

Research Article

Correlation Analysis between Corporate Social Responsibility and Financial Performance of Chinese Food-processing Enterprises

Yu-jin Fu and Ju-qin Shen

School of Business, Hohai University, Nanjing, P.R. China

Abstract: This study is to clarify the relationship between corporate social responsibility and the enterprise financial performance. On the basis of the stakeholder theory and social contract theory which explain the connotation of corporate social responsibility, this study uses the panel data from 63 listed Chinese food-processing companies to empirically test whether corporate social responsibility can significantly affect the financial performance. After putting forth the research hypothesis and quantifying the research index in the perspective that corporate social responsibility is the contract followed by various stakeholders, correlation analysis and multiple regression are commenced in the research process. The regression result shows that partly of the variables reflecting corporate social responsibility, such as the ratio of net cash flow from operating to liabilities and the ratio of business taxes and surcharges to main business income, are positively correlated with variables describing financial performance, while others, such as the ratio of social donation expenditure to main business income, are not.

Keywords: Corporate social responsibility, financial performance, food-processing enterprises, multiple regression

INTRODUCTION

Latest reviews: Since the early 1980s, the study of Corporate Social Responsibility has become a hot topic in the academic circle all around the world.

Most researches indicate that fulfilling corporate social responsibility will have a positive impact on financial performance. Preston and O'Bannon (1997) studied the financial performance of 67 American enterprises and their social responsibility from 1982 to 1992. In their study, Rate of Return on Total Assets, Rate of Return on Net Assets and The Profit Rate of Investment were used to represent corporate financial performance, while the results of a survey of corporate social reputation were used to represent corporate social responsibility. Some scholars took the level of corporate social reputation as dependent variable and size, productivity, profitability as independent variables in a multiple regression analysis to study the relationship between corporate social responsibility and financial performance (Stanwick and Stankwick, 1998). Lev *et al.* (2010) took consumer satisfaction as an intermediary in their research studying the relationship between corporate social responsibility and financial performance. Apart from them, some other scholars emphasized the important role played by corporate social responsibility in improving financial performance as well (Hansen *et al.*, 2011; Muller and Kraussl, 2011).

A few research indicate the correlation between corporate social responsibility and financial

performance is negative or not clear. Some scientists insisted that fulling corporate responsibility would negatively affect corporate financial performance in the view of cost (Barnett and Salomon, 2006). Brammer and Millington, (2005) thought that fulling corporate social responsibility would inevitably increase the cost of management, thus affecting financial performance on the basis of results of an empirical study. Makni *et al.* (2009) took 179 enterprises as example and did an causality test. The results showed that the correlation between corporate social responsibility and financial performance was not clear. Bowman and Haire (1975) and Lankoski (2000) found that fulling corporate social responsibility has a significant u-shaped non-linear relationship with corporate financial performance.

Research on corporate social responsibility in academic circles in China is still in the stage of tracking and digestion and the academic circle has not formed united knowledge about corporate social responsibility. More researches need to be carried out.

CONTEXT AND LITERATURE REVIEW

After China entering WTO, modern enterprise pays more and more attention to the implement of corporate social responsibility because of the internationalization of enterprise competition. However, enterprises, especially private enterprises, which are strongly interest-motivated, often ignores their social responsibility. In recent years, food safety accidents, such as SanLu milk; Shuanghui; Mengniu milk occur

regularly. Food safety event, such as the illegal use of non-food material and abuse of food additive, has destroyed consumers' confidence of food-processing enterprises. Frequently-occurred food safety event reflect the deficiency in corporate social responsibility of Chinese food-processing enterprises. A view to corporate social responsibility holds that fulfill corporate social responsibility will be an extra consumption of enterprise resources and increase corporate operating cost. Thus, the implement of corporate social responsibility will make an inhibition impact on corporate financial performance. However, in the long turn, enterprises should realize that the implement of corporate social responsibility will bring about further permanent positive changes in their financial performance, such as promoting the brand image; improving corporate reputation; improving loyalty of customers and employees and so on. Thus, the issue of the correlation between corporate social responsibility and financial performance has aroused a lot of attention from scholars at home and abroad.

