policies require companies to fulfill their social responsibilities, including laws and regulations such as the Company Law and the Enterprise Income Tax Law, as well as government guiding documents such as the Corporate Social Responsibility Reporting Guidelines. Chinese state-owned enterprises play a demonstration role in social responsibility and strengthen cooperation with international organizations to improve their reputation and competitiveness on the international stage. As China, the world's second largest economy, gradually increases its international political and economic influence, Chinese companies are taking various measures to promote economic growth, respond to natural disasters and public health crises, and solve social problems. In this context, financial institutions, as an important part of China's economic development, must have a good ability to respond to emergencies, resist various risks, and be able to create long-term economic value in a sustainable and stable manner, so as to achieve more significant social influence. Under the theme of "promoting high-quality development" emphasized in the "14th Five-Year Plan", companies need to pay more attention to sustainable development and integrate it into all aspects of business development.

In the current economic environment, the relationship between financial corporate social responsibility (CSR) and financial performance is particularly important. With the global emphasis on sustainable development and social responsibility, financial institutions are expected to actively fulfill their social responsibilities while promoting economic growth to achieve balanced development of the economy, society and the environment. In order to fulfill their social responsibilities and promote long-term sustainable development, financial institutions need to pay attention to issues such as employee welfare, environmental protection and community development to achieve coordinated development of the economy, society and the environment. Theoretical circles have also

continued to pay attention to the relationship between social responsibility and financial performance. Most studies believe that corporate social responsibility helps companies enhance their competitiveness (Boulouta, 2013; Eccles, Ioannou, & Serafeim, 2014) and improve financial performance (Song, 2024; Zhu, Li, & Wang, 2024). However, most of the research scope excludes the financial industry, lacking attention to the social responsibility and financial performance of financial industry companies. Corporate social responsibility is not only a moral responsibility of enterprises, but also one of the important strategies for corporate operations. Financial enterprises themselves also need to maintain their reputation, manage risks, and enhance their competitiveness. They can enhance public trust and ensure sustainable development by actively fulfilling their social responsibilities.

2. Objectives

The purpose of this research is to gain a deeper understanding of whether and how the corporate social responsibility of financial institutions affects their financial performance under the condition of corporate reputation as a mediating variable, and to provide guidance for practice and policy making. This paper will explore the impact mechanism of corporate social responsibility on financial performance and help companies understand the actual impact of social responsibility on financial performance.

3. Materials and Methods

3.1. Variable Definition

Research on financial performance in the existing literature usually adopts the accounting indicator approach. For example, Cao, Zhang, and Li (2016) examined the impact of ROA on financial performance from four dimensions: economic responsibility, legal responsibility, moral responsibility, and philanthropic responsibility. Zhou, Wang, and Yang (2017) regarded net interest rate on total assets (ROA) as an important criterion for evaluating financial performance. In addition, Li and Shi (2018) also used the net interest rate on total assets for measurement, and used the return on net assets as the basis for robustness testing. These research results show that the net interest rate on total assets has significant universality in evaluating a company's financial performance and can effectively reflect the profitability of a company's assets. Therefore, this article will draw on previous research and select net interest rate on total assets (ROA) as a measure of financial performance. ROA is measured by dividing a company's net profit by its total assets.

From the perspective of stakeholders, the fulfillment of corporate social responsibility mainly includes six dimensions: creditors, shareholders, suppliers, consumers, employees, and government. This paper takes the financial industry as an example. Based on research, the total score of corporate social responsibility (CSR) of Chinese financial listed companies is selected as the measurement standard of social responsibility. The larger the score, the stronger the ability of the enterprise to fulfill its social responsibility and the better the performance of social responsibility (Zhu, 2011; Zhou, He Dexu, & Li, 2012). Therefore, this paper selects the total score of corporate social responsibility rating of Chinese financial listed companies as an indicator.

When studying the relationship between corporate social responsibility and financial performance, the mediating variable refers to the variable that plays a role in transmitting or partially explaining the relationship between the two. The mediating variable can effectively reveal the specific mechanism of its influence. This paper uses corporate reputation as a mediating variable for discussion. In the study, this paper refers to the results of Zhang and Zhou (2002), who believe that corporate reputation, as an intangible asset, reflects the evaluation of stakeholders on the information and relevant experience held by the company. This evaluation not only reflects the degree of trust of stakeholders in the company, but also constitutes the substantive judgment of the public and stakeholders on the quality of a company. In addition, this paper draws on existing research to divide the level of corporate reputation based on whether listed companies have violated regulations, and measures corporate reputation by whether regulatory agencies (such as the China Securities Regulatory Commission, the Shanghai Stock Exchange, listed companies, etc.) have ever issued violation announcements to punish companies (Sun, Wang, & Niu, 2010; Zhang, Yu, & Liu, 2016). Corporate reputation is a dummy variable, which uses whether listed companies violate regulations to distinguish the level of corporate reputation. If there is no violation notification, it is considered to have a good reputation, and otherwise it is 0.

