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# *The Impact of CSR on Chinese Economic Development*

**SUMMARY:** As economy is growing, many problems occur, such as environmental problems. Scholars and government officials begin to focus on the corporate social responsibility (CSR). This paper is to study the relationship between corporate social responsibility (CSR) and Chinese economic development (ED), and this paper wants to provide a reference for the government officials in China and the investors in the capital market. This paper takes two separate research steps to achieve the research objective. Firstly, in order to test the relationship between the level of CSR and the economic development, this paper uses independent-samples T test. Secondly, this paper builds multiple variables linear regression models, and uses the SPSS 22 software to analyze the correlation between CSR and Chinese economic development. As a result, this paper finds that a relatively high level of CSR results in a more objective economic development, on the contrary, the economic development of the time when companies are not willing to take on the corporate social responsibility may be very general.

**KEYWORDS:** Social responsibility, Economic development, Correlation analysis, Regression analysis

**JEL CODES:** E01, G39, O16

At the beginning of this century, many environmental cases have a strong impact on investors' confidence in the capital market. After studying many factors of this phenomenon, scholars in the world begin to focus on the corporate social responsibility (CSR).

## BACKGROUND

People start to study and pay attention to the effectiveness and transparency of the corporate social responsibility. Entrepreneurs, research scholars and even the government officials are aware of that a good social responsibility system

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plays an irreplaceable role in nation's economic development (Dawkins Cedric E, 2016).

So far, there is no clear and unified conclusion about the concept of corporate social responsibility in China and abroad, and the connotation of corporate social responsibility is changing with the change of social environment. The concept of social responsibility first appeared in 1924, but at that time, the enterprise managers tried to maximize the profit and basically held a negative attitude to the social responsibility. After the 1960s, the enterprises started to pay attention to profit and social interest, so the connotation of social responsibility had been further extended. Carroll, Archie B (1979) proposes that social responsibility is "the sum of responsibilities taken by enterpris-

es on the social economy, law, morality, and charity”, and this concept is still widely used. After that, the concept of social responsibility is derived from the relevant concepts of social response, public responsibility, corporate social performance, economic ethics, corporate citizenship, social responsibility investment and so on. The book “Strategic Management: A Stakeholder Approach” by Freeman. R. Edward (1984) lays the theoretical foundation of the research for CSR, and solves the problem that there is no theoretical basis for the corporate social responsibility research. Business Dictionary defines CSR as “A company’s sense of responsibility towards the community and environment (both ecological and social) in which it operates. Companies express this citizenship through their waste and pollution reduction processes, by contributing educational and social programs and by earning adequate returns on the employed resources.”

### CSR in America

It starts from USA that making laws and regulations to ensure the implementation of CSR. As early as the beginning of this century, United States requires the administrator of the enterprise to disclosure social responsibility information, and the United States hopes to use mandatory system to resist the increasing serious environmental problems (Kolk Ans, 2016). With the promulgation and implementation of these laws, the social responsibility system has also been recognized by the capital market, and these laws have a significant impact on the other countries in the world.

### CSR in China

In China, the legislation of social responsibility by government that enforces the mandatory

system of social responsibility is only a start. But in the beginning, the laws and regulations relevant to the social responsibility are only implemented in a part of the listed companies in China. And this mandatory system is gradually popularized as the implementation of the “Social Responsibility Guidelines” in 2005. This is a symbol that the disclosure of social responsibility has become mandatory from voluntary, while China’s social responsibility system is also becoming more and more perfect (Jinfu Zhu, 2009).

Immediately after that, in order to further the implementation of social responsibility system and the relevant laws, Shanghai Stock Exchange and Shenzhen Stock Exchange have also developed related implementation guidelines on social responsibility. All of these indicate that the social responsibility has been not only fully understood and implemented in listed companies, but also paid sufficient attention by the capital market.

In 2007, “Guidance on the state-owned enterprises to fulfill their social responsibility” issued by Chinese State-owned Assets Supervision and Administration Commission of the State Council makes several provisions on the social responsibility of Chinese enterprises. And then, “Guidelines for the preparation of corporate social responsibility reports in China” (CASS-CSR 2.0) issued by Chinese Academy of Social Sciences gives many details about how to prepare a CSR report.

Shanghai Stock Exchange issues several regulations on the CSR, such as “The memorandum No. 1 of annual report of the listed Corporation in 2009: the preparation and review of the internal control report and social responsibility report”, “Guidelines for the preparation of CSR report” etc...