Objective of the study: This study is to clarify the relationship between corporate social responsibility and the enterprise financial performance. In the current market condition, studying the effect of corporate social responsibility on financial performance will not only guide business decision-makers to make the right decisions, but also show the companies their strength and weakness. Chinese food-processing enterprises can adjust their overall strategy effectively and achieve high market share and profits depending on the research results. In addition, building a model for analyzing and verifying the data of Chinese food-processing enterprises will clarify the impact of performance of corporate social responsibility to financial performance. It can be the motivation of Chinese food-processing enterprises to fulfill social responsibility conscientiously. It will make Chinese food-processing enterprises pay more attention to their responsibility for customers. An effective supervision and guarantee mechanism will be set up through an organic combination of government control, subscriber supervision and enterprise self-discipline which is important to the sustainable development of Chinese food-processing enterprises. Correlation analysis between corporate social responsibility and financial performance of Chinese food-processing enterprises is necessary.

MATERIALS AND METHODS

In the perspective of social contract theory, corporate is an object of a collection of contracts which include the contract with shareholders, employees, creditors, suppliers, consumers, the government, the community and various stakeholders. Corporate social contracts is an important component of social contracts. All kinds of social contracts will be influenced by internal and external environment and they will also

influence each other, restrict each other and interact to each other. Corporate social contract is constrained not only by explicit contract such as laws and policies, but also by implicit contract such as moral and self-discipline. Corporate social contract is constrained not only by internal contract with shareholders and employees, but also by external contract with the government and the community. So, only when the working condition and interests and benefits are guaranteed in the corporate internal contract, will employees devote themselves to production. Increasing the spending on staff training and employee's welfare may be positive to corporate financial performance. External contract does not have a direct relationship with corporate financial performance, but in the long term, ensuring the quality of their products and services, paying taxes on time and protecting the environment will help companies to establish a good corporate image and good reputation. The completion of external contract may be a strong weapon to vanquish the enemy in the market competition.

Assumption: The financial performance of food processing enterprises are positively related with their social responsibility.

Variable selection:

Selection of the variables reflecting financial performance: In this study, accounting indicators which reflect the profitability of book equity and marketing indicators which reflect the change of enterprise market value are used to describe the financial performance of Chinese food-processing enterprises.

On the one hand, this study selects ROE (Rate of return on common stockholders' Equity) and ROA (Asset profit Ratio) as the evaluation indicator describing the financial performance of Chinese food-processing enterprises. ROE indicates the ability of enterprises to create value for shareholders, while ROA indicates the ability of enterprises to make comprehensive use of assets to make profits. On the other hand, Tobin's q is used in this study to describe the market value of Chinese food-processing enterprises. It gets up a bridge between the hypothesized economy and the entity economy, we can observe two markets at the same time by utilizing Tobin's q, which has met demands of realistic economy research.

Selection of the variables reflecting corporate social responsibility.

Corporate social responsibility to the creditor: In this study, EMP (the ratio of Net Cash Flow from Operating and Liabilities) is used to reflect the corporate's responsibility for creditors and measure the security level of creditors. The higher the index is, the less risky the creditor is.

Corporate social responsibility to the staff: This study uses EI (the ratio of staff salary to main business

Income) to describe the corporate's responsibility for the staff. The responsibility of enterprise to its staff includes not only the wages and benefits, but also the expenses spending for staff training and re-education.

Corporate social responsibility to the government:

This study uses GOV (the ratio of business taxes and surcharges to main business income) to estimate the contribution business made to the government. The higher the index is, the more conscious the enterprise is. The enterprise takes on more social responsibility.

Corporate social responsibility to its suppliers:

In this study, SUP (account Payable turnover rate) is used to measure the corporate's responsibility for its suppliers. A higher SUP indicates it takes shorter for the enterprise to pay for its suppliers and this enterprise thinks more about its supplier's benefit.

Corporate social responsibility to the consumers:

For food-processing enterprises, product safety is the ultimate responsibility for their customers. This study measures the corporate's responsibility for its customers by judging whether it meets the creation of quality systems like ISO9000.

