

## **Empirical Analysis of the Influence of Corporate Social Responsibility on Stock Value**

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**Abstract:** In the paper, taking one thousand two hundred and ninety quoted companies of Shanghai A-share in China from 2012 to 2016 as research samples, the writer reorganizes the data that enterprises perform social responsibilities for different stakeholders, and uses factor analysis, regression analysis and other methods to expound the influence of corporate social responsibility on stock value. The research results show that there is a positive correlation between corporate social responsibility and stock value; however, correlation coefficient is relatively small; from the angle of different industries, share prices have different sensitivities on corporate social responsibilities. Enterprises as the main social economies should fulfill social responsibilities and establish a favorable corporate image, so as to obtain greater opportunities to raise funds and achieve enterprise goals, at the same time, by doing so, enterprises can be given a much greater motivation to fulfill social responsibilities so as to achieve a virtuous circle of mutual benefit and win-win results.

**Keywords:** *Social Responsibility, Stock Value, Industry Classification*

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### **I. INTRODUCTION**

With the development of market economy and the perfection of legal systems, corporate social responsibility (Abbreviation: CSR) gradually received widespread concern of society and attention of enterprises. As the main social economies, bearing social responsibilities is not only missions that enterprises must fulfill, but also a constraint of morality and public opinions. At present, with the advent of We-Media's age, the exposure rate and transparency of events have been greatly improved; the extent of corporate social responsibility affects its own corporate image. A lot of enterprises pursue benefits to strengthen them by ignoring social responsibility, touching the bottom line of morality and law simultaneously, such as the hidden dangers of food, damages to the rights and interests of employees, tax evasion, and environmental pollution and so on, which brought bad influence or even harm to consumers, employees, government, and society. Of course, as the initiator of evil, enterprises also reaped that one has sown, and its foundation was destroyed on one day. Corporate social responsibility should not be ignored, and many scholars also paid their attention on social responsibility which has non-financial performance. On December 2007, State Grid issued the first guide book for the performance of social responsibility in China; in 2011, Chinese Academy of Social Sciences conducted the centesimal system score for enterprises in China. In the past ten years, the number of reports on corporate social responsibility in China has continued to grow, and corporate social responsibility was paid more and more attentions. Under this background, in this paper, the writer conducts the research on corporate social responsibility and stock value. In the paper, taking one thousand two hundred and ninety quoted companies of Shanghai A-share in our country from 2012 to 2016 as research samples, the writer uses factor analysis, regression analysis to expound the influence of corporate social responsibility on stock value so as to reflect the relationship between corporate social responsibility and enterprise goals.

### **II. ANALYSIS AND ASSUMPTION**

The concept of corporate social responsibility was proposed for the first time in the 20s in the United States. Starting in 1950s, scholars at home and abroad have begun to conduct researches on corporate social responsibility gradually, but for the influence of social responsibility on stock value, they had different conclusions and there was no definite conclusion. Frooman used quantitative analysis method to study the reflection of stock market on that enterprises did not fulfill their social responsibilities. The results showed that stock market had a corresponding reflection on that whether enterprises fulfill their social responsibilities or not and the two were positively correlated, at the same time, there was a significant positive correlation between

corporate social responsibility and financial performance [8]. The research of Seoki Lee and Sun-Young Park showed that the correlation between social responsibility and stock value was affected by industry differences. In hotel industries, there was a significant positive correlation between them, but in other industries the correlation was not so notable [7]. Shen Hongtao and Yang Yi studied the relationship between CSR and the change of stock prices. In this research, they took A-share listed companies as samples, and selected the data of petrochemical industries from 1999 to 2001. And the results showed that there was a certain correlation between the two, social responsibilities affected rate of return of stock [3]. Li Zheng tong studied the earnings of CSR from the angle of corporate value, by taking listed companies in Shanghai Stock Exchange as samples, he reached a conclusion that "CSR damages enterprise value" but he did not deny that the long-term investment would have no corresponding returns [5].

