

The impact of social responsibility on financial performance of listed companies in the food manufacturing industry - the mediating role of debt financing costs

Xin Zhang

School of Economics and Management, Nanjing University of Science and Technology, Nanjing, China

1512214494@qq.com

Abstract. Whether food manufacturing enterprises can fulfill their social responsibilities to ensure the cleanliness and hygiene of food is very important for people's health. However, the fulfillment of social responsibility can tie up the resources of a business. Enterprise resources are inseparable from the development of enterprises. At the same time, due to the information asymmetry in the market, there are information barriers between some creditors and enterprises. As a result, companies may incur higher debt financing costs in order to obtain funds from creditors. The fulfillment of corporate social responsibility can often convey information to creditors and break down information barriers. In summary, it is of certain significance whether the fulfillment of corporate social responsibility can affect financial performance and debt financing costs. This paper takes listed companies in the food manufacturing industry from 2017 to 2021 as the research object, and analyzes the relationship between social responsibility, financial performance, and debt financing cost, so as to provide a certain reference for enterprises to fulfill their social responsibilities.

Keywords: social responsibility; financial performance; debt financing costs.

1. Introduction

The guidelines on social responsibility were issued by the Shenzhen Stock Exchange in 2006. In the same year, social responsibility was introduced to listed companies by the Shenzhen Stock Exchange. In the following years, China successively issued documents related to social responsibility, and corporate social responsibility has gradually gained attention. However, as seen from the incidents of tainted milk powder, fake vaccines in Changchun, and the recent Haitian soy sauce incident, while the economy is developing rapidly, the fulfillment of social responsibility is not in place, and some companies do not attach importance to and actively fulfill their corporate responsibilities. It is normal for companies to pursue high profits. However, some companies believe that fulfilling social responsibility may lead to a reduction in corporate resources, which may affect the financial performance of the company. The consequences of fraud resulting from the lack of social responsibility will directly affect the physical and mental health of consumers. Therefore, how the relationship between social responsibility and financial performance affects a company's decision to actively fulfill social responsibility has a certain impact. At the same time, companies often encounter financing problems in their business activities. The cost of debt financing directly affects the company. With the development of the market, a more perfect financing environment is constantly emerging, and the threshold for corporate financing is also getting higher and higher. Fulfilling social responsibility can also lead to the loss of corporate funds. In summary, studying the impact of corporate social responsibility on financial performance and debt financing costs, and whether it can affect financial performance by influencing debt financing costs, can affect the confidence and enthusiasm of companies to fulfill social responsibility.

2. Literature review

In the 1950s, Bowen (1953) published "The Social Responsibility of Businessmen". In his work, Bowen proposed a definition of the social responsibility of businessmen and specifically discussed issues related to social responsibility. In the 1960s, there was an increasing discussion on the definition of social responsibility [1]. Many scholars (Keith Davis, William C. Frederick, Joseph W. McGuire, etc.) have begun to explore social responsibility and put forward their own views. Davis was one of the earliest famous writers to define corporate social responsibility during this period. Davis believes that the decisions and actions of businessmen are at least partially beyond the direct economic or technological interests of the enterprise. Afterwards, Davis (1967) re-examined his definition of social responsibility and supplemented it. In the 1970s, there was a significant increase in the definition of social responsibility. Scholars such as Harold Johnson, George Steiner, Henry Eilbert, and I. Robert Parke have expressed their own opinions. The concentric circle theory and Carroll's pyramid model, which are now known to people, were proposed during this period. In 1971, CED defined three concentric circles of social responsibility. In 1979, Carroll proposed that corporate social responsibility includes four parts: society's expectations of the organization's economy, law, ethics, and discretion at specific points in time. Afterwards, Carroll re-examined his previous definition of social responsibility and proposed a pyramid model of corporate social responsibility, with economic categories as the base and legal, ethical, and philanthropic categories as the top. In the late 1970s and 1980s, Davis' view in the 1960s that socially responsible decisions could bring economic benefits was widely accepted, and more and more scholars were concerned about whether there was a relationship between corporate social responsibility and financial performance. Cochran (1984) found that there is indeed a correlation between social responsibility and financial performance. According to Griffin et al. (1997) [3], Bromiley and Marcus (1989), Davidson, Chandy, and Cross (1987), Davidson and Worrell (1988) When it is discovered that there is a negative correlation between the two; Rockness, Schlachter, and Rockness (1986), Cowen, Ferreri, and Parker (1987), Spencer and Taylor (1987), Wokutch and Spencer (1987) When it is discovered that there is a positive correlation between social responsibility and financial performance. However, some scholars have found that there is no correlation between the two. Aupperle et al. (1985) did not find any relationship between social responsibility and profitability. Since then, scholars have been studying the relationship between the two. But until now, there has been no consistent conclusion on the relationship between social responsibility and financial performance. Preston et al. (1997) and Tsoutsoura et al. (2004) found that there is a positive correlation between social performance and financial performance. Aras, In 2010, no significant relationship was found between corporate social responsibility and financial performance (profitability). Moosa et al. (2021) found a significant relationship between social responsibility ranking and financial performance [8]. However, in the dimension of corporate social responsibility, only community and governance have a significant positive correlation with financial indicators, while the dimensions of employees and environment have no significance with financial performance. Kludacz Alssandri et al. (2021) found that companies implementing corporate social responsibility strategies have significantly higher asset return rates and pre-tax returns [9]. Consistent with foreign scholars, there is no consensus among domestic scholars on the relationship between the two. Luo Jiaqi (2019) found that fulfilling social responsibility can bring higher financial performance to enterprises [10]. However, Li Qian (2022) found that fair social responsibility (structural consistency) has a negative impact on financial performance [11]. Zheng Pei (2020) found that the two are not simply linearly related, but rather exhibit an inverted U-shaped relationship [12].

