Study on Correlation between CSR Performance and Financial Performance

Han Jianwei

Tianjin University of Science and Technology, Tianjin, China

jianwei@163.com

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Abstract. With the development of economic globalization, corporate social responsibility (CSR) is getting more and more attention. However, there are still some differences on the relationship between CSR performance and corporate financial performance. To explore this problem, we construct the multiple regression model containing CSR indicators and financial performance indicators, and collect 120 categories of data from 60 sample companies in 2013, to carry out descriptive statistical analysis. The empirical results show that, CSR and financial performance are positively correlated.

Introduction

Triple Bottom Line Model. In 1980, international sustainable development authority John Elkington proposed the famous Triple Bottom Line model, for the fulfillment of the social responsibility of the enterprise, as shown in Figure 1.

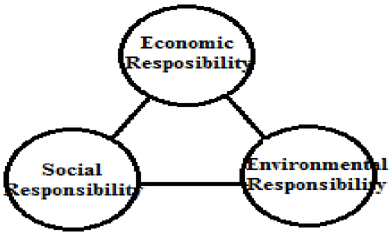

Figure1. Triple Bottom Line Model

The model pointed out that, enterprise behaviors have to meet the bottom line in terms of economic, society and environment, so the responsibility of the enterprise can be divided into the basic economic responsibility, social responsibility and environmental responsibility. The model further revealed that, to meet the triple bottom line, should not only measure and disclose the economic, social and environmental performance of enterprises, but also disclose the values of the enterprise, development process and existing problems. Enterprises should pay attention to expectations of stakeholders and the community, and control the various effects of business activities on the surrounding environment, so that ultimately achieve a basic balance between economic responsibility, social responsibility and environmental responsibility.

Social Impact Hypothesis. The social impact hypothesis mainly focus on the relationship between social responsibility and enterprise financial performance, that is, the extent of corporate social responsibility (CSR) will ring the level of financial performance. Good social performance will promote the improvement of enterprise financial performance. so by improving corporate reputation and visibility, reducing business risks, getting more support from government departments, regulators and financial institutions, to obtain more government support and investment, so that help promote corporate financial performance. Overall, it can be concluded from social impact hypothesis: corporate social performance has a positive impact on its financial performance.

Indicator Model Construction

Hypothesis. Most of studies suggested that the relationship between corporate social responsibility and financial performance is positive. Practice cases also showed, if the enterprise takes some social responsibility actively, it will certainly get more earnings than it pays. Corporate social responsibility is an investment in corporate reputation and corporate image, which could help enterprise optimize labor relations and improve financial performance. Combined with a lot of empirical results on CSR and financial performance, we assume that CSR has a positive effect on financial performance, so we make the following hypothesis:

(1) Hypothesis 1: CSR and financial performance are positively correlated. Good corporate financial performance provides a strong support for the CSR. Enterprise as special social relationship subject undertaking responsibility for wealth creation, if there is no material condition that can guarantee the normal operation of the enterprise management, it cannot complete social responsibility. That is to say, the financial performance of the enterprise is better, the more willing is it to take the initiative to take social responsibility.

(1) Hypothesis 1: the effect of CSR on financial performance is hysteretic. In the short term, CSR may have some negative impact on the financial performance, but in the long run, CSR will benefit the enterprise financial performance improvement and sustainable development. It suggests that, the effect of CSR on financial performance depends on time dimension, that is, such effect is hysteretic.

