

Corporate Social Responsibility Cost for Employees and Enterprise Benefits: An Empirical Analysis

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Abstract: This paper empirically studied the relationship between the corporate social responsibility cost (CSRC) of employees and the enterprise benefits from the perspective of employees. The CSRC of employee is divided into three aspects: the economic responsibility cost, the legal responsibility cost and the ethical responsibility cost. This paper selected the steel industry as the research sample, using data index and statistical methods to investigate the relationship between CSRC for employees and enterprise benefit. The study found that the correlation relationship between CSRC for employees and enterprise benefit is not entirely positive, of employees into the enterprise benefit's feedback on CSRC for employees has a certain lag. The cause of this phenomenon includes policy environment, industry development, competitive environment and other related factors. It is hoped that this study can enrich the research of the corporate social responsibility (CSR) of employees and have some implications for future research.

Keywords: Corporate social responsibility cost, enterprise benefits, employee

I. INTRODUCTION

In the era of the rapid development of science and technology, machinery and equipment can replace employees to be engaged in hazardous work, thus ensure the safety of employees and improve the efficiency of the staff. However, the machine eventually cannot replace human's work, while the development of enterprise mainly depends on the efforts of employees to a large extent [1]. Therefore, companies should pay enough attention on employees and protect legitimate rights and interests of employees. Companies need to increase input on employees, so as to improve satisfaction, trust and loyalty of employees, finally ensure the stability of companies' development [2].

Academic circles have been studied for a long time, including the research of employee's wages, benefits, performance and loyalty. Clarkson and other scholars proposed in the study that employees need to work in a fair and equal environment, while the vocational training, promotion and other rights can be ensured [3, 4]. According to the study of CSR stakeholders by Laura et al, if a company tries its best to ensure employee's quality of life, it will contribute to improve the loyalty and commitment of employees, thus promoting enterprise efficiency [5-7]. Some domestic scholars concluded that appropriate safety responsibility can improve enterprise's economic benefits [8, 9]. However, Tian

Hong drew conclusions that the effect of both influence differs in different stages of different, sometimes present positive correlation, sometimes present negative correlation [10]. We can from different perspectives of enterprise development stages and empirical methods.

From these studies, we can see the conclusions of relationship between the staff cost and corporate performance are inconsistent. Due to uncertain and fuzzy factors and its widespread content of CSRC for employees and enterprise benefits. There are different evaluation emphases without unified evaluation objects of CSRC for employees and the enterprise benefits at present. Moreover, corresponding evaluation indexes system need to be developed. Therefore, the establishment of evaluation indicators of CSRC for employees and enterprise benefits based on China's reality is essential. This paper aims to redivide the CSRC for employees based on Carol pyramid theory and determine the variables to evaluate of enterprise benefits from comprehensive aspects. We made an empirical study on the relationship between CSRC for employees and enterprise benefits. Analysis results showed that the CSRC for employees is not matching strictly to achieve enterprise benefits because of the influence of policy environment and hysteresis of costs.

II. INDICATOR DESIGN

A. Indicator Design of CSRC for Employees

This paper selected CSRC for employees classification indicators, in the process of establishing index system for CSRC for employees, this paper from indicators classification and reasonable selection, including the economic responsibility cost, the legal responsibility cost and the ethical responsibility cost. According to the definition of CSRC for employees,

the economic responsibility cost indicators included average wage growth rate, welfare per capita growth rate, wages and the ratio of operating income, wages and profits ratio. The legal responsibility cost indicators included per capita growth rate of social insurance, per capita growth rate of housing accumulation fund, social insurance and wage rates. The ethical responsibility cost indicators included per-capita education spending and the union funds and growth. Each index is shown in Table 1.

Table 1. Corporate social responsibility to employees cost indicators.