Others: This study choose SD (the ratio of Social Donation expenditure to main business income) to describe the corporate's responsibility for public welfare. In this study, PR (the Ratio of fines forfeits and Penalty expenditure to main business income) indicates whether a certain company comply with laws and ISO14000 certification implies whether this company takes its role as being environmental friendly. These indicators all reflect different aspects of corporate social responsibilities.

Selection of the control variables: This study introduces two control variables: the scale of the enterprise and the enterprise nature.

On the one hand, the scale of the enterprise will affect the enterprise performance, on the other hand, large enterprises often receive more attention from the public who expects large enterprises to take on more social responsibility. This study uses the natural logarithm of total assets to represent the enterprise scale.

State-owned enterprises generally have more social resources than private enterprises which will have large affect on enterprise performance. Also the public expects state-owned enterprises to take on more social responsibility. This study distinguishes the nature of sample enterprises by checking their largest shareholder.

Model construction:

Multiple regression model:

$$ROE = \beta_0 + \beta_1EMP + \beta_2EI + \beta_3GOV + \beta_4SUP + \beta_5CON + \beta_6SD + \beta_7PR + \beta_8EP + \beta_9Size + \beta_{10}Owner + \varepsilon$$

$$ROA = \beta_0 + \beta_1EMP + \beta_2EI + \beta_3GOV + \beta_4SUP + \beta_5CON + \beta_6SD + \beta_7PR + \beta_8EP + \beta_9Size + \beta_{10}Owner + \varepsilon$$

$$TQ = \beta_0 + \beta_1EMP + \beta_2EI + \beta_3GOV + \beta_4SUP + \beta_5CON + \beta_6SD + \beta_7PR + \beta_8EP + \beta_9Size + \beta_{10}Owner + \varepsilon$$

Sample selection and data sources This study selected 63 food-processing listed companies from Shanghai Stock Exchange and Shenzhen Stock Exchange, excluding those with incomplete data, changing core business or having a record of ST or *ST.

RESULTS

Analysis of the correlation between indicators of corporate social responsibility and indicators of financial performance:

After correlation analyzing, we could draw the conclusion that food-processing listed companies have an outstanding positive correlation among ROE, ROA and Tobin Q in the 0.01 confidence level. It shows that the accounting indicators and market indicators are strong indicators to measure the financial performance of the enterprise. At the same time, we find that EMP; GOV; SUP; CON; PR; ER and Size are positively related with ROE and ROA, which means the scale of the enterprise; the liquidity of the assets; tax; account payable turnover; fines forfeits and penalty expenditure; and the authentication of quality system can affect the enterprises' financial performance largely. However EI; SD; and the nature of enterprises have little effect on financial performance indexes, indicating that committing to the interest of the public and employees has not attracted much attention of Chinese food-processing companies. There is no significant correlation between these variables.

Regression analysis on effect of corporate social responsibility on financial performance:

R, valuing between 0 and 1, indicating the close degree between the dependent variable and independent values in multiple linear regression analysis. The higher the value of R is, the closer the relationship is. In the regression analysis between ROE and variables representing corporate social responsibility, R is 0.607 and R² is 0.368. In the regression analysis between ROA and variables representing corporate social responsibility, R is 0.605 and R² is 0.366. In the regression analysis between TB and variables representing corporate social responsibility, R is 0.635 and R² is 0.404.

In the regression analysis between ROE and variables representing corporate social responsibility, F is 10.499. In the regression analysis between ROA and variables representing corporate social responsibility, F is 16.706. In the regression analysis between TB and

Table 1: Variable list

Variable type			Variable name	Calculation
The dependent variables	Financial performance		ROE	Net profit/the average net assets
			ROA	EBIT/the average total assets
			TQ	-
The independent variables	Corporate social responsibility	Creditors	EMP	Net cash flow from operating/liabilities
		Staffs	EI	Staff salary/main business income
		Government	GOV	Business taxes and surcharges/main business income
		Suppliers	SUP	Account payable turnover rate
		Consumers	CON	Authentication of ISO9000
		Public welfare	SD	Social donation expenditure/main business income
		Law-abiding	PR	Fines forfeits and penalty expenditure/main business income
The control variables	Environment		ER	Authentication of ISO14000
			Size	LN (total assets)
			Owner	The largest shareholder