Referring to the existing literature, the following variables are selected as control variables: company size (SIZE), ownership nature (SOE), capital structure (LEV), enterprise age (AGE), ownership concentration

(OC) and board size (BOD). The main variables and definitions are as follows:

Company size (SIZE). The larger the company, the more social resources it controls and the greater the attention it will receive from the public. Therefore, larger companies attach more importance to social responsibility and their own reputation (Zhang, Jin, & Li, 2013; Zhang & Lv, 2020). Therefore, this paper uses the natural logarithm of the company's total assets at the end of the year as an indicator.

Property rights (SOE), state-owned enterprises need to take into account social interests while pursuing economic interests, while non-state-owned enterprises are mainly for profit. Compared with non-state-owned enterprises, state-owned enterprises occupy more social resources and should play a leading role in assuming social responsibilities (Zhang et al., 2013; Li & Yu, 2017). The measurement standard is 1 for state-owned enterprises and 0 for non-state-owned enterprises.

Capital structure (LEV), based on the research of Zhang et al. (2013), capital structure has an important impact on corporate financial performance. Appropriate debt, exerting financial leverage, reducing the capital cost of the enterprise, is conducive to increasing corporate profits; but excessive use of borrowing and commercial credit will cause liquidity pressure on the enterprise, expose the enterprise to financial risks, and affect the financial performance of the enterprise. This article uses the debt-to-asset ratio to reflect the capital structure of the enterprise. This article uses the debt-to-asset ratio as a measurement indicator of LEV, and the debt-to-asset ratio is measured by dividing total liabilities by total assets.

Enterprise age (AGE), based on the research of Chen, Wang, and Ye (2019), the longer the operation time, the richer the social resources and experience of the enterprise, the deeper the understanding of social responsibility, the more capable of carrying out social responsibility projects, and the more stable relationship with stakeholders, which can show a more stable financial performance. However, it may also mean that the enterprise may have accumulated some historical problems and may face some challenges and the need for reform in fulfilling its social responsibilities. The measurement standard is the observation year minus the establishment year.

Equity concentration (OC), based on the research of Zhang et al. (2013), the higher the shareholding ratio of the largest shareholder, the more likely it is to create the possibility of "one dominant shareholder", and the stronger its ability to encroach on other stakeholders, making it difficult to protect the interests of small and medium-sized enterprises, hindering the corporate governance mechanism, affecting the company's financial performance, and may further affect the assumption of corporate social responsibility. OC is measured by dividing the number of shares held by the company's largest shareholder by the total number of shares in the company.

Board size (BOD) , Based on the research of Zhang et al. (2020), companies with moderate size may be more likely to achieve efficient decision-making and effective supervision, which will help improve the company's performance and social responsibility. A larger board of directors may mean more opinions and viewpoints, which will help improve the diversity and quality of decision-making, but also increase the difficulty of supervision. On the contrary, a smaller board of directors may face problems such as information asymmetry and centralized decision-making, which may affect the company's decision-making efficiency and risk control capabilities. Therefore, the number of board members was selected as the indicator.

3.2. Data Sources and models

This paper adopts an empirical research method, using the data of listed companies in China's financial industry from 2013 to 2020 as the research sample to explore the relationship between social responsibility and financial performance. In order to ensure the reliability of the research data, ST and ∗ST companies were excluded; companies that were newly listed or delisted from 2013 to 2020 were excluded; and companies with missing indicator data were excluded. The relevant data involved are all from the CSMAR Guotai'an database, WIND Wind database, China's listed financial companies' annual reports and "Social Responsibility Report", and some data are obtained through manual collection and collation. This paper eliminates the missing values of the sample and obtains the observation values of 71 listed companies, totaling 568 sample panel data for 8 years.

In order to explore the mediating role of corporate reputation in the impact of corporate social responsibility on financial performance, this paper draws on the mediating effect model of Wen and Ye (2014) and constructs the following model to verify the hypothesis:

$$ROA_{it}=\alpha_0+\beta_1 CSR_{it}+\beta_2 Controls_{it}+\varepsilon$$
$$REP_{it}=\alpha_0+\beta_1 CSR_{it}+\beta_2 Controls_{it}+\varepsilon$$

$$ROA_{it}=\alpha_0+\beta_1 CSR_{it}+\beta_2 REP_{it}+\beta_3 Controls_{it}+\varepsilon$$

Among them, α_0 represents the intercept term, β_i represents the coefficient of the explanatory variable, ε represents the residual term, CSR represents the total corporate social responsibility score of Chinese financial listed companies, REP represents corporate reputation, Controls represents all control variables, and all indicators are processed using current data.

