

The Measurement and Analysis on Credit Risk of Corporate Social Responsibility

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Abstract

Corporate social responsibility (CSR) credit risk means the corporations cannot assume social responsibility in accordance with regulations and contracts so as to damage the interest of stakeholders, which will bring uncertainty of adverse impact on the sustainable development of enterprises. Credit risk of CSR form the threat which can not be ignored to the interests of stakeholders resulting. There is a growing emphasis on corporate social responsibility credit problems. This paper combining academic research results and according to the stakeholder theory, analyzes how to measure the credit risk of CSR. Compared to various credit-risk measurement methods, I ultimately select Logic model as a measurement model of credit risk of CSR. Log it model is established on the basis of selecting the appropriate financial indicators and undertaking factor analysis on the indicators. I finally find that the model is effective to measure the credit risk of CSR.

Keywords: Credit risk of CSR; measurement; Logit model; risk management

1. Introduction

In the world of globalization, the corporations are more and more dependent on each other, then the potential vulnerability and uncertainty are the main risks faced by enterprises. Modern web-based business model emphasizes the importance of improving relationships between the extended enterprises and stakeholders. This relationship will also attract new stakeholders, which needs innovative CSR risk management model (Kytly, Beth and Gerard Ruggie, 2005). Corporate social responsibility runs through the production and operation of the enterprises, any kind of the risk of social responsibility will have side effect on the interests of stakeholders. Scholars already have had a comprehensive study on the risk of social responsibility and have established a relatively sophisticated corporate social responsibility risk measurement models. But for enterprises, the most basic social responsibility is credit responsibility (XingxiLi, 2012). Companies generally pay attention to credit management of the suppliers and demand side. While for measuring and managing credit risk of corporate social responsibility is the areas many companies overlook, which highlight the issues of taking social responsibility during the sustainable development of companies (Wenjing Zhao, 2014).

Hua Ao(2011) pointed out that the loss of enterprises caused by the lack of credit every year has reached 585.5 billion RMB, the lack of credit of the enterprises generates barriers for the rapid economic growth and healthy development of enterprises. The uncertainty caused by credit problems, also called credit risk, has become the main target of the state, society, enterprises to manage. From the perspective of CSR, this paper learn from the classic credit risk measurement model to establish credit risk of CSR measurement model in order to manage the credit risk of CSR, and promote sustainable development of the enterprises, at the same time to promote the construction of social credit system .

2. The Academic Review and Research Hypotheses

In the study of the meaning of corporate social responsibility, most scholars directly linked of corporate social responsibility to the interests of stakeholders. ChenyiYe (2009) believes that corporate social responsibility not only maximize the interests of companies and shareholders, but also means all public obligations undertaken by enterprises under the rational choices. Carroll (1991) pointed out that it should apply stakeholder theory to the study of corporate social responsibility, which can indicate the direction of corporate social responsibility and define the scope of social responsibility of the interests of each type of relevant groups. According to the definition of American scholars Clarkson, stakeholders refers to individuals and social groups who have ownership, rights or interests in the past, present or future activities, mainly including stockholders, creditors, suppliers, customers, employees, communities, governments, etc. They are the stakeholders of the business so that companies obliged to be responsible for these economic entities.

In the study of the types of enterprise risk, Chong Wang(2014) pointed out that in all types of risk, one of the oldest risk is credit risk, which has been affected all economic entities. Xinsheng Cheng (2010) divided corporate credit risk into financial credit risk and sales credit risk. From the perspective of business performance and social responsibility, Haimin Cao(2014) indicated the financial credit included capital credit, commercial credit and managerial credit. In the study of the measurement of the risks of the enterprises, scholars focused on the measurement of corporate credit risk. Credit risk assessment model has been widely used in Western countries, which includes Z model, Logit model, KMV model, Credit Metrics model, etc. Chinese scholars also have constructed a lot of corporate credit risk measurement models which suited for Chinese enterprises. Xin Liu (2009) select relevant indicators of financial indicators in profitability, operating capacity, capital structure, liquidity, growth, cash flow situation, using factor analysis and multiple linear regression and Logistic regression analysis to construct out credit risk measurement models. Wenhui Yang (2009) used six factors - shareholders, board of directors, supervisors, managers, information disclosure and stakeholder, as indexes of governance, taking comprehensive index method to build corporate credit rating system. Jiali Chen (2011) based on the interests of the creditors, use principal component analysis and AHP (analytic hierarchy process) to establish the linear regression so as to measure the credit risk of financial information technology public companies. Chong Wang (2014) use DEA model to measure credit risk of the banks, and apply ST and non-ST method to verify the model.

