

The Impact of CSR on the Financial Performance of Firms in Different Industries: An Example from the Financial Industry and the Healthcare Industry

Ioannis Gkliatis

University of Hertfordshire, London, UK

igliatis@gmail.com

Abstract: This Paper Analyses The Impact Of Corporate Social Responsibility (CSR) On Corporate Financial Performance (CFP) in the financial and healthcare sectors in China, examining the annual financial data and ESG scores of a total of 124 companies between 2016 and 2021 and selecting ROA, corporate financial leverage, company size and board size as variables. A panel data regression was used to conduct an econometric analysis to examine the impact of social responsibility on corporate financial performance in the total industry, the financial industry and the healthcare industry, respectively. The empirical analysis of this study concluded that the effect of CSR on corporate financial performance has different results in different industries, the effect of CSR on CFP is significant and negative in the healthcare industry and insignificant in the financial industry. However, there are some limitations to this study. The study only considered the financial sector and the healthcare sector and was not able to include a number of other sectors for comparison. The study was also limited by the sample size of CSR in Chinese companies, which made the model less convincing, and the choice of variables also affected the results. However, these provide ideas and provide a pavement for future research.

Keywords: CSR, Financial performance, Financial industry, Healthcare industry

1. Introduction

1.1 Introduction

CSR (Corporate Social Responsibility) has been an important measure of business and society for the past few decades, since the inception of the theory, and has been used by many researchers as an important link in exploring the relationship between companies and their stakeholders in a social context.

CSR is also considered as a key factor in ensuring economic efficiency from the macro level down to the corporate level, and CSR has become a global phenomenon. And it is necessary and essential for companies to fulfil their basic social, environmental, and economic responsibilities in accordance with their own and the environment's development needs. However, scholars such as who insist that firms are profit-driven show that Abad-Segura, Cortés-García and Belmonte-Ureña (2019) who insist that firms are profit-driven show that the majority of companies focus on their corporate interests and growth, while lacking ecological and social concerns. In the long term, the benefits of investing in CSR are uncertain and this uncertainty can deplete the funds available to companies for development.

In this paper, this article uses the health care and finance sectors, which are not particularly sensitive to environmental factors, to overcome the heterogeneity of a random sample and the lack of cross-sector comparability of studies mentioned before.

1.2 Research Objectives

The objective of this article is to investigate the impact of CSR on CFP in different companies and to make recommendations for future directions based on the findings. The whole topic of the article is based on the financial sector and the healthcare sector in China, by comparing the data of the two sectors individually and comparing the data of the two sectors as a whole.

This study aims to fill a gap in the existing literature on the impact of CSR on CFP in a number of different industries, and to select panel data for the subsequent empirical analysis, while all headset data were obtained from the publicly available Eikon database to ensure data integrity and feasibility of the study.

2. Literature Review and Theory Development

This section is divided into two main sections, firstly, it is a review of the concept of CSR and the relevant theoretical literature. Secondly, it presented the importance of different empirical research in choosing the effect of CSR on CFP, and the importance of CFP in exploring the motivations of companies to be socially responsible. Thirdly, it summarizes and compares the choice of indicators from previous studies about CSR and CFP. Finally, it describes the research gaps and the value of this paper.

2.1 Corporate Social Responsibility (CSR)

2.1.1 The concept development of CSR

According to the Wang and Sarkis (2017) conclusions, there is no clear consensus in current researches as to whether or what kind of impact CSR has on CFP. CSR proponents argue that companies' investments in CSR have a positive impact on their long-term future development, ensuring their own interests while taking risks for their stakeholders (Albuquerque, Koskinen and Zhang, 2019); On the other hand, opponents believe that investment in CSR will deplete the company's existing resources, leading to a decrease in market efficiency and a reduction in the allocation of resources, as well as creating a divergence of interests between shareholders (Martin, Wiseman and Gomez-Mejia, 2019).

CSR is a concept that encompasses a wide range of perspectives, concepts and approaches, and has gone through a long and diverse period of development, which will lead to a more systematic and operational framework of CSR theory based on evolving social circumstances and expectations.