Shenzhen Stock Exchange also issues some regulations on the CSR, such as “Assessment regulation for the information disclosure work of the listed Corporation in Shenzhen

Stock Exchange” in 2013, “The memorandum No. 1 of main board information disclosure service-the related issues on periodic reporting disclosure” etc...

### The relationship between CSR and ED

As we know, enterprise is the creator of the wealth in the society, so enterprise especially the listed company plays a key role in the economic development. The activities of enterprise (microeconomics) will affect the economic development of the nation (macroeconomics). In economics, the very famous menu cost theory talks about the relationship between menu costs of microeconomics and macroeconomic development. On CSR, Jinfu Zhu (2009) makes a study of the relationship between CSR and the transformation of economic development mode. And Navarro Espigares, José Luis (2006) talk about the CSR and economic growth in the European Union, and they get the conclusion that the economic impact of social responsibility can be translated into direct and indirect effects from companies. However, no scholar focuses on the relationship between CSR and economic development in China and in quantitative way. This paper wants to fulfill this gap.

In order to get the satisfying results of the study, and to consider more factors that affect the economic development, we introduce the control variables of the enterprise into our study. This also can ensure the results of our study more reliable. However, Margarita Tsoutsoura (2004) finds that there is a positive relationship between CSR and financial performance. That is to say, there will be a collinearity diagnostics problem between CSR and control variables this paper selects. In order to solve the collinearity diagnostics problem, we take several different ways to deal with the variables instead of using them directly. For

instance, we don't use the enterprise asset directly as control variable, we use “SIZE=log (total assets)” instead. All the detail that we deal with the variables can be seen from the table 1 to 4. However, after we deal with the variables, we still take correlation analysis before we take multiple variables linear regression analysis.

## RESEARCH

### Research structure

This paper contains two separate steps. The first step is to do correlation analysis to test the correlation between the level of CSR and ED and to test the correlation among the independent and control variables. The second step is to take multiple variables linear regression analysis to test the impact of CSR on ED. The overall structure of the research can be described as following:

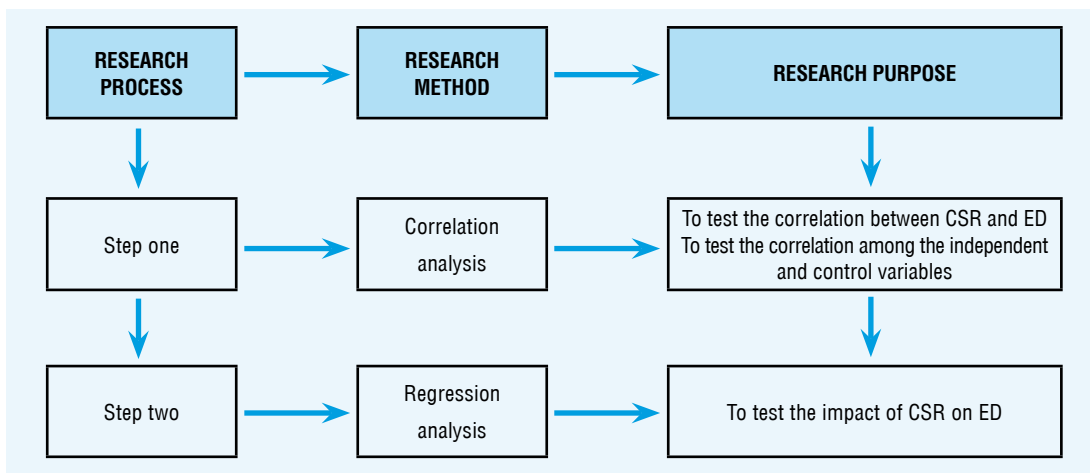
### Research significance

Although most scholars and government officials have recognized the importance of social responsibility, the investors in the capital market are still using the traditional economic indicators to measure the economic development. Non-economic indicators such as social responsibility do not get enough attention. How to analyze the economic development from the perspective of social responsibility is very important.

Economic development is the fundamental mission of the nation, and a good sustainable economic development is the key point of success for nation's economy. At the same time, the nations' another mission is to establish a good social responsibility system, so that it can help enterprises better use of internal

Figure 1

**THE OVERALL STRUCTURE OF THE RESEARCH**



Source: own editing

and external opportunities to create a better profit. This paper is very important for the government officials and the investors in the capital market and the significances contain the following several points:

Firstly, under normal circumstances, good social responsibility and good performance of enterprise will convey a signal of the good governance to the capital market, so as to attract more investors. It can be seen that a well-designed social responsibility system or mechanism plays a very important role in building a favorable the capital market image, and improving the performance of nation's economy.