By making a comprehensive survey on Chinese and foreign literature, blood donors turned to a empirical analysis from initial descriptive and theoretical analysis, at the same time they paid much more attention on the study of financial performance, and less on the value of enterprises and stock. About corporate social responsibility, the current mainstream theory is Stakeholder Theory, which holds that the development of any company cannot be without the input or participation of various stakeholders. What enterprise pursues is the overall interest of stakeholder, not just the interests of certain subjects. Stakeholders include shareholders of an enterprise, creditors, employees, consumers, suppliers and other trading partners and pressure groups such as government and society and so on, even the objects such as natural environment. Based on this theory, enterprises bear corresponding social responsibility, which will be conducive to establish a good corporate image and then increase the recognitions of investing public so as to promote the rise of stock value. In accordance with the above theory, in the paper, the writer puts forward the following hypothetical view: The first hypothesis: There is a positive correlation on the impact of corporate social responsibility on stock value.

The evaluation object of **Annual Report of Social Responsibility Index of Listed Companies in China** include listed companies on Shanghai Stock Exchange and Shenzhen Stock Exchange, in terms of industry distribution, the evaluation enterprises of **Report** covers eighteen industries. There into, the industry which has the highest concentration degree is manufacturing industry, followed by information transmission, software and information technology services wholesale and retail industries, and the real estate industry respectively. However, the scores of other industries are relatively lower. In terms of social responsibility, the social responsibilities of high risk and high energy-consuming enterprises are much higher than other industries. Therefore, the assumption can be drawn as following: The second hypothesis: Corporate social responsibility in different industries has different impacts on stock value.

### **III. RESEARCH DESIGN**

No.1: The source of samples and data. In this paper, taking one thousand two hundred and ninety quoted companies of Shanghai A-share in our country from 2012 to 2016 as research samples, the writer eliminates enterprises which have incomplete data of corporate finance. The data of corporate social responsibility is from financial reports of enterprises, and reports of social responsibility, the data of corporate stock value is from Choice financial terminal of Oriental Wealth Net. Excel and SPSS are mainly used for data processing.

No.2: Variable Interpretation

(1) Independent Variable: corporate social responsibility (CSR). The indicators to measure corporate social responsibility are monetary and non-monetary indicators, and there is no uniform indicator yet. An objective and pertinent CSR Report determines the credibility of report. Although the number of reports issued is increasing, and the content is also transparent, there is still a situation of reporting only what is good while concealing what is unpleasant. At the same time, the grade of non-monetary indicators has certain subjectivity and some differences in measurement standard, which will cause that the index is not objective and fair. In this paper, from the angle of stakeholders, the writer selects financial data about the responsibility of enterprises on seven stakeholders from the three statements to serve as the standard to measure corporate social responsibility.

(2) Control variable. The scale of an enterprise plays a decisive role in the size of corporate social responsibility, the larger the scale is, and the greater the corresponding responsibility is. The growth and risk-taking capacity of enterprises determine the quality of enterprises to undertake social responsibility. The companies with rapid growth and strong risk capacity certainly will have a better ability to fulfill social responsibilities. Therefore, three control variables are introduced in this paper: enterprise scale (total assets), year-on-year growth rate of operating income and asset-liability ratio.

(3) Dependent variable. Annual closing price is selected as the dependent variable in the paper to reflect the stock value.

A detailed explanation of the above variables is shown in table 1:

**Table 1: Variable definition**

Variable type	Variable description	Scalar symbol	Definition
Stock value	Annual closing price	P	Annual closing price of listed companies
Corporate Social Responsibility CSR	Social responsibility to shareholders	Earnings per share X1	Net profit / common stock
		Price earnings ratio X2	Market price per share / earnings per share
	Social responsibility to customers	Income cost ratio X3	Main business cost / main business income
	Social responsibility to creditors	Interest coverage ratio X4	earnings before interest and tax / interest expense
	Social responsibility for suppliers	Accounts receivable turnover ratio X5	Operating costs / accounts payable
	Social responsibility to employees	Employee salary accounting for income ratio	Cash and earnings paid to employees/ operating income
	social responsibility to government	The actual tax accounting for income ratio X7	Current actual tax payment / operating income
	Social responsibility for society	The donation expenditure accounted for revenue ratio X8	Donations / operating income
Control Variable	Enterprise scale	S	Ln (total assets)
	Growth	G	Year-on-year growth rate of operating income
	Financial risk	R	asset-liability ratio(liabilities / assets)

NO.3: Model Specification According to the previous research hypothesis, the model is constructed in this paper as follows:  $P = a + \alpha_1 CSR + \alpha_2 S + \alpha_3 G + \alpha_4 R + e$ , there “e” is an interference term.