2.1.2 Relevant theory

- Stakeholder theory

Stakeholders include the company's shareholders, employees, consumers, suppliers and other trading partners, as well as groups such as government departments, the media, environmentalists and even the natural environment, which are affected by the company's activities (Clarkson, 1995). Some of these stakeholders share the risks of the enterprise, some pay for the enterprise's business activities, and some monitor and control the enterprise, and by influencing financial performance through strategic corporate decisions, similarly, companies use stakeholder management as a means to maximize corporate profits (Rose, Flak and Sæbø, 2018).

According to the stakeholder theory, a company that invests material and financial resources from its stakeholder groups into its production operations should naturally meet the needs of its stakeholders, just as employees want higher wages, consumers want high quality products and shareholders want high returns (Javed *et al.*, 2020). From the shareholders' point of view, managers act as intermediaries and employees responsible only for maximizing shareholders' wealth, which can lead to problems in resource allocation and a lack of market mechanisms.

- Sustainability theory

Based on the consideration of shareholder and stakeholder relations, and considering that CSR affects a company's reputation for purpose of improving its performance, companies with a high CFP tend to improve their relationships with stakeholders by investing more in socially sustainable practices in order to achieve better overall performance (Martínez-Ferrero and Frías-Aceituno, 2013).

In summary, the basic concepts of both theories are consistent with the sustainability of the financial sector and the health care industry. In order to promote the development of the financial sector in the health care industry, to improve the quality of services and products in the health care industry, as well as the welfare and interests of stakeholders and shareholders; and for the financial industry, which plays an important role in China's national economy, it is extremely important to build a good financial market environment. In this study, the relationship between CSR and CFP in the financial and health care industry will be further investigated to understand and compare the extent to which CSR affects CFP in different sectors, and to make more specific recommendations.

2.2 The Importance of CFP and its Relevant to CSR

From previous studies it can be concluded that the most fundamental social responsibility of a company before its legal, ethical and charitable responsibilities, is the economic responsibility to ensure that it aims to make a profit (Carroll, 1991).

Bharadwaj (1995) argues that the performance of a firm is a demonstration of the results of the firm's development and affects a number of development aspects such as customer satisfaction and investment, but Campbell (1990) suggests that the performance of a firm is limited in a number of ways and reflects the behaviors of the firm as well as the results of the firm which are also influenced by the behaviors of the firm. Research on the relationship between CSR and CFP has been debated for a long time and there is no unified conclusion, and the results of empirical research are also diverse (Scholtens, 2008; Lu *et al.*, 2014a; Tiep Le, Ngo and Aureliano-Silva, 2021).

Margolis and Walsh (2003) used meta-analysis to summarize 127 studies on CSR and financial performance from 1972-2002, of which 109 studies used CSR as the independent variable and financial performance as the dependent variable. The findings of another 54 of these studies showed that CSR had a positive effect on CFP, except for seven papers that showed a negative correlation between CSR and CFP, and the remaining part of the papers indicated that there is no correlation between CSR and CFP. Lu et al. (2014) summarized 84 studies over a ten-year period from 2002 to 2011, of which 38 studies showed a positive correlation between CSR and CFP, six other studies showed a negative effect of CSR on CFP, and the remaining studies showed a non-significant correlation, besides, also highlighting the effect of time and space on the relationship between CSR and CFP. The remaining studies showed a non-significant correlation. In conclusion, exploring the relationship between CSR and CFP in a specific community is a promising area that could also have important academic and practical value (Lu *et al.*, 2014b).

2.2.1 Positive effect of CSR to CFP

Research on the relationship between CSR and CFP first appeared in 1972 in an empirical study in which the share price growth of 14 companies over the past six months was measured by Moskowitz (1972) using the reputation index method by comparing it with the average growth of the Dow Jones index. Although this study is representative in early period, the overall sample size of the experiment is too small and the methodology for assessing CSR is not comprehensive, nor is the choice of short-term share price as a measure of financial performance representative.