Secondly, in the capital market, good social responsibility can help investors to understand the full governance information of listed company, so as to solve the problems of information asymmetry in the investment.

Finally, for the evaluation of economic development, the traditional methods are concerned with the economic indicators. In a sense, the economic indicators have many advantages: intuitive, easy to compare, and so on. However, with the complexity of business transaction and diversification of the capital

market, non-economic information is becoming more and more important, which requires the capital market's more attention to non-economic indicators.

**LITERATURE REVIEW**

In America, the research on the enterprise social responsibility is relatively mature, and the corresponding knowledge system is formatted (Nollet Joscha, et al, 2016). However, the main concern of American research focuses on using social responsibility to improve the reliability of financial accounting information, while in China, scholars' research starts relatively late, but the relevant results are quite abundant. Chinese scholars are not only concerned about the impact of social responsibility on financial report, but also concerned about how to improve the quality of financial information based on social responsibility (Luo Xueming, Du Shuili, 2015).

At home and abroad, there are some scholars basing on the corporate social responsibility to improve the governance of company.

Some scholars study the relationship between the social responsibility and corporate governance, and then study the relationship between corporate governance and economic development (Jinfu Zhu, 2009). Also some scholars use theory of liquidity to study the impact of corporate social responsibility on the financing cost of company, and then study the operating performance of company based on capital liquidity (Bartling Björn, et al, 2015). Throughout the country, all the scholars study these aspects of the social responsibility from different perspectives, and the results are also very abundant.

The previous research of scholars focuses on how to implement social responsibility, how to strengthen social responsibility, how to strengthen the social responsibility system, and the relationship between the social responsibility and enterprise's financial performance. But few scholars study the relationship between the corporate social responsibility and economic development. This paper, based on the results of previous studies, uses the sample data of China to study the relationship between the social responsibility and Chinese economic development.

## RESEARCH DESIGN

### Hypothesis

Whether it is from the traditional principal-agent theory, or the modern signaling model, the corporate social responsibility and nation's economic development have a very complex relationship. In fact, social responsibility, as a means of guarantee of enterprise's operation management, not only can improve the enterprise's management, but also can improve the enterprise's financial information quality. And social responsibility and economic development also have a positive correlation.

Just because of this, this paper assumes that the social responsibility and economic development are positively related. That is to say, a relatively high level of corporate social responsibility tends to a more objective economic development. So we make a hypothesis.

*H0: There is a positive relationship between CSR and ED.*

The purpose of this paper is to study the relationship between CSR and ED, so we just set up the hypothesis of them, and this paper doesn't set up any hypothesis of the relationship between control variables and ED.

### Material and methods

This paper mainly selects 681<sup>1</sup> listed companies from Chinese Stock Exchange as the study sample. In order to ensure a reliable and fair result, this paper also selects a part of other companies as a reference. When selecting sample, this paper has eliminated some special companies, such as the companies with incomplete financial information, the companies with incomplete social responsibility. All the data is from Chinese Stock Exchange website, and the corresponding data is digested by hand.

The data on the economic development such EVA, RGDP, ATR, PCDI is selected from National Bureau of Statistics of China. We select the data from 2005 to 2014. The reason is that the information of social responsibility is revealed from 2005.

In order to verify the hypothesis above that social responsibility and nation's economic development have a positive correlation, this paper uses independent samples T-test and multiple variables linear regression analysis. First, this paper classifies enterprises of the Chinese Stock Exchange according to the level of CSR, and takes T-test. Then we build four multiple variables linear regression models, and use the

SPSS 22 software to make multiple variables linear regression analysis, and then verify the correlation between the social responsibility and economic development.

## MEASUREMENT PROBLEMS

### Measures of corporate social responsibility

Corporate Social Responsibility is as the explanatory variable. For measuring the CSR in China, we use the Ranking CSR Ratings by Lingrun Company, which was founded in 2007. Lingrun Company is the authoritative third-party CSR rating agency in China, which is committed to provide scientific and objective CSR rating information for responsible investment (SRI), the responsibility of consumers and the public. CSR reports ranking by Lingrun company contains ESG ranking (environment, society, government), service for CSR investors and so on.

