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The relationship between corporate social responsibility and deferred financial performance: An analysis of Chinese Listed Companies

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ABSTRACT : In recent years, the concept of corporate social responsibility has become popular, more so since the occurrence of the COVID-19 pandemic. Corporate social responsibility has been given added attention, and people pay more attention to the enterprises that do well in corporate social responsibility, however its link to the financial performance of companies is limited. This study uses Chinese A-listed companies to assess the impact of corporate social responsibility on deferred financial performance, using the ordinary least square method. The empirical results show that the implementation of corporate social responsibility has a deferred effect on improving financial performance. Corporate social responsibility may not generate immediate improvements in financial performance, but improvements are observed in a later period. At present, many enterprises are fearful of implementing corporate social since it will increase expenditure. However, the findings in this study show that there is a deferred benefit to enterprises, besides its contribution to society

KEYWORDS - Corporate Social Responsibility, ESG, Finance Performance

I. Introduction

ESG is an investment philosophy that focuses on companies' investments toward the environmental, social and governance factors and is part of sustainable investing. These three core factors are important to investors when measuring corporate sustainability, environmental and social impacts. Although the concept of corporate social responsibility has been widely used in China, some companies are still doubtful about its benefits and are unwilling to invest in this area. However, in recent years, corporate social responsibility in China has greatly improved, and many companies have made great progress in formulating corporate social responsibility strategies. Particularly, the impact of COVID-19 in 2020, have encouraged more people to pay attention to corporate social responsibility and its influence. However, since business operations are primarily based on profits, can the application of corporate social responsibility benefit not only stakeholders, but also improve financial performance?

This article empirically explores whether the relevant theories are applicable to China and provide a reference for companies to fulfill their corporate social responsibilities. This article uses China's A-share-listed companies as a sample for research. Since corporate social responsibility may have a deferred effect on financial performance, we include a further dataset to assess this, in the first and second phase of the test.

II. Literature review

Current research indicates that companies in China and the West tend to favor corporate social responsibility, which has shown to positively affect financial performance. Evidence showed that the establishment of good relationships with stakeholders through corporate social responsibility indirectly contributed to the company's operations. According to the stakeholder theory, companies must not only create value for the company itself, but also create relationships with shareholders, employees, creditors, consumers, the public, government, departments, and suppliers. These related groups will affect the development of the company directly or indirectly. According to the literature review, corporate social responsibility has a certain impact on the operating performance of stakeholders, and most scholars believe that it has a promoting effect. The fulfillment of a corporate social responsibility strategy can create an excellent brand image and increase consumers' loyalty, thereby increasing the market share of the company's products. In the long-term, the company achieves the goal of improving business performance.

Chao et al., (2019) research shows that corporate social responsibility has a positive impact with financial performance and firm value. Franco et. al., (2020) in his study with hotels, found that only through the implementation of corporate social responsibility and establishing strong relationships with stakeholders, the costs spent on same can be converted to benefits. Freeman & Liedtka (1991) found through a long-term study of law and business social ethics that corporate social responsibility is an approach aligned to social requirements, thereby affecting corporate performance and influencing it to impact positively on social responsibility. Li & Hou (2017) using high-tech enterprises, found that corporate social responsibility has a significant role in promoting corporate performance.

Simultaneously, some scholars have studied the intertemporal effects of the two, financial performance and corporate social responsibility. Shen (2010) and Ma (2016) believe that corporate social responsibility is a long-term process, and the benefits of the social responsibility performance of the current year may appear in the following years. However, some research shows that the short-term impact of the two is negative. Further, some scholars have studied the relationship between the two using different theories and methods. Liang & Liu (2017) adopted a new method, the reverse proof method, to explore whether earnings management will be different when companies fail to fulfill their social responsibilities. The results showed that the cost of a company increases with the severity of social responsibility implemented, which proves that corporate social responsibility can improve corporate performance.

Even more, some scholars hold different views, such as, Filbeck & Gorman (2004), who suggest that although the company's environmental protection efforts can promote social or environmental performance, the benefits of environmental protection investment are not enough to compensate for the consumption of internal resources; fulfilling social responsibilities is an unnecessary expense, which will cause waste of resources and costs, and can cause enterprises to lose money. This has a negative impact on the profitability of the company.
This study establishes the following hypothesis:

There is a positive correlation between corporate social responsibility and financial performance, but it may take some time for the benefits to appear.