Hamilton and Tschopp (2012) used the KDL index to measure social corporate responsibility, while ROA, ROE and Tobin's Q were chosen to measure the change in financial performance of the firm and a positive relationship was found between them using a multiple linear regression model. The same linear regression method was used in a study on the Indian IT industry, where M.Chandra and Kumaran (2019) was concluded that return on equity (ROE) was positively correlated with industry net income, that CSR was a necessary tool for firms, and that the return on corporate spending on CSR was significant and contributed to improved corporate performance.

There are numerous studies have shown that the impact of CSR on CFP is positive (Quere, Nouyrigat and Baker, 2015; Choi and Lee, 2018). The impact of CSR on corporate performance is influenced by the size of the company, with companies with low CSR generally having lower returns on performance than companies with high CSR, and CSR having a positive impact on companies by providing them with the means to develop corporate innovation and market competitiveness and in doing so improving corporate performance (Jang *et al.*, 2019; Bahta *et al.*, 2020). By engaging in socially responsible practices, companies can build a positive brand image and brand reputation to gain stakeholder support, and by attracting more investors, employees, customers and consumers, both financial performance and non-financial benefits will increase. (Mishra and Suar, 2010).

2.2.2 Negative effect of CSR to CFP

Vance's 1975 study is similar to Moskowitz's (1972) in that they both used share price growth as a measure of financial performance, which is clearly flawed, but the difference is that Vance's findings show a negative correlation between CSR and CFP, with the higher a firm's CSR performance the lower its share price (Vance, 1975). The Lioui and Sharma (2012) chose the KLD index to measure CSR and the ROA and Tobin's Q to measure CFP for 1,746 firms between 1992 and 2008, and the statistical results showed a statistically negative relationship. However, considering the reciprocal effect between the company's sustainability efforts and the company's innovative research and development, this makes CSR a potential cost that promotes innovative research and development and indirectly creates additional value for the company.

Over the years, companies have been increasing the amount of resources allocated to CSR, and if the increase in CSR spending is seen as a response to stakeholder preferences, then it is more of an over-investment in CSR to satisfy the private interests of the company's managers (managers and shareholders) while largely satisfying the company's interests, resulting in damage to the interests of the company and its stakeholders (Barnea and Rubin, 2010; GRAVES, 2014; Kao *et al.*, 2018). Corporate social responsibility is costly to implement, and when the costs exceed the benefits to the company, it can lead to lower profits and reduced shareholder benefits. In addition, when stakeholders engage in false CSR practices because of their personal preferences, it can reduce the trust of investors, employees and consumers and the reputation of the company (Waddock and Graves, 1997; Franco *et al.*, 2020).

While some past research has confirmed the uncertainty of the relationship between CSR and CFP, most studies have not denied that long-term investment in CSR brings benefits including, but not limited to, reputation and company credibility.

2.3 Purpose of this Paper

Based on the gaps in the current research, it is necessary to conduct targeted research on companies in different industries, for example, to explore the relationship between CSR and CFP in specific regions and industries, to make the results more reliable. Besides, the industry attribute of the firm has also been considered as an important variable in previous studies, and the findings suggest that the impact of CSR on CFP varies across industries. Most studies have focused on a broad industry or single industry perspective, and few studies have examined the relationship between CSR and CFP within a specific industry.

Another point mentioned earlier is that CSR is a very broad definition, which is influenced by many factors such as time and space, and it is difficult to standardize on different economic trends in different countries, which leads to different definitions and practices of CSR in each country.

While the financial sector can generate some corporate value from CSR performance itself, the healthcare sector needs to establish CSR committees across the sector and enhance corporate value from CSR practices (Kuzey *et al.*, 2021). This study attempts to explore the impact and differences of CSR on the financial performance of companies in the health care and financial industries in the context of a developing socialist country like China. It also provides a reference for research on the correlation between CSR and financial performance in emerging markets and supports the future sustainable development of Chinese companies.