In recent years, scholars researches on the correlations between social responsibility and credit risk. Yanyang Yan (2014) based on the stakeholder theory, use factor analysis and establish multiple linear regression model to obtain results of a significant negative correlation between CSR performance and credit risk, and the degree of correlation increases with the increase of business scale. But the study on credit risk of CSR measurement is relatively insufficient. According to previous study and the purpose of research of my paper, on the basis of the stakeholder theory, this paper will create the indicators of the CSR, and evaluate the credit risk of CSR from 3 aspects - capital credit, commercial credit and managerial credit. The assumption is as followed: the degree of safeguard of the interests of shareholders, creditors, customers, suppliers, employees, government and the public has negative correlation to the credit risk of CSR.

3. Basis of the Measurement of Credit Risk of CSR

From the perspective of the stakeholders, in order to reflect the condition of the enterprises of shouldering CSR to various stakeholders, the paper divides credit risk of CSR into 3 parts - capital credit risk, commercial credit risk and managerial credit risk. In the three aspects, it was further divided into 7 categories which represents the interests of shareholders, creditors, customers, suppliers, employees, government and the public, using a comprehensive way to measure credit risk of CSR, as shown in Figure 1:

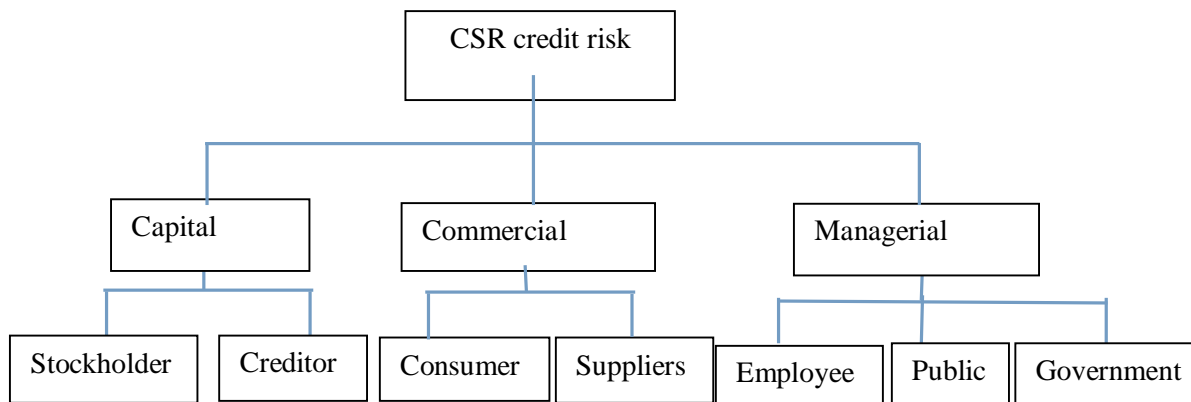


Figure 1: Basis of Measurement of CSR Credit Risk

The main stakeholders involved in corporate capital credit are shareholders and creditors. Shareholders are the company's owners whose interests are directly linked to the operating efficiency. Maximizing the interests of shareholders is the goal of the enterprises. And the businesses have the responsibility and obligation to reap more profits for its shareholders in return.

Producing and operating results and cash flow of enterprises are directly related to whether the corporations have the ability to hand in payment of interest on loans timely, and pay return of principal timely, whether the interests of creditors can be maintained. Thus, shareholders and creditors mainly have capital credit risk.