Table 2: Regression analysis table of ROE

Model		Unstandardized coefficients		Standardized coefficients		Sig.
		B	S.E.	β	t	
1	(Constant)	-0.906	0.238		-3.449	0.001
	EMP	0.139	0.033	0.281	4.598	0.000
	EI	-0.472	0.227	-0.142	-2.077	0.039
	GOV	0.702	0.178	0.212	3.516	0.003
	SUP	0.004	0.003	0.230	1.630	0.109
	CON	-0.007	0.066	-0.018	-0.271	0.004
	SD	2.283	4.173	0.099	0.638	0.647
	PR	-36.332	13.790	-0.162	-2.635	0.009
	EP	-0.002	0.019	-0.008	-0.091	0.927
	Size	0.033	0.020	0.199	3.602	0.000
	Owner	-0.011	0.016	-0.042	-0.681	0.497

S.E.: Standard error

variables representing corporate social responsibility, F is 14.335. Probability values for A are all 0.000, which means the linear relationship between indicators representing financial performance and indicators representing corporate social responsibility is significant. As a result, this model is statistically significant.

It can be seen from Table 1 that six variables which are EMP; GOV; SUP; PR (inverse index); SD; Size have positive effects on ROE representing financial performance. However variables of EI; CON; EP and Owner are negatively correlated with ROE. EMP and Size significantly affect the rate of return on total assets ROE in the confidence level of 0.01 among all the variables (Table 2). Chinese food-processing enterprises fulfill liabilities to their creditors by increasing net cash flow from operating, fulfill the responsibilities for the government through increasing the ratio of business taxes and surcharges to main business income, fulfill the responsibilities for their suppliers through increasing account payable turnover rate and fulfill the responsibilities for the public by increasing endowment and reducing fines. All these methods play a positive role on the variables reflecting financial performance.

Eight variables which are EMP; GOV; SUP; SD; PR (inverse index); EP; Size; and Owner have positive effects on ROA representing financial performance. However variables of EI and PR are negatively

correlated with ROA. EMP; GOV and Size significantly affect Asset Profit Ratio ROA in the confidence level of 0.01 among all the variables. Chinese food-processing enterprises fulfill liabilities to their creditors by increasing net cash flow from operating, fulfill the responsibilities for the government through increasing the ratio of business taxes and surcharges to main business income, fulfill the responsibilities for their suppliers through increasing account payable turnover rate, fulfill the responsibilities for the public by increasing endowment and reducing fines and become environmental-friendly by achieving the authentication of ISO14000. All these methods will play a positive role on the variable of ROA.

It can be concluded from Table 3 that seven variables which are EMP; EI; GOV; SUP; PR (inverse index); EP and Size have positive effects on TB representing corporate market value. However, variables of SD PR and Owner are negatively correlated with TB. EMP significantly affects Tobin Q in the confident level of 0.01 (Table 4). Chinese food-processing enterprises fulfill liabilities to their creditors by increasing net cash flow from operating, fulfill the responsibilities for the government through increasing the ratio of business taxes and surcharges to main business income, fulfill the responsibilities for their suppliers through increasing account payable turnover rate, fulfill the responsibilities for the public by increasing endowment and reducing fines and become environmental-friendly by achieving the authentication

Table 3: Regression analysis table of ROA

Model		Unstandardized coefficients		Standardized coefficients		Sig.
		B	S.E.	β	t	
2	(Constant)	-0.576	0.149		-3.622	0.000
	EMP	0.071	0.020	0.281	6.023	0.000
	EI	-0.296	0.175	-0.123	-1.975	0.050
	GOV	0.527	0.119	0.283	4.516	0.000
	SUP	0.004	0.003	0.230	1.630	0.023
	CON	-0.011	0.018	-0.037	-0.604	0.547
	SD	3.283	3.173	0.067	1.198	0.232
	PR	-19.049	9.445	-0.116	-2.071	0.040
	EP	0.037	0.059	0.078	0.629	0.532
	Size	0.033	0.020	0.199	1.602	0.000
	Owner	0.007	0.011	0.031	0.558	0.578