3.3 Research Hypothesis

Based on the resource dependence theory and the social contract theory, the resource dependence theory emphasizes that enterprises rely on external resources in their operations, including suppliers, customers, investors and society. By actively fulfilling their social responsibilities, enterprises can help enterprises obtain and maintain these important resources, reduce transaction costs and risks, and thus improve their financial performance. The social contract theory points out that there is an implicit contract between enterprises and society, and enterprises need to assume corresponding social responsibilities while pursuing profits. When enterprises actively fulfill their social responsibilities, they can firstly gain social recognition and support; secondly, they can attract and retain better talents, improve their sense of identity and satisfaction with the enterprise, and enhance the productivity and creativity of employees; thirdly, they can focus on sustainable development, better respond to market changes and social expectations, and thus improve the financial performance of enterprises. To this end, this paper proposes the following hypothesis:

H1: Financial corporate social responsibility has a promoting effect on financial performance.

Based on stakeholder theory and signaling theory, there is a close connection between corporate reputation and multiple stakeholders. Corporate reputation is a comprehensive evaluation formed by stakeholders' impressions and emotional cognitions of a company, which reflects their recognition of the company. Existing studies have shown that companies can significantly enhance their corporate reputation by fulfilling their social responsibilities. At the same time, stakeholder pressure has a positive moderating effect on the positive relationship between corporate social responsibility and corporate reputation. In addition, companies convey corporate social responsibility information through social responsibility reports, thereby strengthening the positive relationship between corporate social responsibility and corporate reputation. To this end, this article proposes the following hypotheses:

H2: Financial corporate social responsibility has a promoting effect on corporate reputation.

Based on the signal transmission theory, enterprises usually have the initiative in certain aspects of the signal transmission process, such as they can choose the content and method of signal transmission, and this initiative ensures the stability and effectiveness of signal transmission. In this situation, in order to enable the outside world to have a comprehensive understanding of the operation of the enterprise, the enterprise can actively release information to the market, thereby reducing the risk of decision-making errors caused by information asymmetry. At the same time, in the process of signal transmission, the good reputation and image displayed by the enterprise will affect the public's assessment of the value of the enterprise, and then indirectly affect the performance level of the enterprise.

In addition, based on the stakeholder theory, from the perspective of different stakeholders. Consumers generally believe that a good corporate reputation can convey signals of the quality of the enterprise's service and products, prompting consumers to be willing to purchase its products and services, thereby promoting the enterprise to expand its production scale and achieve sustained growth. For creditors, companies with a good reputation can enhance their sense of financial security, thereby improving their financing capabilities and further improving performance. Employees also tend to choose to work for companies with a good reputation to realize their own value. At the same time, in order to reduce the risk of arrears and defaults of payments and reduce the contractual costs of both parties, suppliers are more willing to establish cooperative relationships with companies with good reputations. Therefore, a good corporate reputation can not only enhance the competitive advantage of the enterprise, but also enhance its overall value. To this end, this paper proposes the following hypothesis:

H3: Corporate reputation has a promoting effect on the financial performance of financial enterprises.

In summary, the fulfillment of corporate social responsibility needs to have a positive effect on corporate reputation. By building a good image and gaining a good reputation, it helps to improve corporate financial performance. Therefore, the following hypothesis is proposed:

H4: Corporate reputation plays a mediating role between corporate social responsibility and financial

performance.

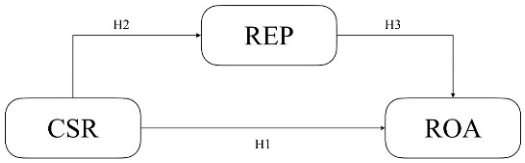

Figure 1 Variable relationship diagram

Figure 1 explains the hypothesized variable relationships and was used in subsequent data analysis.

4. Results and Discussion

4.1. Descriptive Statistics

The analysis results in Table 1 show that the range of ROA changes is large, from a very low -16.98% to as high as 55.90%, with a standard deviation of 3.202, indicating that there are significant differences in profitability among sample companies, with an average of 1.828%, showing the overall profit situation is relatively stable but there are fluctuations. CSR also shows a wide distribution, from the lowest -10.08 to the highest 86.7, with an average score of 35.20 and a standard deviation of 17.9, showing the imbalance in corporate social responsibility performance. REP is a dummy variable, defined by whether there is a violation, with an average value of 0.833, indicating that most companies have not been notified of violations during the observation period and enjoy a good reputation.