3. Methodology

3.1 Data

3.1.1 Data selection

This study collected and used data from the financial and healthcare sectors from 2016 to 2021. And the data source is the TRBC economic sector of the Thomson Reuters Eikon database. TRBC is a five-tier framework consisting of economic subgroups, 28 business subgroups, 54 industry subgroups, 136 industries and 837 activities (Refinitiv, 2022). The financial sector and the health insurance sector are among the ten economic sectors. And the financial sector includes banks, insurance, life, financial technology, REITs, etc.; the healthcare sector includes biotechnology, healthcare services and technology companies, pharmaceuticals, biotechnology, and medical research.

Data filtering is the key to the panel data regression, after pre-processing the sample data, combining with real data analysis, outlier detection, etc., a total of 67 companies in the financial sector and 63 companies in the healthcare sector were obtained. Given that the model requires a certain sample size, which means that the larger the sample size the more accurate the estimates will be, and the larger the sample size will also help to improve the accuracy of the results and provide a better fit. Therefore, this study does not classify industries within industries, but rather uses the TRBC database classification for industry classification. Considering that China is a developing country, the level of participation and assessment of CSR in various industries is not high, so the overall data volume is small and it is difficult to distinguish a certain sector within the industry, for example, the financial industry includes banking, insurance, trust, securities and leasing, etc. Therefore, the data of the whole financial industry and the healthcare industry were selected as the target of the study and used for data analysis after basic screening and deletion.

3.1.2 Variables selection

- Dependent variables

Many existing studies use the accounting metrics return on total assets (ROA) and return on net assets (ROE) as the measures of financial performance of companies. According to previous studies, corporate performance should not only consider the input from shareholders, but also the income generated from corporate liabilities (Hamilton and Tschopp, 2012; Lioui and Sharma, 2012; M.Chandra and Kumaran, 2019). Therefore, this study chooses ROA as a measure of corporate performance to measure how much net profit per unit of corporate assets can bring to the firm.

- Independent variables

Environmental indicators include how the company protects the environment; social indicators measure how the company deals with its stakeholders such as employees and customers; and governance indicators ensure that the company is accountable to its shareholders by adopting transparent accounting practices and preferring an honest and diverse leadership structure (Friede, Busch and Bassen, 2015; Wang and Sarkis, 2017; Franco *et al.*, 2020). In this study, ESG scores from the Eikon database were chosen as the core explanatory variables for measuring corporate social responsibility.

- Control variables

For the choice of control variables, based on previous research this article chose firm size (SIZE), financial leverage (LEV) and board size (BSIZE).

The first is the firm size (SIZE), which affects the financial performance of the firm, with the larger the firm the more likely it is to achieve economies of scale (Vuong, 2022). The next is Financial Leverage (LEV) which is the ratio of (net profit + income tax + finance costs) to (net profit + income tax). Financial leverage is a variable that can be used to measure business capability and risk levels in the majority of companies, and is used as a control variable in many CSR studies (Stamolampros and Symitsi, 2022). The last one is the size of the board of directors (BSIZE). According to the stakeholder theory, there are shareholders who invest in CSR because of their personal preference, but this is to the detriment of the company and the size of the board of directors is also affected by the size of the company, so the size of the board of directors is chosen as the third control variable (Kuzey *et al.*, 2021).

3.2 Research Model and Hypothesis

3.2.1 Research hypothesis

Based on the review of the literature, this study proposes three research hypotheses:

H1: Corporate social responsibility and financial performance are correlated in the healthcare sector

H2: Corporate social responsibility and financial performance are correlated in the financial sector

H3: Corporate social responsibility and financial performance are correlated in healthcare and financial sectors

3.2.2 Research model design

In regression models, when the number of independent variables exceeds two, the model is usually referred to as a multiple linear regression model. In practical problems, where the factors influencing financial performance are considered to include multiple variables such as firm size, financial leverage and firm size, the use of a multiple linear regression model is more effective and more appropriate to the needs of this study than a linear regression model with a single independent variable.

Equation 1:

$$ROA_{i,t} = \alpha_0 + \alpha_1 CSR_{i,t} + \alpha_2 BSIZE_{i,t} + \alpha_3 LEV_{i,t} + \alpha_4 SIZE_{i,t} + \omega_{i,t}$$

Similarly, to test the hypothesis 2 and hypothesis 3, it developed the following two models.