Corporate commercial credit is primarily valued by consumers and suppliers. Consumers are the lifeblood of gaining access to income of corporations so that they are one of the company's most important stakeholders. To provide consumers with satisfied products and services is a fundamental responsibility of enterprises. And what is most concerned about by consumers is the quality of products and services. Companies can perform the contract as stipulated and hand in the payment of the goods, which are the main credit to the suppliers. Consumers and suppliers mainly have commercial credit risk.

Employees, government and the public are most concerned about is the managerial credit. The level of quality of management of the corporations is direct related to the interests of employees, government and the public. Enterprises have a responsibility and obligation to treat their employees well and to develop the company's articles of association should give more consideration to the interests of employees. Enterprises are obliged to pay taxes in accordance with the laws and regulations to the country and participate in the social welfare causes which government promote, and have a responsibility to provide more opportunities and jobs to the community. Employees, government and the public mainly have, managerial credit risk.

4. Choices of Measurement Methods of Credit Risk of CSR

Credit risk measurement was first developed from commercial banks. It is quite mature for scholars to have study of the credit risk measurement method in the area of financial industry. To measure the credit risk of CSR, it can take advantage of the developed credit risk measurement methods and models.

4.1 Traditional Credit Risk Measurement Models

(1) Z-score model. Z-score model proposed in 1968 by Edward I Altman, which requires strict assumptions. Model is as followed: Z1 is mainly applicable to public companies, and Z2 for private companies. Z3 for non-manufacturing companies.

$$Z1=1.2\times X1+1.4\times X2+3.3\times X3+0.6\times X4+0.999\times X5$$

Among them, X1 = (current assets - current liabilities) / total assets, X2 = retained earnings / total assets, X3 = earnings before income and taxes / total assets, X4 = value of equity / total liabilities, X5 = sales / total assets.

For public companies, when Z1 is less than 1.8, it means credit risk is great. When Z1 is greater than 2.99, the credit risk is small.

$$Z2=0.717\times X1+0.848\times X2+3.107\times X3+0.42\times X4+0.998\times X5$$

Among them, X1, X2, X3, X4 and X5 represent the same meanings as Z1.

$$Z3=6.56\times X1+3.26\times X2+6.72\times X3+1.05\times X4$$

Among them, X1, X2, X3 and X4 represent the same meanings as Z1.

For private companies and non-manufacturing companies, when Z2, Z3 is less than 1.23, the risk is great. When Z2, Z3 is greater than 2.9, the risk is relatively small.

(2) ZETA - score model. In 1977, Altman has created the ZETA model, which is following the Z-score mode as the credit model of second generation. The number of variables change from 5 to 7, and also requires strict assumptions. Model is as followed:

$$ZETA=a\times X1+b\times X2+c\times X3+d\times X4+e\times X5+f\times X6+g\times X7$$

Among them, a, b, c, d, e, f, g respectively represent the coefficients of the variables. Seven variables X1, X2, X3, X4, X5, X6, X7 are representative of seven indicators successively: return on assets, earnings stability index, solvency indicators, profitability indicators, liquidity indicators, capitalization index and scale indicators.

(3) Logit model. Logit model is one of the discrete -choice method model, belonging to the scope of multivariate

analysis, logical distribution formula is:

$$P = \frac{e^z}{1 + e^z}, P \in (0,1)$$

The model uses financial indicators to calculate the probability of being insolvent, and then in accordance with the extent of preference of the risk of banks or investors, they will make decisions about risk to the target enterprises. Logit model is based on the cumulative distribution function, using the maximum likelihood estimation method and is not required to follow the conditions in which variables are normally distributed and covariances are equal to each other. Identification method of Logit model is to first determine the bankruptcy Z value, and then calculated the probability of bankruptcy. When the probability is greater than 0.5, probability of bankruptcy is great. When the probability is less than 0.5, you can determine the financial enterprise is normal.

