

Will Corporate Social Responsibility Discourage Inefficient Investment? An Empirical Research based on Chinese Listed Companies

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Keywords: Corporate Social Responsibility, Overinvestment, Underinvestment.

Abstract. Based on the non-financial listed companies of Shanghai and Shenzhen A-shares from 2010 to 2017, this paper studies the relationship between corporate social responsibility and non-efficiency investment behavior based on stakeholder theory and signal transmission theory. The study found that corporate social responsibility can effectively improve investment efficiency, not only reduce overinvestment but also alleviate underinvestment; further research found that the higher the competitive position of enterprises in the industry, the stronger the improving effect of social responsibility on investment efficiency. This study provides empirical evidence for the economic consequences of corporate social responsibility.

Introduction

Since the *Third Plenary Session* of the 18th *CPC Central Committee*, the government has listed *CSR* as one of the six major corporate priorities in a document for the first time, stressing the importance of *CSR*. In recent years, the field of social responsibility has been a hot topic. Many CEOs believe that corporate social responsibility is an important factor to ensure the success of their companies in the future. Therefore, enterprises not only face market competition, but also increase the competition of social responsibility. Corporate social responsibility activities have become an inevitable part of corporate resource consumption. Based on this background, research related to corporate social responsibility has gradually become the focus of academic circles at home and abroad. Existing researches focus on the economic consequences brought by social responsibility information disclosure, such as reducing financial financing costs and enhancing corporate value [1]. Research shows that enterprises actively fulfill their social responsibilities and disclose relevant information, which can effectively improve the efficiency of information communication and alleviate the problem of information asymmetry. As for the problems caused by information asymmetry, the most common problem is the inefficient investment behavior of listed companies. At present, many scholars have found that the quality of accounting information has an important impact on investment efficiency. Does social responsibility information as non-financial information have a governance effect on non-efficiency investment? As a result, we focus on the relationship between corporate social responsibility and inefficient investment, and on this basis, further explores the impact of the industry's competitive position on the relationship between the two, which is conducive to encouraging them to actively take on their responsibilities, while enriching the suppression of non-efficiency investment way.

Theoretical Analysis and Hypotheses

Neoclassical theory holds that enterprises should implement all positive *NPV* projects and abandon all negative *NPV* projects. However, friction in the capital market may cause enterprises to deviate from optimal investment. According to previous literature, the main causes of underinvestment are information asymmetry and financing constraints. In the asymmetric information environment, adverse selection will occur when investors in the market lack sufficient understanding of the company or project. The larger the external financing gap of enterprises, the more serious the

situation of insufficient investment of enterprises will be [2]. As for excessive investment, domestic and foreign scholars have shown that it is mainly caused by agency problems. Moral hazard occurs when managers or controlling shareholders make investment decisions that harm shareholders' interests out of selfish motives. The consequence is excessive investment. If enterprises actively fulfill their social responsibilities and can effectively alleviate information asymmetry and agency problems, it will be conducive to inhibiting inefficient investment behavior.

Firstly, as an important non-financial information, CSR information disclosure can effectively reduce information asymmetry and have information effect. On the one hand, enterprises choose to disclose more information about their extra-financial activities to enable institutional investors to have a better understanding of the profitability and growth opportunities of the company, so as to obtain complete and true information at the company level and reduce the information asymmetry between the company and its non-financial stakeholders. On the other hand, CSR related information can be used as an alternative and supplement for financial information to improve the information transparency of enterprises[3].

With the "information effect", corporate social responsibility information disclosure plays a signaling role and produces a "reputation effect", thus forming more social capital and easing financing constraints[4-6]. If the company discloses relevant information and transmits signals of fulfilling social responsibility to the outside world, it can reduce the cost of obtaining information from stakeholders such as shareholders and creditors, so that investors can have a more comprehensive understanding of the development and operation of the company, and can also enhance external investment. The confidence of the company and the financing assistance of creditors and equity investors[7].