There has been no consistent conclusion on the relationship between social responsibility and financial performance. Individuals, managers, and institutions feel anxious about the corporate social responsibility aspect of their investments, and they want to know if social responsibility can increase returns and affect the company's financing decisions. The study by Sharfman and Fernando (2008) is considered one of the earliest studies on the impact of environmental practices on capital costs [13] [14]. However, the hypothesis of a negative correlation between environmental risk management and

debt capital costs has not been validated in the study. Afterwards, Bauer and Hann (2010), like Sharfman (2008), focused their analysis on environmental practices and studied their relationship with debt costs. Afterwards, El Ghoul et al. (2011) expanded their research framework to investigate the relationship between corporate social responsibility participation and its cost of equity capital. Ye (2011) and Goss and Roberts (2011) respectively studied the relationship between corporate social responsibility and debt costs from two different perspectives. The former found that there is an optimal level of social responsibility, below which the improvement of social responsibility will reduce debt financing costs, while exceeding this level will actually increase debt costs. The latter found that banks only care about borrowers' debt repayment ability, and corporate social responsibility is likely to be seen as a second-order determinant of interest rate differentials. Shiu et al. (2017) found that long-term fulfillment of social responsibility can play a role in eliminating the negative impact of a company's first negative event on bond prices [15]. Wang Yiran (2017) also found a U-shaped relationship between debt financing costs and social responsibility [17]. However, Xie Hua and Zhu Liping (2018), Wang Baohui (2019), and others found a significant negative correlation between the two [18] [19]. Liao Liankai et al. (2021) found that corporate charitable donations can help reduce the costs incurred by companies in the debt financing process [20]. It is not difficult to see that both foreign and domestic scholars have reached a unified conclusion on the relationship between the two

3. Theoretical analysis and hypothesis formulation

3.1. Social Responsibility and Financial Performance

According to stakeholder theory, without the participation of stakeholders, no enterprise can thrive. The establishment and development of enterprises require the use of resources from stakeholders to a certain extent. For example, the development of a company cannot be separated from the funds of shareholders and creditors, nor can it be separated from the consumption of customers. Therefore, enterprises should pursue overall interests. Corporate social responsibility means being accountable to all stakeholders. Firstly, according to the theory of information asymmetry, the amount of information held by stakeholders and enterprises is different. Therefore, stakeholders will judge whether a company will be responsible for itself based on its economic behavior. According to the theory of signal transmission, the long-term fulfillment of social responsibility by enterprises can serve as a signal to stakeholders to alleviate the degree of information asymmetry, while also indicating that the enterprise itself may have low moral hazard. Therefore, stakeholders may be more likely to invest their resources to enhance the development capability of the enterprise. Secondly, fulfilling social responsibility can establish a positive image in the minds of stakeholders and accumulate reputation capital. Having a good reputation for a company helps to increase consumers' trust in it, reduce their sensitivity to prices, create consumer stickiness, and increase their willingness to pay a premium for their products. At the same time, it also helps attract potential investors and consumers. Therefore, based on the above analysis, this article proposes the following hypothesis:

H 1: The level of social responsibility is directly proportional to the current financial performance.