In order to solve collinearity diagnostics problem, we adjust the CSR reports ranking score by the formula below, which will also make the data more comparable and much easier to process. So at last, we select the RKS (the adjusted CSR Reports Ranking by Lingrun) standing for the corporate social responsibility as the explanatory variable. All the results are shown in the *Table 1*.

$$RKS = \text{Score}/10$$

The ranking arrangement by Lingrun Company is from “C-” to “AA”, which is more complicated and harder to analyze. In order to test the relationship between level of CSR and economic development much easier, we re-rank the CSR by the adjusted CSR Reports Ranking and the results are shown in the *Table 2*.

### Measures of economic development

The economic condition of nation as the explained variable can be measured numerically,

*Table 1*

**CSR REPORTS RANKING BY LINGRUN COMPANY  
(PARTIAL)**

No	Industry classification	Stock code	Enterprise	Rank	Prediction	Score	RKS
1	Insurance	601318	Ping An	AA	positive	78.71	7.87
2	Mining	601088	Shen Hua	AA	positive	78.49	7.85
3	Medicine	600196	Fosun Pharma	AA	positive	76.14	7.61
4	Finance	601398	ICBC	AA-	positive	72.38	7.24
5	Transportation	601111	Air China	A+	positive	71.92	7.19
6	Estate	000002	Vanke	A+	positive	71.06	7.11
7	Insurance	601601	CPIC	A+	stable	70.06	7.01
4e8	Finance	600000	SPDB	A	stable	68.7	6.87
9	Finance	601998	CITIC	A	positive	68.14	6.81
10	Mining	601857	CNPC	A	positive	67.06	6.71

Forrás: <http://www.rksratings.com/>

so the economic condition of nation can be reflected by the economic development. Therefore, this paper uses the EVA of industry (EVA), the increasing rate of GDP (RGDP), the increasing rate of investment in the fixed assets (ATR) and the increasing rate of per capita disposable income (PCDI) as a measure of economic development. And the detailed description of dependent variables is shown in the *Table 3*.

### Control variables

From the existing research, there are many corporate factors that affect the profitability of the enterprise which is the main content of economic development. For the accuracy of the results, in order to accurately reflect the correlation between CSR and economic development, the control variables selected are: debt to total assets ratio (DTA), enterprise

asset (SIZE), loss or not (LOSS), special treatment or not (ST). (See *Table 4*.)

### DESCRIPTIVE ANALYSIS

In order to better understand the situation and the tendency of variables we select, this paper firstly takes descriptive analysis to the RKS.

### The descriptive analysis of RKS

From the *Table 5*, we can see that the number of the sample companies is increasing year by year. In the year 2014, the companies disclosing social responsibility reports has increased to 681, which indicates that more and more companies realize the importance of CSR information and disclose the CSR

Table 2

RE-RANKING OF CSR				
RKS	0~2.50	2.51~5.00	5.01~7.50	7.51~10.00
Rank	disqualified	qualified	good	excellent

Source: own editing

Table 3

DESCRIPTION OF DEPENDENT VARIABLES		
Variable	Variable code	Variable definition
The EVA of industry	EVA	EVA is net operating profit of industry after taxes
The increasing rate of GDP	RGDP	$RGDP = (\text{current GDP} - \text{previous GDP}) / \text{previous GDP}$
The increasing rate of investment in the fixed assets	ATR	$ATR = (\text{current ATR} - \text{previous ATR}) / \text{previous ATR}$
The increasing rate of per capita disposable income	PCDI	$PCDI = (\text{current PCDI} - \text{previous PCDI}) / \text{previous PCDI}$

Source: own editing

Table 4

DESCRIPTION OF CONTROL VARIABLES		
Variable	Variable code	Variable definition
Debt to total assets ratio	DTA	DTA=total debt/total assets
Enterprise asset	SIZE	SIZE=log(total assets)
Loss or not	LOSS	If the net profit is negative, "LOSS"=0, otherwise, "LOSS"=1
Special treatment or not	ST	If stock of the company is specially treated, "ST"=0, otherwise, ST=1

Source: own editing

Table 5

DESCRIPTIVE ANALYSIS OF RKS BY YEAR				
Year	Max	Mini	Mean	Sample(681)
2005	6.1	3.3	4.23	13
2006	7.1	2.2	4.73	123
2007	7.4	1.6	4.96	136
2008	7.2	1.8	4.23	170
2009	7.7	2.1	4.91	272
2010	8.1	1.9	5.01	377
2011	8.6	2.3	5.12	490
2012	9.2	2.5	5.34	503
2013	9.6	2.2	5.47	625
2014	9.6	2.8	5.68	681

Source: own editing

information through the CSR report. And the max value of RKS is increasing year by year too, i.e. the value of RKS of some companies is up to 9.6.