Equation 2:

$$ROA_{i,t} = \beta_0 + \beta_1 CSR_{i,t} + \beta_2 BSIZE_{i,t} + \beta_3 LEV_{i,t} + \beta_4 SIZE_{i,t} + \omega_{i,t}$$

Equation 3:

$$ROA_{i,t} = \theta_0 + \theta_1 CSR_{i,t} + \theta_2 BSIZE_{i,t} + \theta_3 LEV_{i,t} + \theta_4 SIZE_{i,t} + \omega_{i,t}$$

"i" represents the industry; "t" represents the year.

ROA is the dependent variable representing the financial performance of the firm; CSR is the independent variable, which is the ESG score from the Eikon database

This study uses STATA 16 to test the impact of CSR on corporate financial performance using multiple linear regressions based on panel data. Before conducting the regression analysis, firstly, the correlation between the variables was tested using the central VIF to exclude the effect of multicollinearity on the experimental results, secondly, the Breusch-Pagan test was used to test for the presence of heteroskedasticity in the multiple regression model, and finally, the choice of the fixed-effects or random-effects model was based on the Hausman test.

4. Data Analysis and Discussion

This section regresses the panel data mentioned in Section 3 to analyze the impact of CSR practices on corporate financial performance in the financial and healthcare sectors and analyses the regression results of the three hypotheses to obtain different effects of CSR between different sectors.

4.1 Descriptive Analysis

The results of the descriptive analysis are given in Table 1, which includes financial indicators and CSR indicators for two industries.

Table 1: Descriptive statistical of Health care & Financial industry

Variable	Obs	Mean	Std.Dev.	Min	Max
Year	620	2019		2017	2021
ESG	515	39.46	15.07	3.110	79.80
ROA	620	0.0700	0.0912	0.00100	1.551
BSIZE	620	8.835	4.944	0	23
LEV	620	0.571	0.268	0.0430	0.952
SIZE	620	7.002	3.854	2.115	13.74

The data in Table 1 shows that the mean of the overall ESG score is 39.46, with a standard deviation of 15.07, indicating a relatively even selection of data, with not too many extreme or extreme small values, and a relatively even distribution between 2017 and 2021. Despite the large extreme difference, the ESG score is generally stable considering the size of the company and the time they spent investing in CSR.

The maximum and minimum values of ROA are 0.007 and 1.551 respectively, with a large difference and a mean value of 0.0700, indicating that there are individual companies whose ROA far exceeds the general level of the industry, but given the large number of companies in the two industries and their different sizes, this does not affect further analysis of the data.

As for the control variables, there are cases where the minimum value is zero due to changes in the number of board members between 2017 and 2021 for some companies, which have been screened out of the data for companies that have had a board of directors for less than two years in the last five-year period.

Table 2: Descriptive statistical of Health care industry

Variable	Obs	Mean	Std.Dev.	Min	Max
Year	315	2019		2017	2021
ROA	315	0.125	0.105	0.00700	1.551
ESG	237	37.75	15.81	3.110	79.80
BSIZE	315	7.003	4.528	0	16
LEV	315	0.338	0.157	0.0430	0.736
SIZE	315	3.213	0.421	2.115	4.224

Source: author's own

Table 3: Descriptive statistical of Financial industry

Variable	Obs	Mean	Std.Dev.	Min	Max
Year	305	2019		2017	2021
ROA	305	0.0188	0.0198	0.00100	0.189
ESG	278	40.63	14.26	6.730	78.23
BSIZE	305	10.75	4.459	0	23
LEV	305	0.783	0.132	0.112	0.947
SIZE	305	4.596	0.666	2.674	5.968

In order to explore the differences between companies in the financial and healthcare sectors, descriptive statistics are presented in Tables 3 and 4 respectively.

Compared to the healthcare sector, the financial sector generally has a lower ROA in terms of mean ($0.0188 < 0.125$), minimum ($0.00100 < 0.0070$) or maximum ($0.189 < 1.551$) values. It is clear that the healthcare sector has a higher return on assets and a more profitable advantage over the financial sector when measuring a company's financial performance in terms of ROA.