S.E.: Standard error

Table 4: Regression analysis table of TB

Model		Unstandardized coefficients		Standardized coefficients		Sig.
		B	S.E.	β	t	
3	(Constant)	0.060	3.694		0.016	0.987
	EMP	1.540	0.470	0.257	3.273	0.001
	EI	6.962	3.527	0.153	1.974	0.050
	GOV	0.673	2.765	0.019	0.243	0.808
	SUP	0.014	0.018	0.059	0.759	0.449
	CON	-0.879	0.413	-0.161	-2.130	0.035
	SD	-34.670	71.826	-0.034	-0.483	0.630
	PR	-453.550	228.550	-0.138	-1.984	0.049
	EP	0.127	0.302	0.035	0.421	0.674
	Size	0.118	0.176	0.052	0.669	0.504
	Owner	-0.694	0.255	-0.190	-2.726	0.007

S.E.: Standard error

of ISO14000. All these methods will play a positive role on increasing the corporate market value.

CONCLUSION AND DISCUSSION

Conclusion: With the rapid development of economy, domestic and international competition is becoming more and more intense. Not only the food and beverage industry, but also all business should actively fulfill their responsibilities to stakeholders, thus enhancing their overall competitive strength for social harmony and economy development. Therefore, as the main body of market economy, companies should not only see the immediate benefits, but abandon the goal of long-term development. Chinese food-processing companies should actively committing themselves to fulfill social responsibility which will help companies build internal and external economic environment for sustainable development

This study uses the panel data from listed Chinese food-processing companies to empirically test whether corporate social responsibility can significantly affect the financial performance. The regression result show that partly of the variables reflecting corporate social responsibility is positively correlated with variables describing financial performance, while others are not.

In the regression analysis between variables reflecting corporate social responsibility and variables describing financial performance, the result shows that fulfillment of the responsibility for creditors;

government; suppliers, as well as the law is beneficial to improve the financial performance of Chinese food-processing companies. Meanwhile, the correlation between indicators reflecting fulfillment of the responsibility to the public welfare; environment and corporate financial performance indicators is uncertain. Enterprises fulfilling their responsibilities to employees and consumers is negatively related with their financial performance. Increasing the expenditure on their staffs and consumers will increase the current financial burden of Chinese food-processing companies. Viewing from the current financial performance index, the current inflow of economic benefits will be reduced. It explains why more and more food and beverage enterprises are ignoring food safety in order to achieve maximum benefits in the short term. In the short term, it can improve the corporate financial performance, but from a long-term perspective, companies irresponsible for customers will be eliminated sooner or later.

In a word, fulfilling corporate social responsibility will have a positive impact on the company's financial performance. Even though, it may increase current operating costs, as time goes on, it will promote corporate financial performance. In the long term, fulfilling corporate social responsibility and maximizing profits share the same goal of maximizing corporate value. Fulfilling corporate social responsibility will not have a negative impact on financial performance. Moreover, corporate social responsibility should be regarded as an integral part of

enterprise strategy. Enterprises should establish a win-win situation with market stakeholders such as shareholders; creditors; suppliers; customers, social stakeholders such as government; employees and environment stakeholders. On the basis of protecting the interests of various stakeholders, enterprises can make their goal of achieving long-term sustainable development.

Discussion:

Firstly, reinforcing the government supervising:

Strengthening corporate social responsibility is not only the need for corporate sustainable development, but also the requirements of economy development. By strengthening government regulation, developing and implementing policies and so on, the performance of corporate social responsibility will be included in the corporate cost accounting, becoming the inherent incentive of enterprise development. Facing the fierce international competition, companies should improve their legal system of corporate social responsibility by taking the method of establishing a system to protect rights and interests of workers, improving property right system of national resources, regulating the polices protecting the environment and consumers. The government should also develop a bidirectional relation with enterprises to promote the implement of corporate social responsibility. If the government can deliver favorable essential services for enterprises to fulfill corporate social responsibility, companies may obey the law consciously and pay taxes actively, which will help them to balance short-term benefits and long-term development goals. Then, the government should develop production quality standards, environment protection standards and labor standards. The government should guide enterprises to eliminate backward production technology and use energy saving technology to adapt to economic globalization. Last but not least, the government should improve enterprise credit system and develop the Blacklist of enterprises who does not fulfill the social responsibility to guide integrity management and safe production.