### Descriptive analysis of research sample

In order to ensure the accuracy of the research result, we select all types of listed companies from Shenzhen and Shanghai Stock Exchange (see Table 6). The highest percentage of listed companies we selected is manufacturing due to

the importance of manufacturing in Chinese economy. And the distribution of percentage is from 0.29% to 28.05% according to the importance to Chinese economy. Of course, during this situation, the percentage of the Banking is lowest.

### CORRELATION ANALYSIS

In this part, firstly we do the independent-sample T-test in order to verify the relationship between the level of CSR and economic



Table 6

**DESCRIPTIVE ANALYSIS OF RESEARCH SAMPLE BY CATEGORY**

Listed Company	N	Percentage	Average RKS
Farming	111	16.30%	8.10
Mining	51	7.49%	9.22
Manufacturing	191	28.05%	9.01
Power	4	0.59%	9.23
Construction	11	1.62%	7.95
Wholesale and Retail	44	6.46%	8.40
Transportation	57	8.37%	8.82
Accommodation	69	10.13%	7.66
Information Technology	38	5.58%	7.07
Banking	2	0.29%	8.70
Real Estate	26	3.82%	9.60
Culture and Sports	77	11.31%	9.08
Total	681	100%	

Source: <http://www.szse.cn> & <http://www.sse.com.cn/>

development in China. And then we want to test the correlation among the independent variables in order to check whether the variables are suitable for the next multiple variables linear regression analysis.

**Independent-samples T test**

In order to test whether there are some differences in the economic development with different level of CSR, this paper classifies the enterprises from Chinese Stock Exchange into groups by the ranks we set in the Table 2. In the calculation process, this paper not only calculates the mean value of the performance indexes of sample data, but also calculates the D-value of performance indexes between adjacent grades, and to substitute them into the T-value formula to determine the significant difference. The results are as follows (Table 7):

From the parameter test results (Table 7): the EVA of industry (EVA), the increasing rate of GDP (RGDP), the increasing rate of investment in the fixed assets (ATR) and the increasing rate of per capita disposable income (PCDI) are increasing with the increasing of CSR levels, especially from the excellent group to the good group. This means there is a positive relationship between CSR level and ED. The increasing rate of per capita disposable income (PCDI), the increasing rate of GDP (RGDP), and the increasing rate of investment in the fixed assets (ATR) is significant different among different groups, in contrast, difference in the rest is not very obvious. The result in the table above verifies the hypothesis that there is a positive relationship between CSR and ED. However, for the further verification of the hypothesis, this paper continues to take multiple variables linear regression analysis.

Table 7

THE RESULTS OF INDEPENDENT-SAMPLES T TEST										
					excellent—good		good—qualified		qualified—disqualified	
	disqualified	qualified	good	excellent	D-value	T-value	D-value	T-value	D-value	T-value
PCDI	-0.45	-0.05	0.25	0.97	0.72	4.16*	0.30	2.26*	0.40	2.35*
RGDP	-0.25	-0.20	-0.06	0.23	0.29	2.63*	0.14	0.76	0.05	0.22
EVA	-0.11	-0.01	0.04	0.08	0.04	0.64	0.05	0.89	0.10	1.21
ATR	0.26	0.48	0.66	0.93	0.27	2.32*	0.18	1.70*	-0.29	-1.25

\*Correlation is significant at the 0.05 level

Source: own editing

Table 8

CORRELATION ANALYSIS AMONG VARIABLES AND CONTROL VARIABLES						
		RKS	DTA	SIZE	LOSS	ST
RKS	Pearson Correlation	1				
	Sig. (2-tailed)					
DTA	Pearson Correlation	0.008	1			
	Sig. (2-tailed)	0.000***				
SIZE	Pearson Correlation	0.181	0.021	1		
	Sig. (2-tailed)	0.006***	0.747			
LOSS	Pearson Correlation	0.055	0.004	-0.034	1	
	Sig. (2-tailed)	0.407	0.955	0.610		
ST	Pearson Correlation	0.131	0.160	0.122	-0.014	1
	Sig. (2-tailed)	0.047**	0.014**	0.064*	0.831	