Corporate social performance in the two sectors is also similar, with the mean for the financial sector at 40.63 and the mean for the healthcare sector only 2.88 lower than that of the financial sector.

It is worth noting that the mean financial leverage of the Finance sector is 0.783, more than double the mean financial leverage of the Healthcare sector. The maximum and minimum overall financial leverage is also higher for companies in the Financial sector (0.112 to 0.947) compared to the Healthcare sector (0.0430 to 0.736). Similarly, company size is also higher on average in the financial sector (4.596) than in the healthcare sector by approximately 1.383 and the maximum and minimum values of company size are also higher for companies in the financial sector (2.674 to 5.968).

4.2 Correlation Analysis

In order to investigate the impact of CSR on corporate financial performance, this study uses multiple regression-panel methods to regress multiple data from two financial and healthcare industries.

And before conducting the regression analysis, it was necessary to test the correlation between the variables to ensure that the effect of multicollinearity between the data was excluded from the results.

The correlations between data for the healthcare sector, the financial sector and the overall variables for both sectors are shown in Tables-4, Tables-5 and Tables-6.

According to the research of Mela and Kopalle (2002). study correlation between variables does not affect the regression test as long as it is not greater than 0.7. Based on the results in the table, it is easy to find that there is no correlation greater than 0.7 in the overall sample data, the financial sector data, and the healthcare sector data. Therefore, there is no multicollinearity between the statistics and the hypothesis of multicollinearity between the statistics is rejected, and the relevant data can be further tested by panel data regression.

Table 4: Correlation of Health care industry

Variables	ESG	ROA	BSIZE	LEV	SIZE
ESG	1				
ROA	-0.127	1			
BSIZE	-0.0681	-0.0971	1		
LEV	0.0624	-0.178	0.122	1	
SIZE	0.350	-0.144	0.492	0.453	1

Table 4: Correlation of Financial industry

Variables	ESG	ROA	BSIZE	LEV	SIZE
ESG	1				
ROA	-0.0737	1			

Variables	ESG	ROA	BSIZE	LEV	SIZE
BSIZE	0.0636	-0.303	1		
LEV	0.176	-0.618	0.440	1	
SIZE	0.323	-0.435	0.498	0.3803	1

Source: author's own

Table 4: Correlation of Financial industry

Variables	ESG	ROA	BSIZE	LEV	SIZE
ESG	1				
ROA	-0.135	1			
BSIZE	0.0564	-0.288	1		
LEV	0.146	-0.582	0.427	1	
SIZE	0.181	-0.584	0.466	0.3897	1

4.3 Panel Data Regressions

- Fixed effects model

The results of panel data regression are more accurate and informative than correlation analysis. The results of models (1), (2) and (3) show that ESG has a negative relationship with ROA.

Table 5: Fixed-effects model

	(1)	(2)	(3)
	Health care industry	Financial industry	Financial & Health care industry
ESG	-0.00390*** (0.000749)	-0.0000556 (0.0000887)	-0.00145*** (0.000393)
BSIZE	0.00577 (0.00467)	0.000294 (0.000413)	0.00179 (0.00205)
LEV	-0.221** (0.0968)	0.0723*** (0.0213)	-0.131** (0.0643)
SIZE	0.396*** (0.0442)	0.0137* (0.00785)	0.110*** (0.0169)
_cons	-1.021*** (0.144)	-0.105*** (0.0322)	-0.642*** (0.118)
N	237	278	515
R ²	0.3217	0.108	0.096
Prob > F	0.0000	0.0000	0.0000

Standard errors in parentheses

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

Note: * means the correlation is significant at the 10% level; ** means the correlation is significant at the 5% level; *** indicates correlation is significant at the 1% level.

The core explanatory variable ESG is significant ($p < 0.01$) in the model for both the healthcare sector and the total sector and is not significant in the financial sector. Among the control variables, board size (BSIZE) is insignificant in all models, while financial leverage (LEV) and firm size (SIZE) are significant in all models. The above results demonstrate that there is a correlation (-0.0039) between CSR and CFP in the healthcare sector, and that it is harmful and significant at the 1% level, which also verified the hypothesis 1.