SIZE reflects the size of the company, and its large differences and standard deviations highlight the diversity of sample company sizes. As a control variable, SOE has a mean value of 0.634, indicating that state-owned enterprises account for the majority of the sample, and its standard deviation is 0.482, indicating that although the sample is dominated by state-owned enterprises in terms of property rights, there is still a considerable proportion of non-state-owned enterprises. The average level of LEV is relatively high at 78.2%, showing that financial companies generally have higher financial leverage, but its standard deviation (16.86) also shows that the debt burden varies among different companies. The average value of OC is 28.39%, indicating that the largest shareholder generally holds a higher proportion of shares in the sample companies, and the standard deviation is 15.72%, showing significant differences in ownership concentration. The average value of AGE is 28.61 years and the standard deviation is 5.914, which shows that most of the sample companies have a long operating history, but the establishment time span is also large. The mean BOD is 11.28 people and the standard deviation is 3.719, showing moderate variation in board size across companies.

Table 1. Descriptive Statistics

Variables	N	Min	Max	SD	Mean	Kurtosis	Skewness
ROA	568	-16.98	55.90	3.202	1.828	148.8	8.186
CSR	568	-10.08	86.70	17.90	35.20	3.670	1.027
REP	568	0	1	0.374	0.833	4.180	-1.783
SIZE	568	8.830	13.52	1.057	11.35	2.525	-0.0460
SOE	568	0	1	0.482	0.634	1.309	-0.555
LEV	568	10.41	94.92	16.86	78.20	5.732	-1.565
OC	568	4.310	89.40	15.72	28.39	3.949	1.091
AGE	568	16	41	5.914	28.61	2.609	-0.0190
BOD	568	0	21	3.719	11.28	3.751	-0.465

4.2. Correlation analysis

According to the analysis in Table 2, the correlation coefficient between ROA and CSR is 0.174, and CSR is significantly positively correlated with ROA, indicating that actively fulfilling social responsibilities can help improve corporate financial performance. However, the correlation between ROA and REP is slightly weaker, with a correlation coefficient of 0.137, indicating that CSR and REP are also significantly positively correlated, and that together they form an important part of a company's social image. ROA is negatively correlated with

SIZE, but positively correlated with most other variables, reflecting the advantages of large enterprises in many aspects. CSR shows significant correlation with multiple variables. In addition to the positive correlation with ROA, the correlation coefficients between CSR and REP, and CSR and SIZE are 0.157 and 0.242 respectively, which all indicate that the fulfillment of corporate social responsibility is positively related to the reputation and scale of the company. The correlation coefficient between CSR and LEV is 0.066. Although it is not statistically significant, it shows a positive correlation trend. The correlation coefficient between REP and SIZE is 0.245, which is significant at the 0.001 level, indicating that corporate reputation is significantly positively related to company size, that is, larger companies tend to have better reputations. The correlation coefficients between OC and AGE and OC and BOD are 0.136 and -0.129 respectively, both of which are significant at the 0.001 level. This shows that ownership concentration is positively related to corporate age and negatively related to director size, which may reflect the impact of ownership concentration on corporate governance structure. In general, various variables show multi-level and multi-dimensional correlations, which together form a complex network that affects corporate financial performance.

Table 2 Correlation analysis

Variables	ROA	CSR	REP	SIZE	SOE	LEV	OC	AGE	BOD
ROA	1.000								
CSR	0.174***	1.000							
	(0.000)								
REP	0.137***	0.157***	1.000						
	(0.001)	(0.000)							
SIZE	-0.181***	0.242***	0.245***	1.000					
	(0.000)	(0.000)	(0.000)						
SOE	0.005	0.143***	0.149***	0.228***	1.000				
	(0.913)	(0.001)	(0.000)	(0.000)					
LEV	-0.198***	0.066	0.178***	0.768***	0.074	1.000			
	(0.000)	(0.114)	(0.000)	(0.000)	(0.080)				
OC	0.043	0.063	0.128***	0.159***	0.277***	-0.013	1.000		
	(0.309)	(0.131)	(0.002)	(0.000)	(0.000)	(0.757)			
AGE	0.058	0.260***	0.119***	0.323***	0.093***	0.001	0.136***	1.000	
	(0.167)	(0.000)	(0.004)	(0.000)	(0.027)	(0.986)	(0.001)		
BOD	-0.118***	0.243***	0.140***	0.609***	0.064	0.493***	-0.129***	0.223***	1.000
	(0.005)	(0.000)	(0.001)	(0.000)	(0.128)	(0.000)	(0.002)	(0.000)	

t statistics in parentheses
$^{*}p<0.05$,$^{**}p<0.01$,$^{***}p<0.001$

Variance inflation factor (VIF), used to evaluate whether there is a high degree of correlation between independent variables. The VIF value measures the degree of linear relationship between an independent variable and other independent variables. Ideally, the VIF value should be close to 1, indicating that there is no significant collinearity between the independent variables. However, in practical applications, the VIF value is usually set to 10 as the judgment standard, that is, when the VIF value is greater than 10, it is considered that there is strong collinearity between the independent variables. From the multicollinearity test in Table 3, we can see that there is no multicollinearity among all variables.