It can be seen in table that this paper divides the correlation among all the variables into 4 types by the significance level. The significance level in the table without mark means that the significance level of them is greater than 0.05, so the correlation among them can be rejected directly. There is only one significance level with one mark “\*”. One “\*” means that the significance level of it is near to 0.05, however, the correlation coefficient is only 0.122. In this case, there is only a very weak correlation between ST and SIZE. The significance level in the table with two “\*\*” or three marks “\*\*\*” means that although they have very satisfying significance level, the correlation coefficient of them is very weak. All the 4 types tell us that all of them either have a weak correlation coefficient or have an unacceptable significance level.

Source: own editing

### Correlation among the independent and control variables

Though we have already taken methods to deal with independent and control variables to solve the multiple collinearity diagnostics

problem, we take correlation analysis to the independent and control variables in order to test whether the independent and control variables are independent and suitable for multiple variables linear regression analysis. The results are shown in the *Table 8*.

From the table 8, we know that the relation among the independent and control variables is not significant. The highest Pearson coefficient is 0.131 which is the relationship between RKS and ST. And the lowest coefficient is 0.004, which is the relationship between DTA and LOSS. All these coefficients indicate that the independent and control variables are independent, so they are suitable for the multiple variables linear regression analysis.

## MULTIPLE VARIABLES LINEAR REGRESSION ANALYSIS

### Construction of regression analysis model

This paper constructs regression model to study the impact of corporate social responsibility (CSR) on economic development (ED). The four traditional economic indicators that can express the economic development of the nation are selected. The explanatory variable is used to reflect the status of the social responsibility, while taking some control variables into account. The multiple variables linear regression models are designed as following:

$$PCDI = \beta_0 + \beta_1 \times RKS + \beta_2 \times DTA + \beta_3 \times SIZE + \beta_4 \times LOSS + \beta_5 \times ST + \epsilon \quad (1)$$

$$RGDP = \beta_0 + \beta_1 \times RKS + \beta_2 \times DTA + \beta_3 \times SIZE + \beta_4 \times LOSS + \beta_5 \times ST + \epsilon \quad (2)$$

$$EVA = \beta_0 + \beta_1 \times RKS + \beta_2 \times DTA + \beta_3 \times SIZE + \beta_4 \times LOSS + \beta_5 \times ST + \epsilon \quad (3)$$

$$ATR = \beta_0 + \beta_1 \times RKS + \beta_2 \times DTA + \beta_3 \times SIZE + \beta_4 \times LOSS + \beta_5 \times ST + \epsilon \quad (4)$$

*PCDI*: The increasing rate of per capita disposable income

*RGDP*: The increasing rate of GDP

*EVA*: The EVA of industry

*ATR*: The increasing rate of investment in the fixed assets

*RKS*: The adjusted CSR Reports Ranking by Lingrun

*DTA*: Debt to total assets ratio

*SIZE*: Enterprise asset

*LOSS*: Loss or not

*ST*: Special treatment or not

### The population regression analysis

This paper firstly takes the population regression analysis to test how much the expectation of the economic development can be explained by the total function. Through the analysis, the results can be seen in the *Table 9*.

From the table 9, we can see that the total function can explain the major expectation (more than 40%) of the economic development. For the model 1,  $R^2=0.573$ , which means that 57.3% of the expectation of PCDI can be explained by the model 1. The adjusted R square is 0.543, which means that the regression equation fits our research data well. And the standard error of the estimate is 27.36313, which means that the prediction of the total function is of accuracy. For the other 3 models, the  $R^2$  value of model is less than model 1, however, this paper's result is similar to other scholars' research results. That is to say,  $R^2$  is generally 10%–50%. So the models fit the actual situation of the nation in china.

### The multiple variables linear regression analysis

This paper uses SPSS 22 software, puts the sample data into the model, and uses multiple variables linear regression models to estimate. The results are as follows (*Table 10*).