Variable Types	Variables	Computational Formula
Economic Responsibility Cost Variable	Average Wage Growth Rate	(Per capita total wages current year-per capita total wages last year)/per capita total wages last year
	Welfare Per Capita Growth Rate	(Per capita total welfare current year-per capita total welfare last year) /per capita total welfare last year
	Ratio of Wages to Revenue	Per capita total welfare current year/This year's revenue
	Ratio of Wages to Profits	Total wages current year/profits current year
Legal Responsibility Cost Variable	Per capita Growth Rate of Social Insurance	(Social insurance premium per capita in total current year-social insurance premium per capita in total last year) /social insurance premium per capita in total last year
	Per Capita Growth Rate of Housing Accumulation Fund	(Per capita total of housing accumulation fund current year-Per capita total of housing accumulation fund last year) /Per capita total of housing accumulation fund last year
Ethical Responsibility Cost Variable	Growth Rate of Per Capita Staff Education Funds and Trade Unions	(Per employee education funds and union funds combined current year-Per employee education funds and union funds combined last year)/Per employee education funds and union funds combined last year
	Ratio of Staff Education Funds to Revenue	Employee education funds and so on aggregate current year/This year's revenue

Data source: author manual sorting.

B. Indicator Design of Enterprise Benefits

In evaluating the enterprise benefit, according to the connotation of enterprise benefit, according to overall principle of indicators selecting, this paper selecting indicators from the aspects including profitability, solvency, developing capability. At the same time, in the choice of same category, we paid more attention to find the representative indicators.

According to the overseas and domestic research status [11], in combination with financial variables of CSMAR Solution daigase, we determine the variables to evaluate of enterprise benefits from following aspects: operation capacity, profitability, debt paying ability and development ability. These variables are as shown in Table 2.

III. EMPIRICAL ANALYSIS ON CSRC FOR EMPLOYEES AND ENTERPRISE BENEFITS

A. Empirical Research Object

Due to space constraints, it's hard to research and evaluate on all enterprises. Out of concern that empirical data should be available, we chose listed companies as the research object. In addition, the iron and steel enterprise is one of the pioneers of CSR, so this paper studies the iron and steel listed companies as the research objective.

Known as black metal industry, iron and steel industry is part of the metallurgical industry, one of its characteristic is capital and labor intensive. Otherwise, iron and steel industry provide important raw materials for the various sectors of the economy in China.

Table 2. Enterprise benefits indicators.

Variable Types	Variables	Computational Formula
Operation Capacity	Total Assets Turnover	Operating revenue for the current year / total assets of the final balance
	Inventory Turnover	Operating cost for the current year / Average inventory balance
	Accounts Receivable Turnover	Current year operating revenue / Average balance of receivables
Profitability	Return on Assets	(Profit for the current year + financial expense for the current year) / Average total assets
	Return on Equity	Net profit for the current year/Shareholders' equity average balance
	Ratio of Profits to Cost	(Profit for the current year) / (operating cost for the current year +selling expenses for the current year + Administrative expenses for the current year + Finance expense for the current year)
Debt paying Ability	Liquidity Ratio	Liquid assets for the current year / liquid liability for the current year
	Quick Ratio	(Liquid assets for the current year - inventory for the current year) / liquid liability for the current year
	Asset-Liability Ratio	Total liabilities for the current year / Total assets for the current year
Development Ability	Retention Ratio	Retained earnings / net profit for the current year
	Tobin's Q	Market value / Total assets
	Growth Rate of Total Assets	(Total Assets of the final value-Total Assets of the initial value)/Total Assets of the initial value
	Growth Rate of Return on Equity	(Return on equity for the current year - Return on equity for the last year) / Return on equity for the last year

Data source: author manual sorting.

This paper chose Chinese iron and steel listed companies as research object, as of October 30, 2014, this paper selected 32 iron and steel listed companies' data during 2012 and 2013 through company's annual financial report and CSMAR Solution database.