Indicator Selection. (1) CSR indicators. Since Chinese enterprises have not established improved social responsibility accounting system, to reveal CSR performance, and the publication of CSR report is also voluntary, so it is difficult to collect complete data of corporate welfare expenditure, charitable expenses and environmental expenses. Therefore, we determine the explanatory variables from the stakeholders' perspective of government, creditor, supplier, customer and employee, to reflect the contractual relationship between enterprises and stakeholders, and measure the performance of corporate social responsibility.

a) Responsibility for government. We adopt tax rate to evaluate corporate responsibility for government, reflecting the lawful operation and tax paying of enterprises. The formula is:

$$Tax\ rate = \frac{\text{Income tax} + \text{Business tax}}{\text{Business income}} \tag{1}$$

b) Responsibility for creditor. We adopt cash flow debt ratio to evaluate corporate responsibility for creditor, reflecting the protection level of creditor. The higher the index value, the debt of a creditor will be safer. The formula is:

$$\text{Cash flow debt ratio} = \frac{\text{Net cash flow}}{\text{Total liabilitie}} \tag{2}$$

c) Responsibility for supplier. We adopt accounts payable turnover rate to evaluate corporate responsibility for supplier. The higher the index value, the payment time to supplier is shorter. The formula is:

$$\text{Accounts payable turnover rate} = \frac{\text{Operating costs} + \text{Ending stock} + \text{Beginning stock}}{\text{Average accounts payable}} \tag{3}$$

d) Responsibility for customer. We adopt operating cost ratio to evaluate corporate responsibility for customer, reflecting transfer of profits to customer. The formula is:

$$\text{Operating cost ratio} = \frac{\text{Operation costs}}{\text{Business income}} \tag{4}$$

e) Responsibility for employee. We adopt employee salary ratio to evaluate corporate responsibility for employee. Corporate responsibility for employee is the wages and benefits paid to employees by enterprises, and training and education costs as well. The formula is:

$$\text{Employee salary ratio} = \frac{\text{Cash paid to staff}}{\text{Business income}} \tag{5}$$

(2) Financial performance indicators. Generally, there are two categories of indicators to measure corporate financial performance: accounting indicators and market indicators. Accounting indicators reflect the profitability of corporate assets, and market indicators reflect market value change of enterprise. a) Accounting indicators. For accounting indicators, we select rate of return on common stockholders' equity (ROE) and return on assets (ROA). ROE refers to the net profit at per one dollar of investment, which reflects the ability of enterprises to create value for shareholders. Its calculation formula is:

$$ROE = \frac{\text{Net profit}}{\text{Average net assets}} \tag{6}$$

ROA refers to the net profit at per one dollar of asset, which reflects profitability of enterprise integrated use of assets. Its calculation formula is:

$$ROA = \frac{\text{Earnings before interest and tax}}{\text{Average net assets}} \tag{7}$$

b) Market indicators. For market indicators, we select Tobin Q, which refers to the ratio of market value to enterprise replacement cost. Since the enterprise replacement cost is hard to obtain, so we use total year-end assets to replace it. Its calculation formula is:

$$Tobin\ Q = \frac{\text{Equity market value} + \text{Debt book value}}{\text{Asset book value}} \tag{8}$$

This indicator is the investors' market evaluation for the enterprise, and measurement of enterprise's value. High Tobin Q means investors are optimistic about the enterprise, and the enterprise has great room for growth.

(3) Control variables. Here we introduce two control variables: enterprise scale and enterprise nature. On the one hand, enterprise scale will affect enterprise performance; on the other hand, large-scale enterprise tends to receive more social attention, and it is more expected to take social responsibility by the public. We adopt natural logarithm of enterprise final total assets to represent enterprise scale. State-owned enterprise usually has more social resources than private enterprise, and also has larger effect on enterprise performance. In addition, public expectation of state-owned enterprises to bear social responsibility is more, because it is widely recognized that the purpose of the state-owned enterprise management is not just the profit.

All the indicators above are shown in Table 1:

Table1. Indicators Summary

Variable type	Variable name		Variable code
CSR indicators	Responsibility for government	tax rate	TAX
	Responsibility for creditor	cash flow debt ratio	DEB
	Responsibility for supplier	accounts payable turnover rate	SUP
	Responsibility for customer	operating cost ratio	CUS
	Responsibility for employee	employee salary ratio	SAL
Financial performance indicators	Accounting indicators	rate of return on common stockholders' equity	ROE
		return on assets	ROA
	Market indicators	Tobin Q	TQ
Control variables		enterprise scale	SCA
		enterprise nature	NAT