Secondly, establishing a supervision mechanism of corporate social responsibility:

The supervision mechanism of corporate social responsibility should include law supervision, social supervision and self supervision. Supervision, along with punishment for dishonesty can encourage enterprises to fulfill corporate social responsibility for stakeholders effectively and actively. Law supervision is the premise and guarantee of the supervision mechanism of corporate social responsibility. Only when enterprises comply with laws and regulations, can they fulfill corporate social responsibility effectively. Social supervision is the external supervision power of the supervision mechanism. Social supervision has restraint function on social behavior of enterprises. It helps enterprises to

keep with the requirement of social development and works as the criterion eliminating unqualified enterprises. Self supervision is the internal supervision power of the supervision mechanism. Only when enterprises realize that fulfilling corporate social responsibility is beneficial not only to the current financial performance, but also to sustainable development, can they devote themselves to fulfill corporate social responsibility. Only when corporate social responsibility for the interests of the whole economic society, can we balance social and economic progress.

Thirdly, raising the culture quality level of customers overall:

The improvement of the culture quality level of customers will tighten the labor market and push up wages, further boosting consumption. With the continuous improvement of living standards and demanding levels of customers, people would then spend more reasonably and raise their awareness of environment and social responsibility. Pay attention to the improvement of culture quality level of customers can not only regular customer behavior, but also help customers fight against the infringement of their rights or interests using legal means. It works as constrains on Chinese food-processing enterprises, leading to the improvement of the awareness of corporate social responsibility.

Last but not least, improving the quality of staffs:

Enterprises should pay attention to the training of staffs. The improvement of labor skills will be beneficial not only for enterprises to make more profits and create enterprise value, but also for enterprises to carry out innovation research, being the core competitive advantages of companies in the fierce market competition. Meanwhile, enterprises should also pay attention to improving the legal quality of their employees. It is necessary for employees to understand the law, be law-abiding and improve the legal awareness of risk prevention. So, they can protect themselves against illegal infringement and help enterprises to fulfill corporate social responsibility effectively.

REFERENCES

- Barnett, M.L. and R.M. Salomon, 2006. The curvilinear relationship between social responsibility and financial performance. *Strat. Manage. J.*, 27(11): 1101-1122.
- Bowman, E.H. and M. Haire, 1975. A strategic posture towards corporate social responsibility. *Calif. Manage. Rev.*, 1(18): 49-58.
- Brammer, S. and A. Millington, 2005. Corporate reputation and philanthropy: An empirical analysis. *J. Bus. Ethics*, 61(1): 29-44.

- Hansen, S.D., B.B. Dunford, A.D. Boss, R.W. Boss and I. Angermeier, 2011. Corporate social responsibility and the benefits of employee trust: A cross-disciplinary perspective. *J. Bus. Ethics*, 7(2): 1-17.
- Lankoski, L., 2000. Determinants of Environmental Profit: An Analysis of the Firm-Level Relationship between Environmental Performance and Economic Performance. Ph.D. Thesis, Helsinki University of Technology, Helsinki.
- Lev, B., C. Petrovits and S. Radhakrishnan, 2010. Is doing good good for you? How corporate charitable contributions enhance revenue growth. *Strat. Manage. J.*, 31(2): 182-200.
- Makni, R., C. Francoeur and F. Bellavance, 2009. Causality between corporate social performance and financial performance: Evidence from Canadian firms. *J. Bus. Ethics*, 3(89): 409-422.
- Muller, A. and R. Kraussl, 2011. Doing good deeds in times of need: A strategic perspective on corporate disaster donations. *Strat. Manage. J.*, 32(9): 911-929.
- Preston, L. and D.P. O'Bannon, 1997. The corporate social-financial performance relationship. *Bus. Soc.*, 36(4): 419-429.
- Stanwick, P.A. and S.D. Stankwick, 1998. The relation between corporate social performance and organizational size, financial performance and environmental performance: An empirical examination. *J. Bus. Ethics*, 17(2): 195-205.