Table 3 Multicollinearity test

Variables	VIF	1/VIF
SIZE	4.34	0.230290

Table 3 Multicollinearity test (Continued)

Variables	VIF	1/VIF
LEV	3.14	0.318421
BOD	1.77	0.564182
AGE	1.37	0.727979
OC	1.22	0.817700
SOE	1.15	0.867529
CSR	1.15	0.869330
Mean VIF	2.02	

4.3. Regression analysis

Main regression analysis: In Table 4, in model (1) and model (2), the coefficients of CSR are 0.031 and 0.037 respectively, and are significant at the 0.001 level in both models. This shows that the fulfillment of financial corporate social responsibilities is closely related to the corporate Financial performance has a significant positive impact, and hypothesis H1 is verified. Specifically, for every unit increase in CSR, ROA increases by an average of 0.031 units in model (1) and by an average of 0.037 units in model (2). It shows that when financial companies fulfill their corporate social responsibilities, they can directly promote the improvement of their financial performance.

In model (2), after adding control variables, the coefficient of SIZE is -0.958 and is significant at the 0.01 level, indicating that the increase in company size is related to the decline in financial performance, reflecting the difficulty of large-scale enterprises in managing complexity and resources. Challenges in configuration and operational efficiency prompt financial companies to focus on optimizing management structures during expansion to ensure that scale growth does not lead to performance decline. However, the coefficient of property rights (SOE) is 0.067, which is not statistically significant, indicating that the impact of property rights on financial performance is not significant. The coefficient of capital structure (LEV) is -0.002, which is also not significant, indicating that the impact of capital structure on ROA is not significant. The coefficient of ownership concentration (OC) is 0.010, which is positive but not significant. The coefficients of firm age (AGE) and director size (BOD) are 0.043 and -0.024 respectively, but neither is significant.

The sample size (N) of both models is 568. The constant terms of the model are 0.733 and 7.725 respectively in the two models, and the constant term of model (2) is significant at the 0.001 level, while the constant term of model (1) The terms are significant at the 0.05 level. The R2 of model (1) is 0.030, and the R2 of model (2) is 0.094, indicating that model (2) has stronger explanatory power.

Table 4 Main regression analysis

Variables	(1) ROA	(2) ROA
CSR	0.031***	0.037***
	(0.000)	(0.000)
SIZE		-0.958**
		(0.001)
SOE		0.067
		(0.833)
LEV		-0.002
		(0.872)
OC		0.010
		(0.259)
AGE		0.043
		(0.093)
BOD		-0.024
		(0.606)
_cons	0.733*	7.725***

Table 4 Main regression analysis (Continued)

Variables	(1) ROA	(2) ROA
	(0.012)	(0.000)
R^2	0.030	0.094
N	568	568

t statistics in parentheses
*$p<0.05$,**$p<0.01$,***$p<0.001$

Robustness check: This article replaces the explanatory variable ROA with ROE for robustness testing (ROE = net profit/net assets). From the results of model (1) in Table 5, we can see that the coefficient of CSR is 0.147 and is significant at the 0.001 level, indicating that The performance of CSR is positively related to a company's ROE. This means that, controlling for other variables, for every unit increase in corporate social responsibility, ROE increases by an average of 0.147 units.

The results in Table 5 show that the fulfillment of corporate social responsibility has a positive impact on a company's ROE, while SIZE has a significant impact on ROE, but in different directions. These results are compared with the results of the analysis when ROA is used as the explained variable, providing additional evidence to support the robustness of the relationship between CSR and corporate financial performance. Due to the impact of the epidemic in China in 2020, corporate financial data may experience abnormal fluctuations. In order to eliminate this impact, the data for 2020 will be selected to be excluded from the robustness test. After excluding the 2020 sample, in the robustness test model (2) in Table 5, the coefficient of CSR is 0.038 and is significant at the 0.001 level, indicating that after excluding the special years affected by the epidemic, CSR is positively related to the ROA of the enterprise. Related. Taking into account the possible impact of the external shock of the epidemic on corporate financial conditions, we further verified the robustness of the relationship between financial corporate social responsibility and financial performance.