3.2. Social Responsibility and Debt Financing Costs

The instrumental social responsibility perspective holds that by adopting social responsibility, companies can meet the interests of all stakeholders, thereby strengthening the friendly relationship between the company and stakeholders. Scholars such as Yang Yulong and Wang Manqian have found that during periods of loose credit, the relationship between banks and enterprises can indeed bring financing convenience to enterprises [21]. On the one hand, in China's economic system, the main debt financing channel for enterprises is to borrow from banks, which are the largest lenders for enterprises. Under the influence of international and domestic financial risks, economic uncertainty, and changes in economic policies, banks will face higher risks, thereby increasing their risk assessments of enterprises and making their credit evaluations more stringent. As a result, tighter

credit policies will greatly increase the debt financing costs of enterprises. On the other hand, due to the mismatch between the amount of information obtained by enterprises and ordinary creditors, there is a problem of information asymmetry, which further increases borrowing costs and leads to an increase in debt financing costs for enterprises. In the face of information asymmetry, signal transmission is a more effective solution. By fulfilling social responsibility and sending positive signals to creditors, enterprises can to some extent solve the problem of information asymmetry and effectively reduce the cost of external financing. At the same time, sending positive signals to creditors is also beneficial for companies to establish a positive image, which is in line with the traditional concept of "wealth brings prosperity to the world", thereby enhancing creditors' confidence in the company, helping creditors to objectively evaluate the company, and effectively avoiding the problem of adverse selection. Zhao Liangyu (2017), Shi Min (2017) found that companies that actively undertake social responsibility have lower debt financing costs [22][23]. Therefore, based on the above analysis, this article proposes the following hypothesis:

H 2: The level of social responsibility is inversely proportional to the current cost of debt financing.

3.3. Social Responsibility, Financial Performance, and Debt Financing Costs

According to the theory of signal transmission, fulfilling social responsibility towards stakeholders not only improves their information transparency, but also sends a signal to stakeholders that the company is an altruistic entity. At the same time, stakeholders will gain a better understanding of the company through this signal, reducing their uncertainty about whether the company will lend or invest. Therefore, enterprises can to some extent reduce the cost of debt financing, and a portion of the cost of debt financing that is expensed is related to net profit, which to some extent affects the financial performance of the enterprise. At the same time, fulfilling social responsibility will also accumulate a certain corporate reputation and increase consumer recognition of the brand. Su Wujun, Yan Qing (2020), and Chen Yaqing (2022) found through research that fulfilling social responsibility can reduce debt financing costs and improve financial performance [24][25]. Therefore, based on the above analysis, this article proposes the following hypothesis:

H 3: Debt financing costs play a mediating role in the impact of social responsibility on financial performance

4. Research Design

4.1. Data and Samples

This article takes listed companies in the food manufacturing industry from 2017 to 2021 as samples and performs the following processing: (1) excluding companies with missing values, (2) excluding companies with st st *, and (3) excluding companies listed on January 1, 2017. The original sample of 193 companies was obtained, resulting in 128 companies and 640 observations, forming a balanced panel data.

This article is based on the 2012 classification of the China Securities Regulatory Commission in the Guotai An database, combined with the "Announcement of the State Administration for Market Regulation on Revising and Publishing the Classification Catalogue of Food Production Licenses" issued by the State Administration for Market Regulation in 2020, selecting food related industries in the manufacturing industry, including agricultural and sideline food processing industry, food manufacturing industry, liquor, beverage and refined tea manufacturing industry. And select financial indicators and data from the Guotai An database, and obtain missing data through the company's annual report. This article's ROA, ROE, debt financing costs, social responsibility, and company size are all derived from financial data. Manually organize and collect data through EXCEL, and conduct empirical testing on STATA14. In addition, in order to avoid extreme values that are highly likely to affect the research results, all continuous variables were truncated by 1% and 99% in data processing.