B. Factor Analysis

Suitability Judgment of Factor Analysis: After samples processing, we found that the correlations between some indicators were weak. After repeated verification, this paper finally get seven indicators to evaluate CSRS of employees, including average wage growth rate, welfare per capita growth rate, per capita growth rate of social insurance, per capita growth rate of housing accumulation fund, growth rate of per capita staff education funds and trade unions, ratio of staff education funds to revenue, wages and the ratio of revenue, named in X1, X2, X3.....X7 respectively. In addition, we observed 8 indicators to evaluate enterprise benefits, including total assets turnover, return on assets, return on equity, ratio of profits to cost, quick ratio, Tobin's Q, growth rate of total assets,

growth rate of return on equity, named in N1, N2, N3.....N8 respectively.

First, the data were tested by KMO and Bartlett sphere test. According to the results of KMO, the KMO of the two groups of data is 0.741 and 0.611 respectively, indicating that the two sets of data are suitable for factor analysis. Afterwards, according to the results of Bartlett sphere test, $P < 0.001$, illustrating that the validity is proper. In factor common degree analysis and factor extraction, we adopt the method of principle component extraction. There are three common factors in the system of CSRC for employees and four common factors in the system of enterprise benefits. According to the computing results, we arrived at variance contribution rate of correlation coefficient matrix, the enterprise of employee social responsibility cost system to get three common factors, enterprise benefit get four common factors. The variance contribution rates of the two systems are 88.661% and 87.733%, which showed that the common factors extracted from the two systems could be a good alternative to the indicators.

1) *Factor Analysis of CSRC for Employees:* Afterwards, we named the factors and calculate the score of factor. Meanwhile, we rotated the factor loading matrix in order to reflect the economic significance of each factor. In addition, this paper obtained two rotation matrixes of the two indicator

systems by using the solution of variance to rotate factor loading matrix. And then we obtained the component score coefficient matrix of the CSRC for employees' evaluation systems according to the result of factor analysis shown in Table 3.

Table 3. Corporate social responsibility to employees cost of rotated component matrix and component score coefficient matrix.

Corporate Social Responsibility to Employees Cost	Y1		Y2		Y3	
	Rotated Component	Component Score Coefficient	Rotated Component	Component Score Coefficient	Rotated Component	Component Score Coefficient
X1	0.516	-0.016	0.763	0.364	0.065	-0.037
X2	0.87	0.315	0.41	-0.026	-0.022	-0.086
X3	0.228	-0.208	0.861	0.568	-0.081	-0.189
X4	0.208	-0.185	0.76	0.456	0.27	0.17
X5	0.958	0.428	0.238	-0.201	0.07	0.026
X6	0.961	0.428	0.241	-0.201	0.078	0.033
X7	0.047	-0.023	0.087	-0.074	0.979	0.955

Data source: author manual sorting.

From Table 3, we can get the load coefficient of each component after rotation. In this paper, the above factors were named Y1, Y2, Y3, standing for ethical responsibility, legal responsibility, economic responsibility for CSRC for employees respectively.

According to component score coefficient matrix, we can arrive at the formulas for computing the various factors firstly. Second, the 7 indicators to evaluate CSRC for employees were named X1, X2... X7 respectively. In addition, the three common factors were named Y1, Y2 and Y3. Finally, according to the three common factors, component score coefficient matrix and variance contribution rate, enterprise comprehensive score of CSRC for employees named Q can be obtained consequently. According to the following formula, we can calculate each principal component score of CSRC for employees in 2013:

$$Y1 = -0.16X1 + 0.315X2 - 0.28X3 - 0.185X4 + 0.428X5 + 0.428X6 - 0.023X7 \quad (1)$$

$$Y2 = 0.364X1 - 0.026X2 + 0.568X3 + 0.456X4 - 0.201X5 - 0.201X6 - 0.074X7 \quad (2)$$

$$Y3 = -0.037X1 - 0.086X2 - 0.189X3 + 0.170X4 + 0.026X5 + 0.033X6 + 0.955X7 \quad (3)$$

$$Q = (42.287Y1 + 31.320Y2 + 15.054Y3) / 88.661 \quad (4)$$

According to the above formula, we calculated the score of each company and rankings are shown in Tab. 4 below. From the scores in the table, the lowest score of CSRC for employees in iron and steel listed companies in 2013 is 0.68, while the highest score is 3.04, forming a great distance. The average score is 0, showing the poor performance on the CSRC for employees in the most of iron and steel listed companies, which means that the fulfillment of CSR for employees is barely satisfactory; showing that fulfillment of CSR for employees in iron and steel listed companies is urgently enhanced in China.