Table 5. Robustness check

Variables	(1) ROE	(2) ROA
CSR	0.149***	0.038***
	(0.000)	(0.000)
SIZE	3.552***	-0.958**
	(0.000)	(0.001)
SOE	0.400	0.067
	(0.660)	(0.833)
LEV	-0.008	0.010
	(0.846)	(0.511)
OC	-0.049	0.011
	(0.089)	(0.293)
AGE	-0.092	0.053
	(0.258)	(0.063)
BOD	-0.132	-0.022
	(0.366)	(0.658)
_cons	-29.579***	9.041***
	(0.000)	(0.000)
R^2	0.183	0.091
N	568	568

t statistics in parentheses
*$p<0.05$,**$p<0.01$,***$p<0.001$

Endogeneity test: Because there may be endogeneity problems between corporate social responsibility and financial performance, it affects the empirical results. In order to effectively solve these problems between the explanatory variables and the explained variables, this article follows the practice of Ye, Li, and Li (2019) and lags the explanatory variables in the multiple regression model by one period. Taking the ROA of the current period as the explained variable, the explanatory variable lagged one period (L.CSR) is regressed again, and the results are shown in Table 6. It can be seen that the coefficient of ROA and L.CSR is 0.019, which is significant at the 0.001 level. The regression results are basically consistent with the above empirical conclusions, indicating that the positive relationship between financial corporate social responsibility and financial performance is still established, and the research results are robust.

Table 6. Explanatory variables lagged one period

Variables	(1) ROA
L.CSR	0.019***
	(0.001)
CSR	
SIZE	0.252
	(0.195)
SOE	0.176
	(0.409)
LEV	-0.053***
	(0.000)
OC	0.000
	(0.998)
AGE	0.009
	(0.654)
BOD	-0.024
	(0.561)

Variables	(1) ROA
_cons	2.187
	(0.094)
R2	0.123
N	497

t statistics in parentheses
$^{*}p<0.05,^{**}p<0.01,^{***}p<0.001$

In order to effectively solve the problem of mutual causation between the explanatory variables and the explained variables, this paper draws on the ideas of Dou, He, and Fang (2019) and uses the mean value (IV) of corporate social responsibility in the same year as an instrumental variable. It can be seen from Table 7 that in the first-stage regression, the instrumental variable's corporate social responsibility mean (IV) in the same period is significantly positively correlated with CSR at the 0.001 level, and the Cragg-Donald Wald F value is greater than 10, passing the weak instrumental variable test, it is possible to use the mean (IV) of the total CSR score in the same period as an instrumental variable. The second-stage regression results show that there is a significant positive correlation between CSR and ROA at the 0.001 level, indicating that the relationship between financial corporate social responsibility and corporate financial performance is still established and the research results are robust.

Table 7 Instrumental variable method

Variables	(1) CSR	(2) ROA
IV	0.489^{***}	
	(0.000)	
CSR		0.237^{***}
		(0.000)
SIZE	2.053	-1.496^{***}
	(0.151)	(0.001)
SOE	1.654	-0.520
	(0.295)	(0.262)
LEV	-0.130	0.039
	(0.084)	(0.107)
OC	0.057	0.009
	(0.260)	(0.490)
AGE	0.520^{***}	-0.043
	(0.000)	(0.365)
BOD	0.794^{**}	-0.181^{*}
	(0.001)	(0.034)
_cons	-21.282^{*}	10.784^{***}
	(0.023)	(0.000)
R^2	0.156	0.159
N	568	568
Cragg-Donald Wald F statistic	27.99	27.99

t statistics in parentheses
$^{*}p<0.05,^{**}p<0.01,^{***}p<0.001$

Heterogeneity analysis: Since there are significant differences in the economic development levels of different regions, this difference will affect the effect of policy implementation and market trends. Therefore, this article will use the method of ranking the median of regional GDP to classify low-level economies according to regional economic levels. Regions and areas with high economic levels are analyzed.

As shown in Table 8, in low-level economic areas, the coefficient of CSR is 0.012, but it is not significant. In areas with low economic levels, financial companies may face limitations in funds and resources, making it difficult to implement meaningful corporate social responsibility activities. Moreover, financial corporate social

responsibility activities may lack systematicness and in-depthness, resulting in their inability to effectively convey positive signals to consumers. and investors may be skeptical of CSR performance. In areas with high economic levels, the coefficient of CSR is 0.046 and is significant at the 0.001 level, indicating that CSR has a positive impact on ROA in areas with high economic levels. Areas with high economic levels usually have more complete laws, regulations and policy support, and companies have higher management levels and capital acquisition capabilities. Moreover, consumers and investors in areas with high economic levels generally pay more attention to corporate social responsibility performance and are willing to pay a premium for it. Financial companies' investment in corporate social responsibility can more effectively send out positive signals, thereby improving financial performance.