(4) Probit model. Probit model is a multivariate regression model. It is a generalized linear model, assuming samples subject to normal distribution. First, determining the sample maximum likelihood function, seeking maximal value by maximum likelihood function and gaining parameters a, b. Then using the formula and calculating the probability of bankruptcy. The rule is same as Logit model.

4.2 Modern Credit Risk Measurement Models

(1) Credit Metrics model. J. P. Morgan launched Credit Metrics model in 1997 to quantify the credit risk management. J. P. Morgan believes the changes in credit rating are a direct source of credit risk. The model used theories and methods of portfolio, VaR and use VaR framework to make the assessment and calculation of credit risk. However, it is influenced by important industry data, the economic cycle and other factors.

(2) KMV model. KMV model is used to estimate the probability of default of the borrower established by KMV San Francisco company in 1997. The model considers the credit risk of loans is determined by the market value of the debtor's assets. KMV model is calculated the default distance rather than the default probability. The distance

$$DD = \frac{E(V_A) - DPT}{\sigma_A}$$

to default is expressed as σ_A , which V_A is the value of assets, DPT is point of default at the time of T, and σ_A is the volatility of asset returns. This model is more concerned about systemic risk and short-term default risk and pays less attention on non-systematic risk and long-term default risk. The results of the model are more sensitive to price movements of the stock market.

(3) Credit Risk + model. The assumption of Credit Risk + model is that each of the assets in combination has only two states: default and not default, and in each of the loan portfolio, while the probability of occurrence of defaults of different types of loans are small and independent. Probability distribution of default loan amount each

$$P = \frac{e^{-m} m^n}{n!}$$

period subject to Poisson distribution, ie $n!$. Among them m represents the average number of default of the loan portfolios for the current period, and n is the actual number of defaults of loan portfolios for the current period.

4.3 Feasibility and Superiority of Logit Model

Martin (1977) first used Logit model to predict the probability of default and bankruptcy of banking. He selected 58 banks which had financial difficulties between 1970-1977 in the United States as samples, and chose 8 financial indicators to build Logit model. Ohlson (1980) were excluded from the three major industries - financial services, utilities and transportation, and selected 105 bankrupt companies and 2058 normal -financial companies between 1970-1976 in United States as samples, to construct Logit model with 9 variables and correct rate reaching 92%. Chinese scholars also gave high marks on Logit model. Wu Shinong (2001) selected 70 public companies as samples, and chose 7 indicators from financial indicators to construct 3 kinds of credit risk prediction model, among which Logit model was optimal, with correct rate of 93.5%. Yu Liyong (2004) used internal loan data of commercial banks as samples to establish Logit model, and also made a good predictor of the effect of the credit risk. Li Zhihui (2007) used 195 public companies as samples, and constructed three kinds of risk assessment models, which are linear discriminant model, Logit model and neural network model, where Logit model had the highest accuracy rate. Li Ling (2007) selected 80 A-share public companies in the high-tech area as samples, and selected 22 financial indicators to establish risk prediction model by the principal component analysis and Logistic regression method. Empirical results showed that, for the high-tech enterprises, using this model to predict credit risk earned high accuracy rate. Xun Liao (2008) pointed out Logit model is a individual credit risk assessment method with high accuracy.

Logit model has many advantages, such as its value is between 0 and 1, which helps the probability analysis. Compared to various credit risk measurement methods, taking feasibility and data availability into account, this paper combines researches of previous scholars and research purposes, using statistical software SPSS Statistics 19 and doing Logistic regression analysis, in order to measure the credit risk of corporate social responsibility.

5. Empirical Analysis of the Credit Risk of CSR

5.1 Selection of Samples

The paper selects 94 financial data covering the entire industry in the field of A-share public companies between 2011-2013 in China as samples (data from Wind advisory and GTA database), and in accordance with the ratio of 1: 1, separately selects 47 ST companies and 47 non-ST companies, excluding companies with incomplete data, to select the appropriate financial indicators to carry out Logit regression analysis. Finally it uses the applicability of ST and non ST class method to verify the model. In the paper, factor analysis is used to reduce the dimension of financial indicators, which makes it easier to build Logit model.