#### IV. EMPIRICAL ANALYSIS

##### No.1: Factor Analysis

Through seven dimensions which are used to measure corporate social responsibility, the factor analysis is conducted. The sphericity test of Bartlett is less than 0.0001; therefore, it can be considered that the correlation matrix has a significant difference from identity matrix. At the same time, the value of KMO is 0.553, according to the metric standard of KMO provided by Kaiser, we can know that the original variables are suitable for factor analysis. The results of “The test of KMO and Bartlett” are shown in table 2.

**Table 2: The test results of KMO and Bartlett**

To sample Kaiser-Meyer-Olkin with enough degree to measure	0.553
Sphericity test of Bartlett approximate chi-square	406.229
DF	10
Sig	000

The principal component factor analysis are used in this paper, and from the seven dimensions to measure corporate social responsibility, according to the analysis results, we can find that the characteristic value of the former four factors are all more than one, and the cumulative variance contribute rate is 85.437% which is higher than 85%, and it shows that the extraction of these main four elements can cover the information contained by these seven dimensions. The cumulative variance contribute rate after factor rotation is shown in table 3. The scoring coefficient matrix of principal component is shown in table 4.

**Table 3: The result of cumulative variance contribute rate after factor rotation**

Rotation Quadratic Sum Loading		
Total	Variance (%)	Accumulative Total (%)
1.259	25.186	25.186
1.006	20.126	45.313
1.005	20.102	65.415
1.001	20.022	85.437

**Table 4: The scoring coefficient matrix of principal component**

	Component			
	One	Two	Three	Four
Earnings per share	0.742	-0.078	0.132	-0.198
Income cost ratio	0.107	0.707	-0.688	0.041
Turnover rate of accounts payable	-0.083	0.697	0.695	0.151
Interest coverage ratio	0.556	-0.110	-0.027	0.810

Extraction method: principal component.A. Four components have been extracted.Combining with table 3 and table 4, we can structure calculation equations for four factors, the four principal components are expressed as M1, M2, M3, M4. With their respective variance contribution rate as key point, the scoring equation of corporate social responsibility can be obtained:

CSR= (M1\*25.185%+M2\*20.126%+M3\*20.102%+M4\*20.022%) /85.437%.No.2: An empirical analysis of corporate social responsibility and stock valueFirst of all, we conduct descriptive statistics on all samples. After removing incomplete and extremely unusual financial data samples, there are three thousand eight hundred and eighty-one samples, and the results of descriptive statistics are shown in table 5. From it, we can find that the undulatory property of CSR index is relatively big, the standard deviation is 13.5, and there is a great difference between the maximum and the minimum. This shows that the performance degrees of social responsibility of Shanghai A-share enterprises are irregular, and it needs further regulation. However, the three control variable is relatively stable, samples are relatively balanced: the minimum standard deviation of asset-liability ratio is 0.8, the differences in samples are not large; the standard deviation of natural logarithm in total assets is 1.46, numerical value is stable; the standard deviation of increase rate of business revenue is 1.93, relative to the other two control variables, its fluctuation is relatively large.

**Table 5 Descriptive analysis of sample capacity**

Variable Quantity	Mean value	Standard deviation	Maximum value	Minimum value
CSR	0.15	13.50	24.70	-21.19
LN(Total Assets)	2.68	1.46	28.50	17.05
Increase rate of business revenue	0.15	1.93	7.120	-0.97
Asset-liability ratio	0.46	0.80	1.86	0.08

Secondly, linear regression is conducted on all samples; the results show that CSR have significant positive correlation with stock value under the 95% reliability, but correlation coefficient is smaller than the other three control variables. Coefficient results are shown in Table 6.

**Table 6: Coefficient results**

Model		Non standardized			T	sig
		coefficient	Standard Error	standardized coefficient		
1	Constant	38.705	2.596		4.919	0.000
	Total Assets	-1.065	0.114	-0.130	9.325	0.000
	Increase rate of business revenue	0.004	0.001	0.053	0.833	0.000
	Asset-liability ratio	-0.005	0.003	-0.026	1.825	0.068
	CSR	0.001	0.002	0.001	0.054	0.047