Table 8 By regional economic level

	Low level areas	**High level areas**
Variables	**ROA**	**ROA**
CSR	0.012	0.046***
	(0.247)	(0.000)
SIZE	-1.250***	-1.479***
	(0.000)	(0.001)
SOE	-0.527	0.145
	(0.292)	(0.732)
LEV	0.022	0.041
	(0.291)	(0.053)
OC	0.034**	0.012
	(0.002)	(0.561)
AGE	0.054	0.120*

Table 8 By regional economic level (Continued)

	Low level areas	**High level areas**
Variables	**ROA**	**ROA**
	(0.053)	(0.020)
BOD	-0.073	-0.024
	(0.268)	(0.718)
constant	13.123***	10.169***
	(0.000)	(0.001)
N	200	368
R^2	0.221	0.091

t statistics in parentheses

*$p<0.05$,**$p<0.01$,***$p<0.001$

Based on the research of Dickinson (2011), the combined cash flow model is used, which represents the interaction between the enterprise's use of resources, access to funds, operating capabilities, external macro-environment and corporate strategy, and the combined information of the entire cash flow is used to divide the enterprise life cycle. . The growth stage of the enterprise life cycle is divided into three stages: growth stage, maturity stage and decline stage.

As shown in Table 9, the coefficient of CSR in the growth stage is 0.118 and is significant at the 0.001 level. In the mature stage, the CSR coefficient is 0.030 and is significant at the 0.01 level. In the growth and maturity stages, CSR has a significant positive impact on ROA, indicating that companies can improve their profitability when implementing social responsibility in these two stages. In the recession period, the CSR coefficient is 0.005 and is not significant, indicating that during this period, companies may be more concerned about short-term survival than social responsibility.

Based on resource dependence theory, in the growth stage, companies need to expand market share and acquire more resources, which prompts them to focus on corporate social responsibility and company size to enhance market attractiveness and resource acquisition capabilities. However, during maturity, increased scale may lead to management complexity and inefficient resource allocation, which in turn affects financial

performance. During a recession, companies may face resource shortages, and excessive leverage increases financial risks and affects profitability.

Table 9 Divided by enterprise life cycle

Variables	Growth ROA	Maturity ROA	Decline ROA
CSR	0.118***	0.030**	0.005
	(0.000)	(0.003)	(0.424)
SIZE	1.837*	-1.614***	0.343
	(0.037)	(0.000)	(0.202)
SOE	-0.410	0.138	-0.527*
	(0.690)	(0.711)	(0.028)
LEV	-0.029	0.038*	-0.100***
	(0.455)	(0.030)	(0.000)
OC	0.041	0.017	0.016
	(0.413)	(0.132)	(0.051)
AGE	-0.005	0.083**	-0.021
	(0.973)	(0.008)	(0.435)
BOD	-0.157	0.029	-0.022
	(0.178)	(0.671)	(0.551)
_cons	-18.620*	13.045***	6.306***
	(0.027)	(0.000)	(0.000)
R^2	0.376	0.111	0.622
N	56	396	116

t statistics in parentheses
*$p<0.05$,**$p<0.01$,***$p<0.001$

Mediation effect test: In model (1) of Table 10, CSR as an explanatory variable has a significant direct impact on ROA, with a coefficient of 0.038, which is significant at the 0.001 level. This shows that the fulfillment of corporate social responsibility is positively related to a company's financial performance.

In model (2), the impact of CSR on REP is also significant, with a coefficient of 0.002 and a t value of 0.010, which is significant at the 0.05 level. This shows that the performance of CSR can significantly enhance a company's reputation, and hypothesis H2 is verified. This means that companies can enhance their corporate reputation through active social responsibility practices.

In model (3), the impact of CSR and REP on ROA is considered simultaneously. Although the coefficient of CSR has declined, it is still significant, with a coefficient of 0.035. The coefficient of REP as a mediating variable is 1.368, which is also significant. This shows that after controlling for the impact of CSR, REP has a significant positive impact on ROA, and hypothesis H3 is verified.

When CSR, REP and ROA are included simultaneously, the positive impact of REP on ROA becomes particularly significant, while the impact of CSR on ROA is still significant but weakened. This result shows that REP plays a partial mediating role between CSR and ROA, and hypothesis H4 is verified.

According to the results of the mediation effect analysis in Table 10, CSR not only has a direct positive impact on ROA, but may also indirectly impact ROA by increasing REP. This finding supports the positive impact of CSR on corporate reputation and financial performance, and highlights the potential mediating role of corporate reputation in the relationship between CSR and financial performance.