III. Method

The research design of this study focuses on whether corporate social responsibility has a deferred effect on financial performance, so the degree of progress of corporate social responsibility was added to the variables. We used ordinary least squares to explore the relationship between corporate social responsibility and financial performance. The study design is detailed as follows:

3.1 Sample selection

We used the CSI 300 listed companies in the Shanghai and Shenzhen Stock Exchanges that have been ESG-rated by the China Alliance of Social Value Investment from 2018 to first half of 2020 as our sample group. China Alliance of Social Value Investment (Shenzhen) is referred to as Social Investment Alliance. This is China's first international public welfare platform with the promotion of sustainable finance at its core.

3.2 Data source

The ESG-rating is captured from the Wind database; the related financial data are obtained from the CSMAR database.

3.3 Data processing

Once the data samples were retrieved, it was analyzed for samples with incomplete data. These samples were removed and the dataset further assessed using winsorization to remove extreme values (outliers) from the sample. The total number of samples obtained in the first half of 2020 is 300. In addition, to make allowances for the impact of corporate social responsibility on the deferred effect of financial performance, we separately compiled samples of corporate social responsibility performance in 2018 and 2019, corresponding to the financial performance of the first half of 2020, and processed them with the same steps as above. A total of 248 and 279 samples were obtained respectively.

3.4 Research design

This study uses the ordinary least squares regression model to analyze statistically, the impact of the current corporate social responsibility performance on the current financial performance, and the deferred effect of the previous corporate social responsibility performance on the current financial performance.
The regression model is designed as follows:

$$roa_{it} = \alpha_0 + \alpha_1 esg_{it} + \alpha_2 scale_{it} + \alpha_3 eps_{it} + \alpha_4 ind_{it} + \alpha_5 age_{it} + \varepsilon_{it} \quad \text{(1)}$$

$$roe_{it} = \alpha_0 + \alpha_1 esg_{it} + \alpha_2 scale_{it} + \alpha_3 eps_{it} + \alpha_4 ind_{it} + \alpha_5 age_{it} + \varepsilon_{it} \quad \text{(2)}$$

$$roa_{it} = \alpha_0 + \alpha_1 esg_{it-1} + \alpha_2 prog1y_{it} + \alpha_3 contp1y_{it} + \alpha_4 scale_{it-1} + \alpha_5 eps_{it-1} + \alpha_6 ind_{it-1} + \alpha_7 age_{it-1} + \varepsilon_{it} \quad \text{(3)}$$

$$roe_{it} = \alpha_0 + \alpha_1 esg_{it-1} + \alpha_2 prog1y_{it} + \alpha_3 contp1y_{it} + \alpha_4 scale_{it-1} + \alpha_5 eps_{it-1} + \alpha_6 ind_{it-1} + \alpha_7 age_{it-1} + \varepsilon_{it} \quad \text{(4)}$$

$$roa_{it} = \alpha_0 + \alpha_1 esg_{it-2} + \alpha_2 prog1y_{it} + \alpha_3 contp1y_{it} + \alpha_4 scale_{it-2} + \alpha_5 eps_{it-2} + \alpha_6 ind_{it-2} + \alpha_7 age_{it-2} + \varepsilon_{it} \quad \text{(5)}$$

$$roe_{it} = \alpha_0 + \alpha_1 esg_{it-2} + \alpha_2 prog1y_{it} + \alpha_3 contp1y_{it} + \alpha_4 scale_{it-2} + \alpha_5 eps_{it-2} + \alpha_6 ind_{it-2} + \alpha_7 age_{it-2} + \varepsilon_{it} \quad \text{(6)}$$

Where *i* represents the sample order, *t* represents the first half of 2020, *t*-1 represents 2019, and *t*-2 represents 2018.

3.5 Variable descriptions

3.5.1 Independent variable. The independent variable takes the ROA (roa) and ROE (roe) as substitute variables for financial performance.

The equations for ROA and ROE are as follows:

ROA = net profit / total assets (7)

ROE = net profit/ equity (8)

3.5.2 Dependent variables. The dependent variables are the annual ESG rating by the China Alliance of Social Value Investment of listed companies for 2018 and 2019, progress scores, and whether continuous progress, are added as dependent variables. The dependent variables are defined as follows:

ESG-rating (esg). The rating standards of the China Alliance of Social Value Investment are divided into 10 major levels: AAA, AA, A, BBB, BB, B, CCC, CC, C, and D； and each level from B to AA is fine-tuned with "+" and "-.” There are a total of 20 small levels. In this paper, each level from low to high is used as a substitute score from 1 to 20 for each level.

Whether it is progressing (contp1y). This variable is defined as whether the ESG from 2019 to the first half of 2020 is progressing, expressed as a dummy variable, set to "1" for those who progressed, and set as "0" for no progression.