2) *Factor Analysis of Enterprise Benefits:* Similarly, after the rotation of enterprise benefit factors, the load coefficient of each factor and component scores can be obtained. In this paper, the 8 indicators to evaluate enterprise benefits were named N1, N2... N8 respectively. In addition, the four common factors were named M1, M2, M3, M4, standing for profitability, operation capacity, development ability, debt paying ability respectively, as shown in Table 5.

In 2013, according to the following formula, common factors score of each company, are as shown in Table 5:

Table 4. Corporate social responsibility to employees of the scores ranking.

Stock Code	Q	Ranking	Stock Code	Q	Ranking
000708	0.03	12	600019	-0.47	30
000709	-0.24	25	600022	-0.32	26
000717	0.06	9	600117	0.48	2
000761	-0.10	17	600126	-0.42	28
000778	-0.19	21	600231	-0.15	20
000825	-0.22	22	600282	-0.22	23
000898	-0.11	18	600307	-0.68	32
000932	-0.13	19	600399	0.04	11
000959	3.04	1	600507	-0.05	15
002075	-0.55	31	600569	-0.37	27
002110	-0.06	16	600581	-0.23	24
002318	0.43	3	600782	0.29	4
002443	-0.03	14	600784	-0.03	13
002478	0.10	7	600808	0.16	6
600005	0.05	10	601003	-0.47	29
600010	0.08	8	601005	0.28	5

Data source: author manual sorting

Table 5. Enterprise benefits of rotated component matrix and component score coefficient matrix.

Enterprise Efficiency	M1		M2		M3		M4	
	Rotated Component	Component Score Coefficient	Rotated Component	Component Score Coefficient	Rotated Component	Component Score Coefficient	Rotated Component	Component Score Coefficient
N1	0.258	0.054	-0.488	-0.33	-0.697	-0.582	0.166	0.152
N2	0.959	0.294	-0.068	0.033	0.072	0.031	0.07	0.032
N3	0.903	0.256	-0.273	-0.119	0.102	0.059	0.1	0.068
N4	0.961	0.3	-0.064	0.038	-0.024	-0.049	0.012	-0.022
N5	0.075	-0.003	0.091	0.047	0.003	0.008	0.965	0.893
N6	0.635	0.266	0.626	0.509	-0.096	-0.1	-0.191	-0.218
N7	-0.293	-0.03	0.808	0.547	-0.046	-0.028	0.244	0.217
N8	0.247	0.026	-0.269	-0.174	0.837	0.686	0.101	0.098

Data source: author manual sorting.

$$M1=0.054N1+0.294N2+0.256N3+0.300N4-0.003N5+0.266N6-0.030N7+0.026N8 \quad (5)$$

$$M2=-0.330N1+0.033N2-0.119N3+0.038N4+0.047N5+0.509N6+0.547N7-0.174N8 \quad (6)$$

$$M3=-0.582N1-0.031N2+0.059N3-0.049N4+0.008N5-0.100N6-0.028N7+0.686N8 \quad (7)$$

$$M4=0.152N1+0.032N2-0.068N3-0.022N4+0.893N5-0.218N6+0.217N7+0.098N8 \quad (8)$$

According to the four common factors, component score coefficient matrix and variance contribution rate, enterprise comprehensive score of

enterprise benefits named E can be obtained consequently.

$$E = (40.996M1+18.077M2+15.166M3+13.495M4)/87.733 \quad (9)$$

In 2013, according to the above model, the score of each enterprise is shown in Table 6, showing that the score of enterprise benefits is lower. The lowest score of enterprise benefits in iron and steel listed companies is -1.34, while the highest score is 1.73, the average score is -0.02, indicating that the economic environment of iron and steel listed company in our country is unsatisfactory.