5.2 Selection of Indicators

This paper selects 14 financial ratios, representing the uncertainty created by the credit risk of CSR for all stakeholders. The 13 ratios are used as financial indicators in Logit model. It measures credit risk of CSR from 3 aspects - capital credit, commercial credit and managerial credit. As is shown in Table 1:

Credit risk of CSR	Capital credit	Stockholders	Return on equity X_1	Net profit / average shareholders' equity * 100%
			Earnings per share X_2	after-tax profit / total equity
			Paying rate of cash dividend X_3	annual cash dividend / net profit * 100%
		Creditors	Interest coverage ratio X_4	EBIT / financial expenses
			Quick ratio X_5	liquid assets / current liabilities
			Debt to assets ratio X_6	liabilities / total assets * 100%
	Commercial credit	Consumers	Main business cost rate X_7	Main business cost / main business income * 100%
			Sales expenses rate X_8	Sales expenses / main business income * 100%
		Supplies	Turnover rate of accounts payable X_9	(main business cost + ending inventory - beginning inventory) / average balance of accounts payable × 100%
			Cash and accounts payable ratio X_{10}	monetary capital / average balance of accounts payable
	Managerial credit	Employees	employee contribution ratio X_{11}	payments to employees and for employees paid in cash / revenue * 100%
		Government	Tax contribution ratio X_{12}	tax contribution rate of total government tax / main business income * 100%
			Job growth in the contribution ratio X_{13}	(number of workers this year - last year the number of employees) / number of employees last year
		Public	social donations ratio X_{14}	annual total Donations/ annual profit * 100%

Table 1: Credit Risk of CSR Indicators

5.3 Factor Analysis

Through factor analysis, it helps reducing overlapping issues of interference information. Reducing the dimension of the data can improve efficiency on analysis.

According to KMO and Bartlett test for samples were from, we can obtain from Table 2 that KMO value is 0.542, which is quite suitable for factor analysis. Bartlett's test of sphericity value is large, and Sig value is 0.00 which is less than significance level (0.05), meaning that samples are suitable for factor analysis.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.542
Bartlett's Test of Sphericity	Approx. Chi-Square	733.962
	df	91
	Sig.	.000

Table 2: KMO and Bartlett's Test

As can be seen from the table of factor contribution rate, eigenvalues of the first six factors are greater than 1, so that they have strong explanatory power. Therefore we choose the former six factors as the main factor, namely F1, F2, F3, F4, F5, F6, which may represent the vast majority of information of the original variables.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.481	17.725	17.725	2.481	17.725	17.725	2.383	17.024	17.024
2	1.916	13.688	31.413	1.916	13.688	31.413	1.666	11.902	28.927
3	1.488	10.629	42.042	1.488	10.629	42.042	1.485	10.607	39.534
4	1.173	8.378	50.420	1.173	8.378	50.420	1.420	10.140	49.674
5	1.163	8.310	58.730	1.163	8.310	58.730	1.211	8.649	58.323
6	1.026	7.325	66.055	1.026	7.325	66.055	1.082	7.732	66.055
7	.952	6.800	72.855						
8	.813	5.808	78.663						
9	.768	5.488	84.151						
10	.681	4.867	89.018						
11	.534	3.812	92.830						
12	.478	3.411	96.240						
13	.313	2.233	98.474						
14	.214	1.526	100.000						

Extraction Method: Principal Component Analysis.

Table 3: Factors Contribution Rate Table

Rotated Component Matrix^a

	Component					
	1	2	3	4	5	6
Main business cost rate X7	.853	.017	-.076	-.045	-.260	.180
Tax contribution ratio X12	.749	-.029	-.108	-.158	-.039	.225
Earnings per share X2	.704	-.035	.124	.181	.241	-.164
Return on equity X1	.628	.047	-.031	.178	.113	-.233
Cash and accounts payable ratio X10	.096	.895	.036	.135	-.020	.033
Turnover rate of accounts payable X9	-.090	.884	.008	.024	.054	-.062
social donations ratio X14	.086	-.040	-.844	.233	.021	-.003
Debt to assets ratio X6	.020	.008	.778	.315	.007	.004
Interest coverage ratio X4	.110	-.021	-.147	.806	-.004	.061
Quick ratio X5	-.023	.230	.235	.667	-.019	-.071
Sales expenses rate X8	-.072	.117	-.142	-.113	.788	.022
Job growth in the contribution ratio X13	.150	-.086	.152	.134	.521	-.034
Paying rate of cash dividend X3	.373	-.042	.106	.171	-.416	-.283
employee contribution ratio X11	.022	-.032	.021	.033	.033	.907