4.2. Variable definition

4.2.1. Dependent variable

Financial Performance Assessment (ROA). Currently, financial performance is measured through accounting indicators or market indicators. The market indicators mainly use Tobin's q value. However, compared to foreign countries, China's stock market is still not very mature. Therefore, using market indicators is not relatively objective. Accounting indicators are mainly obtained through the calculation of data in financial statements, which have a certain degree of objectivity. This article uses accounting indicators ROA and ROE as indicators to measure financial performance. Among them, ROE serves as a robustness test.

4.2.2. Independent variable

Social Responsibility (CSR). Refer to Yang Wansu (2016) [26] and Wei Liling (2016) [27] to classify stakeholders. This article refers to the indicator systems of scholars Wei Liling and Lu Yang (2016), Yang Wansu and Yang Shanlin (2016), Wang Huazhong (2019) [28], Qi Dianwei (2020) [29], and Qin Mu (2021) [30] to establish a social responsibility indicator system; Refer to Wang Huazhong's (2019) method of using factor analysis to calculate comprehensive indicators and measure social responsibility to obtain the overall score of social responsibility.

Table 1 Social responsibility indicators

target value	Stakeholder classification	Social responsibility indicators for various stakeholders
social responsibility	creditor	debt-to-asset ratio
	shareholder	Earnings Per Share
	consumer	Revenue growth rate
	supplier	Accounts payable turnover ratio
	employee	Employee profitability level
	government	Tax contribution rate

4.2.3. Mediating variables

Cost of Debt Financing (CODF). The cost of debt financing is the cost incurred by a company in borrowing other funds. The cost of debt financing not only includes debt interest, but also incurs agency costs related to the debt during the financing process. Using the net financial expense method to measure the cost of debt financing

Cost of Debt Financing (CODF)=(interest expenses+handling fees+other financial expenses)/total liabilities at the end of the period

4.2.4. Control variables

Year. The business environment in which enterprises operate is constantly changing. Therefore, the financial performance of enterprises varies from year to year, and the level of fulfilling social responsibility also varies from year to year. So, this article controls for the year as a dummy variable, represented by Year. Enterprise size. Generally speaking, the larger the scale of a company, the more and better the resources it has at its disposal, and the better its operating conditions. Therefore, they can better share operational risks and improve operational efficiency. Therefore, large enterprises are more capable of fulfilling their social responsibilities than small enterprises. Represented by Size, the calculation formula is as follows:

$$\text{Size}=\ln(\text{asset})$$

4.3. Model design

In order to verify hypotheses one, two, and three, this paper constructed models 1, 2, and 3, as shown in Table 2

Table 2 Model design

Hypothesis	Model	
H1	$ROA = \alpha + \beta_1 CSR + \beta_2 Size + \sum Year + \varepsilon$	Model 1
H2	$CODF = \alpha + \beta_1 CSR + \beta_2 Size + \sum Year + \varepsilon$	Model 2
H3	$ROA = \alpha + \beta_1 CSR + \beta_2 CODF + \beta_3 Size + \sum Year + \varepsilon$	Model 3

Among them, ROA represents financial performance, CSR represents social responsibility level, and CODF represents debt financing cost. If the CSR coefficient in Model 1 is positive, i.e. β_1 is positive, it indicates a positive correlation between the two and verifies Hypothesis 1; If the CSR coefficient of Model 2 is negative, i.e. β_1 is negative, it indicates a negative correlation between the two and verifies Hypothesis 2; Model 3 adds the variable CODF on the basis of Model1. If the CSR coefficient of Model 1 is positive, Model 2 is negative, and the CSR and CODF coefficients in Model 3 are significant, then hypothesis three is validated

5. Empirical analysis

5.1. Descriptive statistical analysis

Table 3 presents the results of descriptive statistics for each variable. According to the table, the maximum score for Social Responsibility (CSR) is 1.530, and the minimum score is -1.280, indicating a significant difference in scores. The average score for social responsibility is -0.0230, indicating that most companies have not fulfilled their social responsibilities seriously and perfectly, and only a few companies are fulfilling their social responsibilities seriously. From this, it can be inferred that some companies are not concerned about the negative consequences of a lack of social responsibility. The median value of the explanatory variable social responsibility (CSR) is -0.06, which is lower than the mean value of -0.0230, indicating that the level of social responsibility in the food manufacturing industry is in a negative skewed distribution, and the social responsibility performance of most enterprises is above the overall industry average level. At the same time, its standard deviation is 0.582, indicating that the level of social responsibility fulfillment of enterprises in this industry varies greatly and is not very stable.