Dependent variable: annual closing priceFinally, regression analysis was carried out on four industries which have higher concentration in the assessment of corporate social responsibility, these four industries are manufacturing industry, information transmission and software and information technology services, wholesale and retail industries, and the real estate industry. The regression coefficients are shown in table 7. From the regression results, we can find that the impact of corporate social responsibility CSR of these four industries on stock value is greater than the whole samples. At the same time, the stock value of these four industries are mainly influenced by assets and corporate social responsibility, and are not sensitive to increase rate of business revenue and asset-liability ratio, and regression results do not show the coefficients. Besides, there is a positive correlation in manufacturing industry, information transmission and software and information technology services, and the correlation coefficient is relatively large; the conspicuousness of positive correlation in the wholesale and retail trade are not strong, but at 90% confidence level, the correlation coefficient is relatively higher; but in the real estate industry is not significant. From this, the different performance degrees of corporate

social responsibility have different impacts on stock value of different industries.

**Table 7: The comparison table of regression coefficients for four major industries**

variable	Full sample		Manufacturing industry		Information transmission and software and information technology services		Wholesale and retail trade		Realty industry	
	coefficient	sig value	coefficient	sig value	coefficient	sig value	coefficient	sig value	coefficient	sig value
Constant	8.705	.000	2.230	.009	10.435	.000	3.973	.010	3.239	.079
CSR	.001	.047	.016	.009	.045	.030	.121	.057	.095	.471
Assets	.065	.000	.480	.037	.001	.094	.114	.003	.002	.977
Asset-liability ratio	0.005	.086	.005	.089						
Increase rate of business revenue	0.004	0.000								

### V. CONCLUSION AND SUGGESTION

In this paper, based on the previous researches and the precondition of the study of all samples, the writer extracts four targeted major industries from sample topics, and tries to study the influence of corporate social responsibility on stock value, as well as the different impact degrees on different industries. The research shows that : (1) For all samples, corporate social responsibility has a significant promoting function to stock value, but the correlation coefficient is relatively small; (2) For manufacturing industry, information transmission, software and information technology services, corporate social responsibility has a much bigger impact on stock value. The R & D and operating costs of these two industries are much higher; Expanding financing resources will be conducive to the development and operation of enterprises and establishing a good corporate image will be helpful to promote enterprise value and the procurability of financing; (3) For retail trading, the correlation is bigger, but not very significant, to some extent, it belongs to a industry with quick returns and small margins. However, corporate social responsibility is also a driving factor to realize enterprise goals; the relationship between corporate social responsibility and stock value in real estate enterprise is not significant.

As an active and sensitive factor in the capital market, the rise and fall of stock value represents the approval level of investing public on the company to some extent, and also reflects the objective evaluation of society on the value of stock right of the companies. At present, the performance degree of corporate social responsibility in China is irregular and has a relatively small influence on the stock value. This shows that the maturity of social responsibility is insufficient, and is needed to develop and perfect in a further step. All above, policy implications from two aspects of micro and macro are obtained: In the micro aspect, for enterprises : (1) Enterprises must understand the importance of corporate social responsibility to enhance their awareness; (2) Enterprises should perfect the management of corporate social responsibility, and formulate the corresponding systems and operation processes to promote the ability to fulfill the responsibilities; (3) Enterprises should actively issue **CSR Report**, whose contents must be true and pertinent. Increasing the transparency of the operation of enterprises, enterprises accept public's supervision so as to enhance the standardization of enterprise's responsibilities; (4) Enterprises bear social responsibilities, and establish a good public image to get more opportunities to raise money. At the same time, it also gives enterprises greater motivation to fulfill their social responsibilities and achieve a virtuous circle of mutual benefit and win-win results. In the macroscopic aspect, in order to promote the investment of social responsibility, besides that the enterprise enhance their own awareness and strengthen the ability to bear the responsibilities, the government should also enhance macroscopic readjustment and control: (1) the government should build a whole atmosphere of public opinion of corporate social responsibility so as to ensure that both enterprises and investors know the important significances of corporate social responsibility; (2) the government should create a good external environment for the performance of corporate social responsibility so as to make sure that these enterprises can realize steady growth in profits and have the value of being invested; (3) the government should create a good investment environment for investors so as to ensure that investors are able to find the enterprises which have a better performance of corporate social responsibility and the value of being invested. There is a long way for corporate social responsibility to go, which needs concerted efforts of the whole society to promote a virtuous circle of mutual benefit and win-win results so as to really make corporate social responsibility be carried out earnestly, and make resources be distributed reasonably.

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