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

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Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 6 iterations.

Table 4: Factor Loading Matrix

Then according to the values of factor loading table, it draws the conclusion of the relationship between 6 main factors and the variables of the original, and explains the new variables. What can be obtained from the rotary load factor table is that, factor F1 loads larger on factor X2, X7, X12, so that F1 can be seen the factors of interests of shareholders, consumers and government. Factor F2 loads larger on factor X9, X10, so that F2 can be seen as a suppliers interest. F3 loads larger on factor X14, so that F3 can be seen as the factor of the interest of public. F4 loads larger on factor X4, X5, so that F4 can be seen as a factor of the interest of creditor. F5 loads larger on X8, so that F5 can be seen as a factor of the interest of consumers. F6 loads larger on X11, so that F6 can be seen as a factor of the interest of employee.

Finally, according to the data on factors score table, functions of factors are as followed:

$$F1=0.263X1+0.306X2+0.128X3-0.035X4-0.061X5-0.007X6-0.36X7-0.018X8-0.02X9+0.048X10+0.006X11+0.334X12+0.083X13-0.014X14$$

$$F2=0.014X1-0.044X2-0.028X3-0.091X4+0.064X5+0.048X6-0.05X7-0.054X8+0.541X9+0.544X10-0.005X11+0.024X12-0.091X13-0.026X14$$

$$F3=0.023X1-0.095X2-0.048X3+0.166X4-0.093X5+0.511X6-0.018X7-0.071X8+0.024X9+0.006X10-0.054X11+0.025X12-0.114X13+0.6X14$$

$$F4=0.055X1+0.051X2+0.066X3+0.623X4+0.459X5-0.169X6+0.097X7+0.067X8-0.072X9-0.002X10+0.097X11-0.161X12+0.082X13+0.247X14$$

$$F5=-0.128X1-0.246X2+0.319X3+0.001X4+0.17X5+0.029X6-0.179X7+0.646X8-0.004X9+0.049X10-0.015X11+0.000X12-0.453X13+0.000X14$$

$$F6=-0.208X1-0.141X2-0.242X3+0.114X4+0.002X5-0.063X6-0.164X7+0.005X8-0.037X9+0.063X10+0.854X11+0.191X12-0.026X13-0.023X14$$

5.4 Establishment of Log it Model and Test

The paper takes binomial (0,1) as a distribution function to distinguish whether public company is ST class or not. 1 is behalf of ST class, while 0 for non-ST companies.

By regression analysis, according to Omnibus Tests of Model Coefficients, the chi-square value of the model is 181.214, apparently less than significant level of 0.05, showing that the comprehensive test model is very significant. Level of significance of regression coefficients is 0.000, indicating that the regression coefficient is very significant, and the regression model is very effective. Summary can be obtained by the model of the values of Cox-Snell R^2 and Nagelkerke R^2 in Logistic regression model is 0.474 and 0.632 respectively, showing a very good fit of the model.