Table 3 Descriptive statistics for each variable

variable	N	mean	p50	sd	min	max
ROA	640	0.077	0.069	0.076	-0.127	0.314
CODF	640	0.015	0.013	0.013	-0.001	0.053
CSR	640	-0.023	-0.06	0.582	-1.28	1.53
SIZE	640	22.09	22.07	1.323	18.94	25.61

The maximum value of the dependent variable financial performance (ROA) is 0.314, and the minimum value is -0.127. The significant difference between the two values indicates that different companies have different levels of profitability, and some companies have unsatisfactory operations, resulting in direct losses. The mean financial performance (ROA) of these companies is 0.0770, with a median of 0.0690 and a standard deviation of 0.0760. Overall, their ROA is at a normal level, but their overall profitability level is not high. The maximum value of the dependent variable debt financing cost (CODF) is 0.0530 and the minimum value is -0.001, indicating that the debt financing cost of enterprises in China's food manufacturing industry varies among different companies. The average cost of debt financing is 0.0150, which is greater than the median of 0.0130, indicating that the debt financing cost of the food manufacturing industry generally shows a positive skewed distribution, indicating that the debt financing cost of most enterprises is lower than 0.0150. The standard deviation of debt financing cost is 0.0130, far less than 1, indicating that the overall debt

financing cost of the enterprise is in a stable state. The maximum value of the control variable enterprise size (SIZE) is 25.61, and the minimum value is 18.94, indicating a significant difference between the two. In addition, the standard deviation is 1.323, which is much larger than 1. This suggests that the overall size of enterprises in the food manufacturing industry varies greatly, with varying scales. The median enterprise size (SIZE) of 22.07 is close to the mean of 22.09, indicating that the enterprise size in the food manufacturing industry is approximately in a normal skewed distribution, with nearly half of the enterprises having an average enterprise size in the entire industry.

5.2. Correlation analysis

Table 4 shows the correlation analysis results of each variable. From the correlation coefficient test, it can be seen that there is a positive relationship between the dependent variable financial performance (ROA) and the explanatory variable social responsibility (CSR), with a correlation coefficient of 0.389 and a significant effect of three stars. A significant effect of three stars indicates a very significant relationship between the two, significant at the 1% level, and the relationship between the two is unlikely to be erroneous. Provide preliminary evidence for the proposed positive correlation between social responsibility and financial performance.

Table 4 Correlation analysis of the variables

	Year	ROA	CODF	CSR	SIZE
Year	1				
ROA	-0.087**	1			
CODF	-0.00600	-0.420***	1		
CSR	-0.0580	0.389***	-0.558***	1	
SIZE	0.142***	0.0420	0.00100	0.105***	1

According to Table 3, there is a negative relationship between social responsibility and debt financing costs, with a correlation coefficient of -0.558 and a significant effect of three stars. Three stars indicate a significant relationship between the two, significant at the 1% level. This provides preliminary evidence for the negative correlation between social responsibility and debt financing costs proposed in hypothesis two. Based on the above explanation, it can be concluded that the correlation coefficients between social responsibility, financial performance, and debt financing costs are positive at 0.389 and negative at 0.558, respectively, providing further evidence for hypothesis three. Let's take a closer look at the relationship between the control variables year (Year) and enterprise size (Size) and other variables. According to the table, the control variable (Year) only has a certain relationship with the explained variables financial performance (ROA) and enterprise size (SIZE), and is significant at the 5% and 1% levels, respectively. The control variable enterprise size (SIZE) is only positively correlated with the explanatory variables social responsibility (ROA) and enterprise size (SIZE), both of which are significant at the 1% level.

5.3. Multiple regression analysis

The data in this article is panel data, therefore a fixed effects model is used to regress the panel data, with fixed individual effects and time effects. Table 5 shows the regression results of social responsibility, financial performance, and debt financing costs.