Based on the stakeholder theory, enterprises that actively fulfill their social responsibilities pay attention to maintaining the relationship among various stakeholders. Therefore, enterprises will pay attention to protecting the interests of small and medium shareholders, help ease the conflicts of interest between controlling shareholders and other shareholders, and reduce agency problems. At the same time, the active social responsibility activities of enterprises can limit some of the remaining free cash flow, which limits the possibility of short-term opportunistic behavior of managers, and the behavior of controlling shareholders and managers will be restrained and supervised [8]. Accordingly, our first and main hypothesis is as follows:

H1 Corporate social responsibility performance can improve investment efficiency

Enterprises are investment decisions made in the overall environment of market competition. In companies with different competitive advantages, investment behavior will also vary greatly. According to the theory of signal transmission, enterprises that gain competitive advantage in product market often have stronger motivation to improve the transparency of enterprise information to reduce the information asymmetry with capital market and potential investors. Enterprises with competitive advantages will be subject to more pressure of public opinion and institutional supervision. Faced with these pressures, whether voluntary or mandatory disclosure, enterprises will have higher requirements on the quality of their social responsibility reports. Enterprises will also take the initiative to fulfill corporate social responsibility, so enterprises will invest more in social responsibility activities. Although the fulfillment of social responsibility activities will inevitably occupy enterprise resources, enterprises with competitive advantages often have more resources, therefore, the crowding-out effect of social responsibility activities on business performance is small. However, enterprises at competitive disadvantage often face higher financing constraints. With limited corporate resources, participating in social responsibility activities will be limited, so the signal transmission function of social responsibility information disclosure will also be weakened. This is consistent with our last hypothesis:

H2 Compared with enterprises with low competitive position in the industry, the higher the competitive position in the industry, the stronger the improving effect of corporate social responsibility on investment efficiency.

Research Design

Sample Selection

This paper selects the A-share listed companies in Shenzhen and Shanghai from 2010 to 2017 as the total sample, excluding companies with special treatment in the financial and insurance industries, ST and *ST categories and incomplete data, and the total observed values of the final samples were 14150. In addition to the corporate social responsibility data from the HeXun, the rest of the data comes from the Guotaian database. In order to eliminate the influence of extreme values, we reduce the tail of continuous variables at the levels of 1% and 99%, and finally obtain the basic data of this empirical study.

Variable Measurement and Empirical Models

Measurement of Inefficient Investment

To identify the inefficient investment, this paper mainly uses *Richardson* (2006) to predict investment efficiency through model 1:

$$Invest_{i,t} = \beta_0 + \beta_1 Grow_{i,t-1} + \beta_2 Size_{i,t-1} + \beta_3 Lev_{i,t-1} + \beta_4 Cash_{i,t-1} + \beta_5 Age_{i,t-1} + \beta_6 R_{i,t-1} + \beta_7 Invest_{i,t-1} + \sum Industry + \sum Year + \varepsilon. \quad (1)$$

Invest equal to the total investment is the “cash paid for the purchase and construction of fixed assets, intangible assets and other long-term assets” in the t-period cash flow statement minus the “net cash received from disposal of fixed assets, intangible assets and other assets” divided by initial assets. *Grow* equals the rate of main business income. *Size* equals the company size. *Lev* equals the asset-liability ratio. *Cash* equals the level of cash holdings of an enterprise. *Age* equals the company age. *R* equals return on equity.

Measurement of Corporate Social Responsibility

We obtain *CSR* data from the *HeXun* professional evaluation system for social responsibility report of listed companies. This paper uses the methods of other scholars to measure the performance of social responsibility and uses the social responsibility performance rating data to measure the fulfillment of social responsibility

Measurement of Industry Competitive Position

This paper mainly uses *Campello* (2006) to define the competitive position of the industry through model 2:

$$\Delta \log(sales)_{i,t} = Grow_{i,t} - Median_{industry,t}\{Grow_{i,t}\} \quad (2)$$

As we according to $\Delta \log(sales)$ is greater than zero setting dummy variable *CP*, when as $\Delta \log(sales)$ is greater than zero indicates that the company's main business revenue growth than industry median income growth, competitive position is higher, *CP* dummy variable assignment is 1, otherwise the value is 0.