Continuous progress (contp2y). This variable is defined as whether the ESG from 2018 to the first half of 2020 has continuously improved, expressed as a dummy variable. If there is continuous progression from 2018 to the first half of 2020, it is set to "1”; otherwise, it is "0.”

ESG progress score (prog1y). This ESG score increases or decreases from 2019 to the first half of 2020. Progression is a positive increase, and regression is a negative decrease.

ESG progress score (prog2y). This ESG score increases or decreases from 2018 to the first half of 2020. The progression is positive for increases and the regression is negative for decreases.

3.5.3 Control variable. This study uses the company scale, earnings per share, the industry category and company age as control variables.

Company scale (scale). The total assets as a substitute variable for company scale is too large compared to the other variables. In order to reduce the absolute value of the data without changing the nature and correlation of the data, the natural logarithm is used.

Earnings per share (eps). The higher the company’s earnings per share, the better the profitability. Therefore, this study uses earnings per share as one of the control variables. The calculation formula for earnings per share is net profit at the end of the period/total equity at the end of the period.

Industry category (ind). The sample companies include diversified industries and the industry characteristics of the information technology industry fluctuate significantly in financial performance relative to other industries. Therefore, this study sets the industry category as a dummy variable and the electronic industry as "1," while the non-electronic industry is set to "0.”

Years of establishment of the company (age). The brand effect and operational efficiency is affected the longer the company has been established in the industry. This will have a considerable impact on the financial performance of the company, so the company age is used as one of the control variable.

IV. Result

Tables 1 to 3 are the descriptive statistics samples for the first half of 2020, 2019, and 2018, and the samples after removing extreme values.

Table 1 The descriptive statistics for the first half of 2020 (N=300)

Variables	Min.	Max.	Ave.	Std.
roa	-4.24	13.46	2.61	3.14
roe	-12.05	22.39	5.75	5.34
esg	1.00	31.00	24.66	5.16
scale	13.26	21.65	16.14	1.80
ind	0.00	1.00	0.13	0.34
age	7.32	36.27	21.39	5.91
eps	-0.67	3.41	0.48	0.63

Note：roa is return on assets；roe is return on equity；esg is ESG-rating；contp1y is whether got progress from 2019 to the first half of 2020；contp2y is whether got progress from 2018 to the first half of 2020 continuously; prog1y is the score increase or decrease from 2019 to the first half of 2020; prog2y is the score increase or decrease from 2018 to the first half of 2020; scale is company scale; eps is earnings per share; ind is industry category; age is the company age.

Table 2 The descriptive statistics of 2019 (N=279)

Variables	Min.	Max.	Ave.	Std.
roa	-6.63	16.70	2.53	3.20
roe	-25.60	38.22	5.61	5.79
esg	1.00	31.00	24.96	4.08
prog1y	-27.00	27.00	-0.22	4.65
contp1y	0.00	1.00	0.66	0.47
scale	13.17	21.83	16.13	1.78
eps	-5.24	32.80	1.14	2.33
ind	0.00	1.00	0.13	0.34
age	4.82	40.94	21.01	6.00

Note: the definition of the variables refers to Table 1.

Table 3 The descriptive statistics of 2018 (N=248)

Variables	Min.	Max.	Ave.	Std.
roa	-3.74	13.46	2.42	3.01
roe	-12.09	20.41	5.53	5.01
esg	1.00	31.00	23.46	7.09
prog2y	-3.00	29.00	1.90	6.38
contp2y	0.00	1.00	0.57	0.50
scale	13.19	21.54	16.18	1.80
eps	0.00	5.92	0.96	1.07
ind	0.00	1.00	0.11	0.31
age	9.09	35.02	20.25	5.63

Note: the definition of the variables refers to Table 1.

It can be seen from Table 1 to Table 3 that most of the samples are abnormally distributed, so it should be reasonable to use winsorization to delete extreme values. Next, the empirical results of ordinary least square are shows as table 4 to 6.

Table 4 The empirical result of model (1) and (2)

	ROA (model (1))		ROE(model (2))	
Variables	t	p	t	p
con_	11.04	0.00***	4.63	0.00***
esg	1.38	0.17	1.15	0.25
scale	-11.42	0.00***	-4.02	0.00***
eps	15.77	0.00***	15.88	0.00***
ind	2.18	0.03**	0.55	0.59
age	-1.41	0.16	-0.89	0.37
Adj-R^2	0.587		0.486	
N	300		300	

Note 1: p<=0.01 shows ***, 0.01<p<=0.05 shows **, 0.05<p<=0.1 shows *。

Note 2: the definition of the variables refers to Table 1.