Table 5 Model 1 2 3 Regression results

VARIABLES	(1) ROA	(2) CODF	(3) ROA
CSR	0.0839*** (0.0226)	-0.00553** (0.00272)	0.0798*** (0.0230)
CODF			-0.734** (0.348)
SIZE	-0.00342 (0.0106)	0.000627 (0.00150)	-0.00296 (0.0103)
2018.year	0.00409 (0.00403)	0.000236 (0.000707)	0.00427 (0.00405)
2019.year	0.00135 (0.00634)	0.00133 (0.000905)	0.00233 (0.00613)
2020.year	0.00608 (0.00826)	-0.000471 (0.00110)	0.00574 (0.00825)
2021.year	-0.0119 (0.00930)	-0.00101 (0.00115)	-0.0126 (0.00929)
Constant	0.155 (0.230)	0.000748 (0.0327)	0.155 (0.224)
Observations	640	640	640
R-squared	0.173	0.035	0.186
Number of id	128	128	128

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Columns (1), (2), and (3) in Table 5 represent the regression results of social responsibility and financial performance, social responsibility and debt financing costs, and social responsibility and financial performance and debt financing costs, respectively; From column (1), it can be seen that the coefficient of social responsibility and financial performance is 0.0839, indicating a significant positive correlation between the two, and the relationship is significant at the 1% level. Therefore, once the hypothesis is verified, it indicates that the higher the level of social responsibility, the higher the financial performance of the enterprise. Fulfilling social responsibility is beneficial for alleviating information asymmetry, conveying positive signals to various stakeholders, fostering corporate reputation, enhancing core competitiveness, increasing consumer loyalty to the company brand, and ultimately improving performance. Column (2) is the regression result of social responsibility and debt financing costs. As can be seen from the second column, the correlation between social responsibility and financial performance is negative at 0.00553, indicating a significant negative correlation between the two, and the relationship is significant at the 5% level. Thus, hypothesis two can be verified, indicating that fulfilling social responsibility by enterprises is conducive to breaking down information barriers with creditors, alleviating financing constraints, and thus achieving lower debt financing costs. Column (3) shows the regression results of social responsibility, financial performance, and debt financing costs. From column (3), it can be seen that there is a negative correlation between debt financing costs and financial performance, with a correlation coefficient of 0.734, and this relationship is significant at the 5% level; There is a positive correlation between social responsibility and financial performance, with a correlation coefficient of 0.0798, and this relationship is significant at the 1% level. By comparing the coefficients of financial performance and social responsibility through columns (1) and (3), it can be concluded that before controlling for debt financing costs, the coefficient of financial performance and social responsibility was 0.0839. However, after controlling for debt financing costs, the coefficient of financial performance and social responsibility was 0.0798, confirming hypothesis 3.

5.4. Robustness test

In order to ensure the reliability of the research results and model in this article, variable substitution is used for robustness testing. Replace the financial performance indicator asset return rate with the return on equity rate, and empirically test it by incorporating the return on equity rate into the relevant model. According to the results of empirical testing, it can be concluded that the analysis is still robust and has not undergone substantial changes. The final result is as follows:

Table 6 Analysis of robustness results

VARIABLES	(1) ROE	(2) CODF	(3) ROE
CSR	0.156*** (0.0375)	-0.00553** (0.00272)	0.151*** (0.0374)
CODF			-0.937* (0.539)
SIZE	-0.0196 (0.0277)	0.000627 (0.00150)	-0.0191 (0.0278)
2018.year	0.0152** (0.00702)	0.000236 (0.000707)	0.0154** (0.00716)
2019.year	0.0139 (0.0105)	0.00133 (0.000905)	0.0151 (0.0103)
2020.year	0.0228 (0.0147)	-0.000471 (0.00110)	0.0223 (0.0148)
2021.year	-0.00801 (0.0176)	-0.00101 (0.00115)	-0.00896 (0.0179)
Constant	0.533 (0.604)	0.000748 (0.0327)	0.534 (0.605)
Observations	640	640	640
R-squared	0.196	0.035	0.204
Number of id	128	128	128

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 6 shows the results of the robustness test. From column (1), it can be seen that the coefficient of ROE and CSR is positive at 0.156, indicating a positive correlation between the two and a significant correlation at the 1% level; From column (2), it can be seen that the coefficient of ROE and CODF is negative at 0.937, indicating a negative correlation between the two, and this relationship is significant at the 10% level; By comparing column (1) and column (2), it can be seen that before controlling for CODF, the coefficients of ROE and CSR were 0.156, while after controlling for CODF, the coefficients of ROE and CSR were 0.151. The results of validation three are still robust.