From the results of the analysis in table 10, the probability of F-test statistic in regres-

Table 9

MODEL OF SUMMARY				
Model <sup>a</sup>	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.757 <sup>b</sup>	0.573	0.543	27.36313
2	0.722 <sup>b</sup>	0.412	0.407	28.14271
3	0.675 <sup>b</sup>	0.465	0.443	26.44478
4	0.664 <sup>b</sup>	0.441	0.421	28.84275

a. Models: PCDI, RGDP, EVA, ATR

b. Predictors: (Constant), PKS, DTA, SIZE, LOSS, ST

Source: own editing

Table 10

**THE MULTIPLE VARIABLES LINEAR REGRESSION RESULTS OF CSR AND ECONOMIC DEVELOPMENT<sup>3</sup>**

	Model 1	Model 2	Model 3	Model 4
RKS	0.5 (1.87)	0.29 (2.23)	0.11 (2.14)	0.51 (2.51)
DTA	-1.31*(-1.39)	-0.43**(-3.45)	-0.89*(-1.08)	-0.06 (-0.30)
SIZE	0.51 (0.83)	0.35*(2.30)	0.03 (1.35)	0.06 (1.39)
LOSS	-0.83**(-3.76)	-0.31**(-3.72)	-0.26**(-4.87)	-0.02 (-0.21)
ST	-0.06 (-0.04)	-0.22*(-1.10)	0.05 (0.23)	0.53 (0.14)
F	7.35	5.22	5.41	3.19
R2	0.57	0.41	0.47	0.44

\*Correlation is significant at the 0.05 level, and T-value is in the bracket.

\*\*Correlation is significant at the 0.01 level.

Source: own editing

sion model is approximately zero, indicating that the results of multiple variables linear regression analysis are statistically significant, and the data analysis is effective. T-value (in the bracket) is not so large, and the adjusted goodness of fit is not very good. The following conclusions can be drawn from the results of regression analysis.

As an explanatory variable, the adjusted CSR Reports Ranking (RKS) has a positive regression coefficient R<sup>2</sup> with the EVA of industry (EVA), the increasing rate of GDP

(RGDP), the increasing rate of investment in the fixed assets (ATR) and the increasing rate of per capita disposable income (PCDI). The results show that the adjusted CSR Reports Ranking (RKS) and economic development are positively relevant. The high-quality social responsibility will help to improve economic performance. The reason for this is that to enhance the integrity and effectiveness of social responsibility will help to avoid the risk of asymmetric information, and then the investors in the capital market will have more

confidence to invest. At the same time, the T-value is greater than 1.50, which indicates that the positive correlation of RKS to economic performance is sustainable. So the impact of CSR on economic development can be considered for long-term.

The relationship between the debt to total assets ratio (DTA) and the increasing rate of per capita disposable (PCDI), the increasing rate of GDP (RGDP), the EVA of industry (EVA), the increasing rate of investment in the fixed assets (ATR) is negative, which means that the higher DTA is not good for the whole country's economic development, though it is good the enterprise's short-term profit as the lever principle in finance. However, only the T-value of RGDP is larger than 1.5, and the rest are less than 1.5, which mean that the impact of DTA on the economic development is not sustainable, and this is also fit for the lever principle that financial lever only affect the profit at present.

There is a positive relationship between the enterprise asset (SIZE) and the increasing rate of per capita disposable income (PCDI), the increasing rate of GDP (RGDP), the EVA of industry (EVA), the increasing rate of investment in the fixed assets (ATR). This means the investment in the enterprise assets is one reason for the economic development of the country. In other words, nation's economic development depends on the enterprise asset investment. As we know, the higher quality CSR can give the capital market a signal of better management and performance of enterprises, which can make the investors in the capital market more confident in the investment. In this situation, more capital will flow into the capital market and more enterprise asset investment will bring a higher economic growth and a better economic development. However, only T-value of RGDP is greater than 1.5, which means the enterprise asset investment has a more direct impact on the

GDP than other three economic indicators. This also gives us a signal that simply extensive economic expansion has come to an end, not everything has changed.

The relation of loss or not (LOSS) and the increasing rate of per capita disposable income (PCDI), the increasing rate of GDP (RGDP), the EVA of industry (EVA), the increasing rate of investment in the fixed assets (ATR) is also negative. This tells us that if the profit of enterprise is lower or negative, the economic development will be lower or negative. The reason for this phenomenon is that the enterprise is the creator of wealth, and the ability of the enterprise to create wealth determines the quantity of the nation's economy. This also explains the relation of macro economic development and micro enterprise indicators. Only one of the T-value is less than 1.5, which indicates that impact of LOSS on the economic development is sustainable, and tells us that we should make the enterprise keep the ability of profit if we want our national economy develop well.