Table 10. Mediation effect test

Variables	(1) ROA	(2) REP	(3) ROA
CSR	0.038***	0.002*	0.035***
	(0.000)	(0.010)	(0.000)
SIZE	-0.738**	0.047	-0.802**
	(0.004)	(0.112)	(0.001)
SOE	0.072	0.070*	-0.023
	(0.802)	(0.039)	(0.935)
LEV	-0.002	0.002	-0.004
	(0.872)	(0.314)	(0.744)
OC	0.010	0.002	0.008
	(0.259)	(0.106)	(0.380)
AGE	0.043	0.002	0.040
	(0.093)	(0.450)	(0.115)
BOD	-0.024	0.000	-0.024
	(0.606)	(0.995)	(0.601)
REP			1.368***
			(0.000)
_cons	7.725***	-0.070	7.822***
	(0.000)	(0.726)	(0.000)
R2	0.094	0.096	0.117
N	568	568	568

t statistics in parentheses
*$p<0.05$,**$p<0.01$,***$p<0.001$

The Sobel-Goodman test of the statistical mediation of the regression model shows that the p-value of the indirect effect is less than 0.05, and the p-value of the direct effect is less than 0.05. Therefore, Table 11 shows that corporate reputation has a partial mediating effect on corporate social responsibility and financial performance.

Table 11. Sobel-Goodman test

project	Est	Std err	Z	P>|Z|
A coefficient	0.002	0.001	2.571	0.010
B coefficient	1.368	0.357	3.834	0.000
Indirect effect	0.003	0.001	2.136	0.033
Direct effect	0.035	0.008	4.599	0.000
Total effect	0.038	0.008	4.982	0.000

5. Conclusion

On the basis of collecting and reviewing literature on corporate social responsibility and financial performance, this article puts forward corresponding research hypotheses based on relevant theories, selects the panel data of China's listed financial companies from 2013 to 2020 as the research sample, uses a multiple linear regression model, and empirically tests The impact of corporate social responsibility on financial performance and further explores the mediating role of corporate reputation between the two.

The specific conclusions are as follows: The fulfillment of corporate social responsibilities can significantly improve a company's profitability, and there is a positive correlation between the two. This conclusion remains robust after adding control variables such as company size, nature of property rights, capital structure, ownership concentration, company age, board size and other factors. Corporate social responsibility indirectly affects financial performance by enhancing corporate reputation. Mediation effect analysis shows that the fulfillment of corporate social responsibility not only directly promotes the improvement of financial performance, but also indirectly affects financial performance by improving corporate reputation. The Sobel-Goodman test further confirmed the mediating role of corporate reputation in the relationship between the two.

Corporate governance and financial characteristics have varying effects on financial performance. Regression analysis shows that SIZE is negatively related to ROA, but positively related to ROE; OC is positively related to ROA, but negatively related to ROE. This indicates that different corporate governance and financial characteristics may have different impact directions and degrees on corporate performance.

Therefore, companies should integrate social responsibility into strategic planning and daily operations, and enhance corporate image, market competitiveness and financial performance through environmental protection, social welfare, employee care and other measures. Financial companies need to optimize their social responsibility strategies based on regional characteristics and development stages, and at the same time pay attention to reputation management, establish a responsible image with transparent and honest business behaviors, and promote trust and opportunity growth. Optimizing the corporate governance structure, strengthening the board of directors, and rationally controlling scale and ownership concentration are the keys to achieving a win-win situation for finance and social responsibility. The government should guide companies to fulfill their social responsibilities and enhance transparency and competitiveness through policy incentives and information disclosure systems. In addition, when responding to external shocks, companies need to establish resilience management capabilities and long-term strategies to improve risk resistance and sustainable development capabilities.

Although most studies believe that corporate social responsibility can help companies enhance their competitiveness and improve their financial performance, most of the research excludes the financial industry and lacks attention to corporate social responsibility and financial performance in the financial industry, which provides some space for this article's research. However, this study is mainly based on the data of China's listed financial companies, and the sample scope is relatively limited. Future research can expand the sample scope to cover other industries and regions to enhance the generalizability of the research conclusions. In addition, the indicators and models selected in the study also need to be further optimized. Future research can use more diversified indicator systems and research methods to deeply explore the interaction mechanism between corporate social responsibility, corporate reputation and financial performance, and provide guidance for corporate management practice. Provide richer theoretical guidance and empirical basis for policy formulation. While pursuing economic interests, enterprises should actively fulfill their social responsibilities, optimize corporate governance structures, strengthen corporate reputation management, and strive to achieve a win-win situation between economic and social benefits.

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