6. Conclusion

The rapid development of the economy has brought greater development space for enterprises, but it has also caused many problems. The issues of whether the food production environment is unclean and whether the rights of employees are protected have sparked heated discussions on the internet. There is a lot of debate about whether enterprises, as economic actors in the market, should fulfill their social responsibilities. Currently, many scholars have conducted extensive research on the relationship between the two, but there is no consistent conclusion. Therefore, this article takes food listed companies in the manufacturing industry as samples to study the relationship between corporate

social responsibility, financial performance, and debt financing costs, and to investigate whether debt financing costs play an intermediary role in the relationship between the two. This article uses STATA14 software for empirical analysis and draws the following conclusions:

Enterprises that actively undertake social responsibility will achieve higher financial performance
According to the theory of information transmission, fulfilling social responsibility by enterprises conveys a message to stakeholders that they are altruistic economic entities that can take responsibility for their interests. Although the interests and demands of various stakeholders are not the same, their common goal is that the enterprise can be responsible to them and their own interests can be guaranteed. Enterprises send positive signals to stakeholders by fulfilling their social responsibilities. When stakeholders receive these signals, they will trust the enterprise more, which is beneficial for its development.

Enterprises actively assuming social responsibility will incur lower debt financing costs

Creditors are less familiar with the company than internal personnel, indicating an information barrier between creditors and the company. Creditors may demand that companies pay high costs to ensure the safety of their funds. According to the theory of information transmission, actively fulfilling social responsibilities and conveying signals to creditors can help alleviate information asymmetry between both parties and break down information barriers. Social responsibility belongs to non-financial information, and creditors will have a better understanding of the company based on this non-financial information, which can alleviate the financing constraints of both parties to a certain extent and help the company pay lower debt financing costs.

Corporate social responsibility affects the financial performance of a company through the cost of debt financing

According to the theory of information asymmetry and signal transmission, when companies fulfill their social responsibilities, they will reduce the degree of information asymmetry between both parties, alleviate financing constraints, and help companies obtain funds from creditors at lower debt financing costs. The cost of debt financing is closely linked to net profit, and reducing debt financing costs will to some extent increase net profit.

References

- [1] Carroll, Archie B. "Corporate social responsibility: Evolution of a definitional construct." *Business & society* 38.3 (1999): 268-295.
- [2] Cochran, Philip L., and Robert A. Wood. "Corporate social responsibility and financial performance." *Academy of management Journal* 27.1 (1984): 42-56.
- [3] Griffin, Jennifer J., and John F. Mahon. "The corporate social performance and corporate financial performance debate: Twenty-five years of incomparable research." *Business & society* 36.1 (1997): 5-31.
- [4] Aupperle, Kenneth E., Archie B. Carroll, and John D. Hatfield. "An empirical examination of the relationship between corporate social responsibility and profitability." *Academy of management Journal* 28.2 (1985): 446-463.
- [5] Preston, Lee E., and Douglas P. O'bannon. "The corporate social-financial performance relationship: A typology and analysis." *Business & Society* 36.4 (1997): 419-429.
- [6] Tsoutsoura, Margarita. "Corporate social responsibility and financial performance." (2004).
- [7] Aras, Güler, Aslı Aybars, and Ozlem Kutlu. "Managing corporate performance: Investigating the relationship between corporate social responsibility and financial performance in emerging markets." *International Journal of productivity and Performance management* 59.3 (2010): 229-254.
- [8] Moosa, Anitha, He, Feng, and Arrive, Tsitaire Jean. 'Impact of Corporate Social Responsibility on Corporate Financial Performance: Evidence from the Maldives Stock Exchange'. 1 Jan. 2021 : 127 – 139.
- [9] Kludacz-Alessandri, M.; Cygańska, M. Corporate Social Responsibility and Financial Performance among Energy Sector Companies. *Energies* 2021, 14, 6068.
- [10] Luo Jiaqi, Kuang Haibo, Shen Siyi Research on the Impact of Corporate Social Responsibility on Financial Performance: A Case Study of the Transportation Industry [J]. *Research Management*, 2019, 40 (02): 199-208.
- [11] Li Qian, Xu Jiaming, Xiong Jie, Liu Haixin Research on the Impact of Corporate Social Responsibility Consistency on Financial Performance [J]. *Journal of Management*, 2022,19 (02): 245-253