Table 6. Enterprise benefits of the scores ranking.

Stock Code	E	Ranking	Stock Code	E	Ranking
000708	0.01	11	600019	0.00	12
000709	-0.06	15	600022	-0.30	25
000717	-0.06	14	600117	0.12	10
000761	-0.15	18	600126	-0.41	29
000778	1.10	2	600231	-0.16	19
000825	-0.29	23	600282	-0.39	28
000898	-0.30	26	600307	-1.34	32
000932	-0.10	16	600399	0.29	9
000959	-0.48	30	600507	0.64	4
002075	-0.14	17	600569	-0.17	20
002110	-0.37	27	600581	0.30	8
002318	1.73	1	600782	-0.21	22
002443	0.38	7	600784	0.53	5
002478	0.77	3	600808	-0.04	13
600005	-0.29	24	601003	-0.18	21
600010	0.41	6	601005	-0.86	31

Data source: author manual sorting.

C. Curve Fitting of CSRC for Employees and Enterprise Benefits

According to the CSRC for employees and enterprise benefits, this paper dealt with the data. Afterwards using SPSS software to estimate curve.

This curve as shown: enterprise benefits change as CSRC for employees. The change can be roughly

divided into three intervals. In the first interval, enterprise benefits decreases as the investment of CSRC for employees. In the second interval, enterprise benefits increases as the investment of CSRC for employees. In the third interval, enterprise benefit decreases as the investment of CSRC for employees.

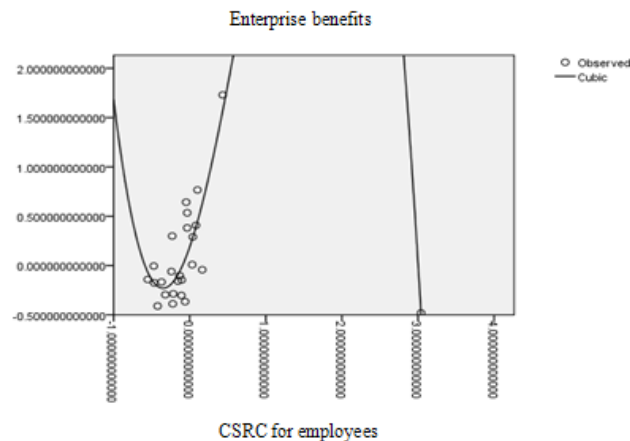


Figure 1. Curves figure.

IV. DISCUSSION

In this paper, we made an empirical study on the relationship between investment of CSRC for employees and enterprise benefits from the employee's point of view. We found that the CSRC for employees is not currently feedback on achieving enterprise benefits because of the influence of policy environment and hysteresis of costs. In the present economic environment, most of the profits of the iron and steel listed companies decreased, iron and steel listed companies basically are state-owned companies. Although enterprise benefits slightly decreased under the influence of the environment, the CSRC for employees is not matching to achieve CSR and enterprise benefits. This may be related to the influence of policy environment and benefits and costs of hysteresis. Under the policies of current environment in China, attention are increasingly paid to human rights, although enterprise benefits is unsatisfactory, the security of employees' wages, welfare, insurance still maintain at the levels of certain laws and regulations. Particularly in the state-owned enterprises, salary welfare for the employees of state-owned enterprises has strong security. The hysteresis in benefits and costs may result in the inconformity of enterprise benefits and CSRC for employees. In China, laws for protection of employees have been continuously improved, making the increased cost of employees is not returned in the short term.

In future research, on the one hand, we will expand the Observation size and period to establish the indicators system of CSRC for employees more scientifically. On the other hand, the follow-up study will put emphasis on influence of policy environment and benefits and costs of hysteresis, in order to

investigate on their influence on the relationship between CSRC for employees and enterprise benefits.

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