Control Variables

Through the reference investment efficiency literature, we select some variables mentioned in the study as control variables. As a proxy for firm size(*Size*), we use natural log of total assets at the end of the period; the level of earnings(*ROA*) represents net profit divided by total assets; enterprise Growth(*Grow*) is calculated as the *Grow* rate of main business income; asset-liability ratio(*Lev*) is calculated as total liabilities divided by total assets; free cash holdings(*CFlow*) is calculated as net

cash flow from operations divided by total assets at the beginning of the period; age(*Age*) is measured as company listing age; degree of equity balance(*PB*) we define it as 1 when *S* is greater than the mean, or 0 when *S* is greater than the mean; shareholding ratio of the largest shareholder(*FSHP*). We also added *Year* and *Industry* control dummy variables.

Model Specification

The model we suggest to test the effect of *CSR* on inefficient investment is as follow:

$$Inv_{i,t}(OverInv, UnderInv) = \beta_0 + \beta_1 CSR_{i,t} + \beta_2 Size_{i,t} + \beta_3 Lev_{i,t} + \beta_4 CFlow_{i,t} + \beta_5 Age_{i,t} + \beta_6 Grow_{i,t} + \beta_7 Roe_{i,t} + \beta_8 Ind_{i,t} + \beta_9 PB_{i,t} + \beta_{10} FSHP_{i,t} + \sum Industry + \sum Year + \epsilon_{i,t} \quad (3)$$

Where *Inv* is the absolute residuals from the investment model. *OverInv* represents the absolute value of the residual is greater than 0; *UnderInv* represents the residual is less than the absolute value of 0.

Empirical Results

Descriptive Statistics

Table 1 is the descriptive statistical table of all samples after pretreatment. The average value of investment efficiency is 0.050, the maximum value is 0.980, and the standard deviation is 0.070, indicating that China does have problem of investment efficiency. Underinvestment accounts for about 65% of, indicating that the problem of Underinvestment in Chinese enterprises is more common. The average value of *CSR* performance is 27.72, the maximum value is 90.87, and the minimum value is -18.15, indicating that most listed companies in China fulfill *CSR*, but there is still a lot of room for improvement.

Table 1. Descriptive statistics

	N	Mean	SD	Median	Min	Max
Inv	14150	0.0500	0.0700	0.0300	0	0.980
OverInv	4936	0.0700	0.100	0.0400	0	0.980
UnderInv	9214	0.0400	0.0300	0.0300	0	0.420
CSR	14150	27.72	18.65	22.45	-18.15	90.87
ROA	14150	0.0400	0.0400	0.0300	-0.110	0.170
Grow	14150	0.130	0.280	0.110	-0.640	1.160
Lev	14150	0.450	0.200	0.450	0.0700	0.860
CFlow	14150	0.0500	0.0800	0.0500	-0.190	0.280
Age	14150	2.340	0.600	2.480	1.100	3.330
Size	14150	22.29	1.300	22.11	18.65	28.51
PB	14150	0.440	0.500	0	0	1
FSHP	14150	35.07	15.25	33.10	0.290	89.99
CP	14150	0.500	0.500	1	0	1

This paper analyzes the inefficient investment, corporate social responsibility and various control variables. As we can see from table 2, the correlation coefficient between *CSR* and investment inefficiency is significant. The hypothesis of hypothesis 1 is preliminarily verified.

Table 2. Pearson correlation coefficients between the variables

	Inv	CSR	ROA	Grow	Lev	CFlow	Age	Size	PB	FSHP	CP
Inv	1										
CSR	-0.047***	1									
ROA	0.037***	0.371***	1								
Grow	0.225***	0.086***	0.248***	1							
Lev	-0.056***	0.044***	-0.362***	0.035**	1						
CFlow	0.120***	0.156***	0.411***	0.096***	-0.171***	1					
Age	-0.086***	0.052***	-0.130***	-0.097***	0.342***	-0.013	1				
Size	-0.039***	0.325***	-0.019**	0.058***	0.517***	0.023***	0.304***	1			
PB	0.082***	0.022***	0.095***	0.099***	-0.104***	0.033***	-0.258***	-0.015*	1		
FSHP	-0.022**	0.142***	0.082***	-0.002	0.113***	0.076***	-0.028***	0.252***	-0.320***	1	
CP	0.119***	0.094***	0.212***	0.656***	0.024**	0.071***	-0.125***	0.051***	0.090***	-0.012	1