From the overall data regression results, the effect of ESG on firm performance in both industries is significant and negative at the 1% level (-0.00145) and it verified the hypothesis 3 while the effect of BSIZE on firm performance is not significant, and LEV and SIZE are significant at the 5% and 1% levels respectively.

- Random - effects model

Table 6: Random-effects model

	(1)	(2)	(3)
	Health care industry	Financial industry	Financial & Health care industry
ESG	-0.00191***	0.0000578	-0.000157
	(0.000617)	(0.0000702)	(0.000271)
BSIZE	-0.00641*	-0.000622'	-0.00143
	(0.00389)	(0.000350)	(0.00158)
LEV	-0.208***	-0.0536***	-0.102**
	(0.0719)	(0.0147)	(0.0415)
SIZE	0.137***	-0.00160	-0.00624**
	(0.0314)	(0.00315)	(0.00302)
_cons	-0.123	0.0732***	0.194***
	(0.0913)	(0.00932)	(0.0200)
N	237	278	515
R²	0.0001	0.6321	0.0022

Standard errors in parentheses

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

Note: * means the correlation is significant at the 10% level; ** means the correlation is significant at the 5% level; *** indicates correlation is significant at the 1% level.

The results of the random effects model are shown in Table-6. Based on the model (1), the ESG has a negative effect (-0.00191) on ROA and significant at the 1% level. From the results of models (1) and (3), the effect of ESG on the performance of firms in the health care sector and both two sectors are not significant.

Different from the fixed effects model, the control variable BSIZE is significant at the 10% level in model (1) while BSIZE was not significant in either (2) or (3). Besides, LEV showed negative effect (-0.208 and -0.0536 separately) in model (1) and model (2) and was significant at the 1% level in both models (1) and (2). The other variable SIZE was significant at the 1% level in models (1) and 5% level in (3).

4.4 Hausman Test

In order to clarify which model is more appropriate, the random effects model or the fixed effects model, a Hausman test was conducted.

Table 7: Hausman test result

	Health care	Financial	Health care & Financial
<i>Chi</i> ²	101.95	72.50	51.71
<i>Prob > Chi</i> ²	0.0000	0.0000	0.0000

Three types of panel data models are commonly used: fixed effects models; random effects models and mixed effects models. In a fixed-effects model, variables do not vary over time, but do vary with individuals. In a random effects model, variables vary not only over time but also with individuals. So, in order to determine the regression model for the study a Hausman test is required. In the results in Table 7, all p-values are less than 0.05, so the original hypothesis is rejected, and the fixed effects model should be used to regress the variables in this study.

5. Conclusions and Future Implication

5.1 Conclusions

This section summarizes the findings of this paper and provides an overview of the relationship between CSR and corporate financial performance in the financial and healthcare sectors in China, as well as recommendations for future corporate implementation of CSR. It also identifies the research theory, methodology and model based on past literature and concludes that the relationship between CSR and corporate performance is negative in companies in the financial and health care sectors and that this relationship is more significant in the health care sector.

5.2 Summarize This Paper and Conclusion

This study examines the impact of CSR on CFP by measuring changes in CSR and corporate financial performance, specifically selecting the financial sector and the healthcare sector. The regression analysis was conducted using panel data, and ROA, ESG, financial leverage (LEV), firm size (SIZE) and board size (BSIZE) were selected as variables, and ESG score was used as a measure to replace CSR of firms. The regression results for the two industries yielded different results, confirming the findings of Scholtens (2008) and Lu *et al.* (2014) et al. that the significance of the effect of CSR on corporate financial performance differs across industries, with the effect of CSR on corporate financial performance being significant in the healthcare industry and indeed insignificant in the finance industry.

The three hypotheses in this paper contribute to this area of research by demonstrating that the relationship between CSR and corporate financial performance is not fixed but can be influenced by different industries and other variables, including time, space, and corporate structure.

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