The empirical results in Table 4 show that the performance of corporate social responsibility in the current period has no significant impact on the company's ROA and ROE.

Table 5 The empirical results of model (3) and (4)

	ROA (model (3))		ROE (model(4))	
Variables	t	p	t	p
con_	5.77	0.00***	1.27	0.21
Esg	3.76	0.00***	3.11	0.00***
prog1y	0.42	0.67	1.07	0.29
contp1y	1.85	0.07*	1.57	0.12

Scale	-8.11	0.00***	-2.40	0.02**
Eps	7.76	0.00***	5.74	0.00***
Ind	3.57	0.00***	1.75	0.08*
Age	0.35	0.73	0.42	0.67
Adj-R^2	0.394		0.172	
N	279		279	

Note 1：p<=0.01 shows ***, 0.01<p<=0.05 shows **, 0.05<p<=0.1 shows *。

Note 2：the definition of the variables refers to Table 1.

Table 5 shows the impact of corporate social responsibility in 2019 on the ROA and ROE in the first half of 2020. It can be seen from Table 5 that the performance of corporate social responsibility in 2019 has a positive impact on the return on assets and return on equity in 2020. This means that corporate social responsibility performance has a deferring effect on corporate profitability. It is also worth noting that if the ESG-rating in 2019 is better than the first half of 2020, it will have a positive impact on ROA and ROE, rather than depending on the increased score.

Table 6 The empirical results of model (5) and(6)

	ROA (model (5))		ROE (model (6))	
Variables	T	p	t	p
con_	5.36	0.00***	1.51	0.13
Esg	2.54	0.01***	2.38	0.02**
prog2y	1.90	0.06*	2.24	0.03**
contp2y	0.85	0.39	1.12	0.27
Scale	-7.00	0.00***	-2.08	0.04**
Eps	6.46	0.00***	3.98	0.00***
Ind	2.42	0.02**	1.01	0.31
Age	0.47	0.64	0.40	0.69
Adj-R^2	0.348		0.104	
N	237		237	

Note 1：p<=0.01 shows ***, 0.01<p<=0.05 shows **, 0.05<p<=0.1 shows *。

Note 2：the definition of the variables refers to Table 1.

Table 6 shows the impact of corporate social responsibility in 2018 on the return on total assets, return on equity and earnings per share in the first half of 2020. The empirical results show that the performance of corporate social responsibility in 2018 still has a deferred effect on the increase in the return on total assets and the return on net assets. However, due to the longer period, the improved score has a greater impact on the increase in profitability in 2020. Therefore, it just keeps improving to increase financial performance.

V. Conclusion

5.1 Theoretical implications

This study explores the relevance of corporate social responsibility to a company's financial performance in an empirical way, and tests the effects of corporate social responsibility on the current period, on one-period deferred and on two-period deferred respectively. The research finds that:

1. Corporate social responsibility performance does not have any impact on the current year financial performance.
2. Corporate social responsibility performance has a positive and significant deferral effect on the financial performance of the first and second periods. These results are in alignment with most of the previous research results in relevant domestic and foreign research literature (Ma, 2019; Jin, 2018).
3. Once the performance of corporate social responsibility is better than the previous period, regardless of the progress score, it can contribute to the improvement of financial performance. As time goes by, the extent of progress has to be significantly increased to have a positive impact on the financial performance.

5.2 Practical implications

At present, there are still some companies that are unwilling to bear the seemingly additional costs of corporate social responsibility strategies, but this study has proved from empirical analysis that corporate social responsibility contributes to the improvement of financial performance, and the progress and extent of corporate social responsibility performance. This is very relevant to the improvement of financial performance. Although each company has different capabilities to implement social responsibility, once progress can continue, the effect of financial performance improvement will become more and more obvious. Therefore, the research findings of this study can also be helpful for the improvement of corporate social responsibility awareness. More companies will continue to realize the importance of corporate social responsibility and continuous progress as very important factors. Once a company has formulated a corporate social responsibility strategy, it must continue to do so. Especially now, after the COVID-19 pandemic, where social resources are in short supply and people pay more attention to the contributions that companies make to society. Companies with outstanding social contributions are more likely to be acknowledged and recognized by people. Corporate social responsibility can greatly improve a company's image. This article can provide opinions and references for companies to formulate management and social responsibility implementation strategies.

5.3 Research limitations

This study uses the rating standards of the China Alliance of Social Value Investment in the Wind database. However, there are currently more than one domestic institution that conducts social responsibility ratings, such as SynTao Green Finance, Sino- Securities and others. This article cannot include all the ratings.

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