Note:***, **, and* denote statistical significance at the 1,5, and10% levels, respectively, the same below

Empirical Evidence

Table 3 (1)-(3) shows the regression results. We conducted regression analysis on the full sample and the overinvestment and underinvestment subsamples respectively. In the regression results of the sample, CSR coefficient is significantly negatively correlated, indicating that enterprises' fulfillment of social responsibility can effectively inhibit inefficient investment behavior. And CSR has double governance effect, which inhibits both overinvestment and underinvestment. This proves that hypothesis H1, corporate social responsibility can effectively improve investment efficiency.

Table 3. Corporate social responsibility and inefficient investment

	(1) Total Simple	(2) Overinvestment	(3) Underinvestment	(4) High competitive position	(5) Low competitive position
CSR	-0.000*** (-5.80)	-0.000*** (-3.56)	-0.000*** (-6.19)	-0.000*** (-3.52)	-0.000*** (-3.15)
ROA	-0.104*** (-5.62)	-0.284*** (-5.74)	0.004 (0.46)	-0.136*** (-4.89)	-0.001 (0.75)
Grow	0.052*** (12.42)	0.109*** (12.00)	0.004*** (2.77)	0.099*** (25.28)	-0.013*** (-4.25)
Lev	-0.006 (-1.40)	0.006 (0.45)	-0.010*** (-5.05)	-0.003 (-0.50)	-0.002 (-0.54)
CFlow	0.083*** (7.56)	0.179*** (7.14)	-0.025*** (-6.19)	0.133*** (11.81)	0.017** (2.30)
Age	-0.006*** (-4.92)	-0.008*** (-2.75)	-0.005*** (-8.48)	-0.009*** (-5.02)	-0.006*** (-5.66)
Size	-0.000 (-0.02)	-0.001 (-0.55)	-0.003*** (-8.27)	0.004*** (3.55)	-0.002*** (-4.15)
PB	0.007*** (5.62)	0.011*** (3.56)	0.002*** (3.30)	0.009*** (4.50)	0.003*** (2.85)
FSHP	0.000 (0.88)	0.000 (1.05)	0.000 (1.18)	0.000 (0.91)	-0.000 (-0.50)
_cons	0.050*** (4.09)	0.059** (2.11)	0.111*** (15.87)	-0.045** (-2.13)	0.102*** (9.24)
Year	Yes	Yes	Yes	Yes	Yes
Ind	Yes	Yes	Yes	Yes	Yes
N	14150	4936	9214	7061	7089
R2	0.101	0.180	0.127	0.152	0.065
Adj.R2	0.098	0.174	0.123	0.148	0.060

Table3 (4) and (5) shows the test results of hypothesis 2. In this paper, the samples are divided into groups with highly competitive status and low competitive status. In the sub-sample group with high industry competitive status, the CSR coefficient was significantly negatively correlated, and the t value was 3.52, which was higher than the group with low industry competitive status (significant at the level of above 1%), and the SUEST test showed a significant difference at the level of above 5%. The above evidence supports the establishment of hypothesis 2. The higher the company's status, the stronger the signaling effect of social responsibility will be, thus reducing information asymmetry and improving investment efficiency.

Conclusion

This paper takes China's listed companies as research samples to carry out empirical research on the relationship between CSR and investment efficiency. Research shows that corporate social responsibility can improve investment efficiency, which has a dual governance role.

For the research conclusions of this paper, we propose the following policy suggestions. On the one hand, enterprises should improve their ability to fulfill social responsibility, incorporate social responsibility into their strategies, put the concept of social responsibility into practice, and give play to its governance role in investment efficiency. On the other hand, the government should formulate relevant policies to improve the attention of enterprises on social responsibility, and meanwhile, a social responsibility assessment mechanism with the government as the main body should be established to make enterprises' social responsibility activities play a real role. And corporate social responsibility activities as the carrier of signal transmission is the social responsibility report, so in terms of social responsibility information disclosure, market regulators can try to introduce more authoritative information disclosure rating system, improve the quality of social responsibility information disclosure and influence, the social responsibility of investment behavior play a more important role in governance.

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