- [12] Zheng Pei, Li Yixiu, He Yanhuan Research on the Impact of Corporate Social Responsibility on Financial Performance: Empirical Evidence from Chinese Listed Companies [J]. *Financial Theory and Practice*, 2020, 41 (06): 64-71
- [13] Benlemlih, Mohammed. "Corporate social responsibility and firm financing decisions: A literature review." *Journal of Multinational Financial Management* 42 (2017): 1-10.
- [14] Rajamani, K. (2021). Debt Financing and Financial Performance: Empirical Evidence of Indian SMEs Listed in BSE-SME Platform. In: Bilgin, M.H., Danis, H., Demir, E., Vale, S. (eds) *Eurasian Economic Perspectives*. Eurasian Studies in Business and Economics, vol 16/1. Springer, Cham.
- [15] Shiu, Y., Yang, S. Does Engagement In Corporate Social Responsibility Provide Strategic Insurance-Like Effects? [J]. *Strategic management journal*, 2017, 38(2): 455-470.
- [16] Fombrun C, Shanley M. What's in a Name? Reputation Building and Corporate Strategy [J]. *Academy of Management Journal*, 1990, 33(2):233-258.
- [17] Wang Yiran Research on the Relationship between Corporate Social Responsibility and Debt Capital Cost [J]. *Market Modernization*, 2017 (13): 216-217.
- [18] Xie Hua, Zhu Liping Corporate social responsibility information disclosure and debt financing costs: empirical data from heavily polluting listed companies on the main board [J]. *Finance and Accounting Communications*, 2018 (23): 34-38.
- [19] Wang Baohui Green Credit, Corporate Social Responsibility Disclosure, and Debt Financing Costs: An Empirical Study Based on Heavy Polluting Enterprises Listed on the A-share Market from 2011 to 2017 [J]. *Financial Theory and Practice*, 2019 (07): 47-54
- [20] Liao Liankai, Yang Yu, Wu Anni Corporate charitable donations, media attention, and debt financing costs [J]. *Finance and Accounting Newsletter*, 2021 (11): 69-73.
- [21] Yang Yulong, Wang Manqian, Xu Yupeng Deleveraging, Bank Enterprise Relations, and Corporate Debt Structure [J]. *Financial Research*, 2020, 46 (09): 138-152
- [22] Zhao Liangyu, Ruan Xinyi, Liu Fenfen The impact of social responsibility information disclosure on corporate financing costs: empirical evidence based on listed companies in China [J]. *Journal of Guizhou University of Finance and Economics*, 2017 (06): 40-52
- [23] Shi Min, Cai Xia, Geng Xiulin Corporate Social Responsibility, R&D Investment, and Debt Financing Costs in a Dynamic Environment: An Empirical Study Based on Private Listed Manufacturing Companies in China [J]. *Journal of Shanxi University of Finance and Economics*, 2017, 39 (03): 111-124
- [24] Su Wujun, Yan Qing Debt financing costs, social responsibility, and corporate performance: an empirical study based on A-share listed companies in China [J]. *Southern Finance*, 2020 (10): 13-27
- [25] Chen Yaqing Social Responsibility Information Disclosure and Corporate Financial Performance [D]. Anhui Agricultural University, 2022
- [26] Yang Wansu, Yang Shanlin Empirical Study on the Relationship between Corporate Social Responsibility and Financial Performance in the Chinese Context: A Comparative Analysis of Large, Medium, and Small Listed Companies [J]. *China Management Science*, 2016, 24 (01): 143-150.
- [27] Wei Liling, Lu Yang Research on the Relationship between Corporate Social Responsibility and Financial Performance: A Case Study of the Food and Beverage Manufacturing Industry [J]. *Journal of Southeast University (Philosophy and Social Sciences Edition)*, 2016, 18 (S2): 26-29
- [28] Wang Huazhong, Li Chao Research on the Relationship between Social Responsibility, Corporate Governance, and Financial Performance: Empirical Analysis Based on Panel Data of Food Listed Companies [J]. *Price Theory and Practice*, 2019 (12): 145-148
- [29] Qi Dianwei, Sun Mingyan, Zhang Wengong Corporate Social Responsibility, Corporate Culture, and Financial Performance [J]. *Friends of Accounting*, 2020 (17): 74-80
- [30] Qin Mu Exploration of the Relationship between Corporate Social Responsibility Performance and Enterprise Performance: A Case Study of Food Manufacturing Enterprises [J]. *China Forestry Economy*, 2021 (06): 140-144