The relationship between special treatment or not (ST) and the increasing rate of per capita disposable income (PCDI), the increasing rate of GDP (RGDP), the EVA of industry (EVA), the increasing rate of investment in the fixed assets (ATR) is more complex than others. The relationship between ST and PCDI, RGDP is negative, which tells us the special treatment of listed company will decrease the economic quantity at present because T-value is less than 1.5. However the relationship between ST and EVA, ATR is positive. If the stock of listed company is specially treated, it will take some strategy to adjust the investment so that this strategy will increase the fixed asset investment and increase the EVA. However, T-value of them is less than 1.5 too, which means the adjustment of listed company for the special treatment is only for short term.

Based on the results of data analysis, it is

proved that there is a significant positive correlation between the quality of social responsibility and the nation's economic development.

## RESULTS AND DISCUSSION

In order to verify the relationship between the social responsibility and the nation's economic development, we select 681 listed companies from China as research sample. To reflect the economic development of the nation, we select four traditional economic indicators such as the EVA of industry (EVA), the increasing rate of GDP (RGDP), the increasing rate of investment in the fixed assets (ATR) and the increasing rate of per capita disposable income (PCDI). The explanatory variable is the adjusted CSR Reports Ranking (RKS) from Lingyun Company. The control variables selected are: debt to total assets ratio (DTA), enterprise asset (SIZE), loss or not (LOSS), special treatment or not (ST). After correlation analysis of the social responsibility and performance of nation, this paper uses SPSS 22 software to establish the regression model and to make the multiple variables linear regression analysis.

Through independent-samples T-test, we know that there is a positive relationship between the level of CSR and economic development which verify our hypothesis that there is a positive relationship between CSR and ED. That is to say when the level of CSR in China is higher, the economic development is also better. However, the difference in the rest of the index is not very obvious, which also mean that there is a relationship between the CSR and ED. In order to verify the relationship between CSR and ED further, we continue to take linear regression analysis.

Through the correlation analysis, we get the result that CSR and ED are really correlated

and there is little relation among the independent and control variables which mean the independent and control variable we selected are suitable for the linear regression analysis. In order to verify the strength and direction of the relationship between CSR and ED, we take the linear regression analysis.

Through multiple variables linear regression analysis, we find that the quality of social responsibility is positively related to the nation's economic development. It shows that a higher quality of social responsibility can bring a more outstanding economic performance for the nation. At the same time we also find that if the quality of corporate social responsibility is lower, the economic development is also very general. Through T-test, we can find that the quality of corporate social responsibility has an impact on economic development, and this impact is not temporary, but sustainable. However, T-value (in the bracket) is not so large, the adjusted goodness of fit is not very good and  $R^2$  is generally 10%–50%. One reason for this situation is that we only select research sample from China. So when we want to further my research, we will select more samples from other countries, which will make the results more reliable.

This paper is not the first paper to talk about the relation between macroeconomics and microeconomics, but it is the first paper to study the impact of CSR on ED in quantitative way. In order to get the research data easier, this paper selects data from China which makes the results of the research are not perfect. During the future research, we will take more samples from the rest of world, and try our best to make more reliable results.

This paper focuses on the impact of CSR on the economic development. In fact, there are also some backward effects of economic development on the CSR. Shuwang Yang and Nan Meng (2016) find that economic development has a positive effect on corpo-

rate governance and corporate social responsibility information disclosure. The higher level of economic development results in the more perfect corporate governance structure, and the corporate social responsibility

information disclosure is better. The positive effect of economic development through the corporate governance on corporate social responsibility information disclosure is significant.\*

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### NOTES

<sup>1</sup> Business dictionary is the leading online business resource, featuring over 25,000 definitions spanning across critical business-related topics including management, small business, economics, human resources, entrepreneurship, recruiting, and corporate strategy. Each definition provides a clear and concise description of the term to help users gain a comprehensive understanding of the concept. Source: <http://www.businessdictionary.com/>

<sup>2</sup> Up to 2014, there are only 681 listed companies disclosing CSR reports, and the proportion of them is 26.7%. Source: <http://finance.sina.com.cn/china/20141008/143520482679.shtml>

<sup>3</sup> In the process of multiple linear regression analysis, we analyze the models one by one. However, in order to interpret and compare the results easier, we put the multiple linear regression analysis results together.

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