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	181.214	6	.000
	Block	181.214	6	.000
	Model	181.214	6	.000

Table 5: Omnibus Tests of Model Coefficients

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	209.721 ^a	.474	.632

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Table 6: Model Summary

Because the significance level of constant term is 1.000, the significance level is not high, so that the establishment of the model will not be considered constant terms. Logic model is established as followed:

$$P = \frac{e^z}{1 + e^z}, P \in (0,1)$$

$$Z = -2.599F1 + 0.104F2 + 0.502F3 - 0.678F4 - 0.613F5 + 2.213F6$$

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 ^a	FAC1_1	-2.599	.312	69.199	1	.000	.074
	FAC2_1	.104	.222	.217	1	.641	1.109
	FAC3_1	-.502	.292	2.957	1	.086	.605
	FAC4_1	-.678	.191	12.657	1	.000	.507
	FAC5_1	.613	.222	7.646	1	.006	1.846
	FAC6_1	2.213	.500	19.605	1	.000	9.144
	Constant	.393	.197	3.993	1	.046	1.482

a. Variable(s) entered on step 1: FAC1_1, FAC2_1, FAC3_1, FAC4_1, FAC5_1, FAC6_1.

Table 7: Variables in the Equation

By the model, P can be predicted. If P is greater than 0.5, it can be identified as the ST class company, and if P is less than 0.5, it can be identified as non-ST company. From prediction results of model, in 47 non-ST companies, 43 companies are correctly predicted, which the correct rate of is 91.5%. In 47 ST -class companies, 39 companies are predicted correctly, which the correct rate of is 83%, indicating that the establishment of the Logit model is ideal. The model can correctly measure the credit risk of CSR.

Classification Table^a

Observed			Predicted		Percentage Correct
			ST		
			0	1	
Step 1	ST	0	129	12	91.5
		1	24	117	83.0
Overall Percentage					87.2

a. The cut value is .500

Table 8: Classification Table

6. Management Strategies upon Credit Risk of CSR

With the model above, the credit risk of CSR can be measured effectively. The purposes of measuring risks are to manage and control risks. Companies should take the following strategies for the implementation of management upon the credit risk of CSR.

6.1 Strengthen Internal Control and Establish Allied Institutions about Credit Risk of CSR Management

Enterprises should be in the light of "Enterprise Internal Control Guidelines" to build CSR credit risk management mechanism. An entity of business management and supervision should be clear, and manage the credit risk of CSR from 3 aspects - capital credit, commercial credit and managerial credit, so as to safeguard the interests of stakeholders. Improve supervision institutions and audit committee, and reserve specialized personnel. Focus on construction of corporate culture of integrity and the education of integrity, and undertake regular risk assessments. Equity arrangements, board structure, financial situation and other factors also affect the company's CSR credit risk, so that credit management department should be closely linked with other departments to jointly strengthen internal controls, improve financial performance and achieve sustainable development of enterprises.

6.2 Establish Laws Related to Management System of CSR Credit Risk

Through the establishment of the relevant legal system, a clear boundary of CSR dishonesty can be clear. It can also strengthen efforts to deal with disciplinary violations and create a good atmosphere of honesty and trustworthiness. Improving the disciplinary mechanisms effectively can regulate people's behaviors, and have a good wake-up call on dishonest behaviors.

6.3 Establish Risk Management Information Systems and Risk Rating Agencies

We live in the era of large data, and we should be based on a large number of historical data to establish risk management information systems and public information repository. The experience of social credit system construction in Germany can be learned from, which funded by the government to establish nationwide credit information network and set up database so as to help stakeholders make investment decisions. "Social Credit System Plan (2014-2020 years)," also pointed out that until 2017, China will build a unified platform for credit information, sharing of resources. Funded by the government to establish a risk rating agencies, adopt effective risk measurement methods, use a unified evaluation of corporate social responsibility to measure credit risk, which give reference to the stakeholders, implement supervision enterprises at the meanwhile.

6.4 Increase Power of Supervision by Government, Public, and Community

The limitations of internal controls as the same as the effective implementation of laws and regulations require government, public, and community to carry out powerful supervision. Only in the this way where government, public and community implement supervision in all aspects of fields, can the enterprises always lay the most attention on the interests of all stakeholders all the time. The interests of stakeholders can be maintained in an effective and efficient way, and illegal behaviors can be timely prevented and treated. Then a good atmosphere of integrity society can be established.

7. Acknowledgment

This project is sponsored by Shanghai University of Engineering Science Innovation Fund for Graduate Students.

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