Model Construction. Based on the hypothesis and analysis method of relationship between CSR and financial performance, we construct the multiple regression model as follow:

$$TQ = b_0 + b_1 DEB + b_2 SAL + b_3 SUP + b_4 CUS + b_5 TAX + b_6 NAT + b_7 SCA + \varepsilon \quad (9)$$

$$ROA = b_0 + b_1 DEB + b_2 SAL + b_3 SUP + b_4 CUS + b_5 TAX + b_6 NAT + b_7 SCA + \varepsilon \quad (10)$$

$$ROE = b_0 + b_1 DEB + b_2 SAL + b_3 SUP + b_4 CUS + b_5 TAX + b_6 NAT + b_7 SCA + \varepsilon \quad (11)$$

In the formulas, ε is a jamming item.

Empirical Analysis and Verification

Data Source. We collect 120 categories of data from 60 sample companies in 2013, including CSR indicators and financial performance indicators, to carry out descriptive statistical analysis, as shown in Table 2:

Table2. Descriptive Statistics

	n	Minimum	Maximum	Mean	Standard Deviation
TQ	60	0.916	4.818	1.367	0.563
ROE	60	-0.929	0.318	0.041	0.169
ROA	60	-0.193	0.241	0.051	0.062
DEB	60	-0.111	0.648	0.125	0.137
SUP	60	1.765	104.034	14.963	17.671
CUS	60	0.608	1.026	0.840	0.106
SAL	600.008	0.008	0.159	0.062	0.036
TAX	60	-0.021	0.167	0.017	0.024
NAT	60	0.000	1.000	0.683	0.469
SCA	60	20.182	26.022	22.258	1.150

Correlation Analysis. Respectively carry out correlation analysis on CSR indicators and financial performance indicators of the 60 sample companies, and conduct two-tailed significance test. The specific results are shown in Table 3:

Table3. Correlation Analysis

	TQ	ROE	ROA	DEB	SUP	CUS	SAL	TAX	NAT	SCA
TQ	1	0.175	0.428	0.432	0.379	-0.054	0.069	0.058	0.118	-0.166
ROE	0.175	1	0.895	0.108	-0.067	-0.460	0.018	0.431	0.033	0.195
ROA	0.428	0.895	1	0.217	0.003	-0.521	0.062	0.420	0.051	0.170
DEB	0.432	0.108	0.217	1	0.130	-0.115	0.239	0.028	0.960	0.001
SUP	0.379	-0.067	0.003	0.13	1	0.377	-0.327	-0.156	-0.015	-0.214
CUS	-0.054	-0.46	-0.521	-0.115	0.377	1	-0.610	-0.617	0.123	0.063
SAL	0.069	0.018	0.062	0.239	-0.327	-0.61	1	0.127	-0.052	-0.347
TAX	0.058	0.431	0.42	0.028	-0.156	-0.617	0.127	1	0.034	0.051
NAT	0.118	0.033	0.051	0.96	-0.015	0.123	-0.052	0.034	1	0.030
SCA	-0.166	0.195	0.17	0.001	-0.214	0.063	-0.347	0.051	0.03	1

(1) Correlation between TQ and CSR indicators. From Table 3, TQ is significantly correlated with ROA at the 1% level, but its correlation with ROE is not significant. on the on hand, this illustrates that under the influence of the financial crisis, corporate market indicators will deviate from accounting indicators; on the other hand, it reveals that enterprise operating capacity of total assets can effectively maintain the market value of the enterprise. In summary, TQ is significantly correlated with SUP, and the correlation coefficient between TQ and DEB is than other indicators.

(2) Correlation between ROE and CSR indicators. The result shows that, ROE is significantly correlated with CUS and TAX at the 1% level, but its correlation DEB, SUP and SAL is not significant.

(3) Correlation between ROA and CSR indicators. The result shows that, the correlations between ROA and all the CSR indicators are almost the same as ROE. But it is notable that, the correlation between ROA and TQ is significantly higher than that between ROE and TQ.

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