

Full Length Research Paper

The linkage between corporate social performance and corporate financial performance

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Accepted 17 December, 2009

The concept of corporate social responsibility (CSR) emerged in the early 20th century in the U.S. However, a specific connotation of CSR has not been unified, though the norms and standards related to CSR are developing now. There are more Taiwanese enterprises participating in caring communities, and contributing to the community with specific actions to publicize their CSR related activities. Previous empirical studies have indicated an unclear relationship between CSR and financial performance, and literature has pointed out that innovation has a great impact upon CSP and corporate financial performance (CFP). Therefore, size and R&D (research and development) are adopted in this study as control variables to investigate the relationship between CSP and CFP. In this study, companies listed in the TSEC Taiwan 50 Index and TSEC Taiwan Mid-Cap 100 Index are included as samples to analyze the link between CSP and CFP, and regression analysis is used in this study. The results of this study point out that previous CSP has positive impact on the return on assets for the next period, however, previous CFP has nothing to do with the latter CSP. In considering R&D and size, the previous CSP has a positive correlation with the latter return on assets. In addition, CSP has a negative correlation with return on equity in the financial industry, and CSP has nothing to do with CFP in the electronic industry.

Key word: Corporation financial performance, corporation social performance, corporation social responsibility, R&D.

INTRODUCTION

The concept of CSR (corporate social responsibility) emerged in the early 20th century in the U.S. It is mainly about whether a corporate should be responsible for its stakeholders, including its customers, shareholders, employees, suppliers and the community. Although the subject of CSR was proposed in the early 20th century, it was never attached with great importance until an outbreak of a series of events, including the Enron fraud, at the end of 2001, which highlighted the issue of corporate governance, as well as Nike with its sweatshops highlighting the issue of insufficient labor rights protection in developing countries, the Coca-cola bottle pollution

incident in India highlighting environmental issues of water resource protection, the tainted milk incident involving the Japanese Snow Brand Dairy Co. in 2000, and China's Sanlu melamine milk poisoning incident in 2008. Such a series of scandals involving major enterprises suggests that more stakeholders will suffer if CSR is not sufficiently recognized.

In the 21st century, in addition to profit maximization to create value for shareholders, enterprises are devoted to CSR related activities, and strive to instill such concepts into corporate culture and business operations in order to create higher social value. In 2003, the Institute of Business Ethics (IBE) in London released a report, and pointed out that there was a general lack of trust between investors and corporate leadership. About 80% of interviewees suggested, "major companies should take social responsibilities". Hence, commitment to CSR can enhance a company's reputation, and thus, further win the

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trust of investors and stakeholders. Moreover, under the requirements of the international community, companies can no longer pursue profit maximization as their sole purpose. A responsible company should take social responsibility in business.

The specific connotations of CSR have not been unified, however, the norms and standards related to CSR are developing now. The Investment Department of the Ministry of Economy began promoting in 2000 the "OECD Guidelines for Multinational Enterprises" and CSR-related issues, expecting Taiwanese enterprises to put greater emphasis on CSR. As a result, increased numbers of Taiwanese enterprises have begun to add the business concept of a caring community, and contribute to the community with specific actions, publishing reports on their CSR related activities to create a better business environment.

The topic of CSR has been attached with greater importance in various countries, and companies create corporate social performance (CSP) as they fulfill such corporate social responsibilities. However, it is debatable whether companies should be devoted to CSR related activities or whether enhancing CSP can result in better CFP. In review of past literature, the study on the relationship between CSP and CFP is inconclusive (Ullman et al., 1985).

Many empirical studies have pointed out the uncertain relationship between CSP and CFP (Alexander and Buchholz, 1982; Aupperle, Carroll and Hatfield, 1985; Ullman, 1985; Shane and Spicer, 1983); and some studies have pointed out that the relationship between CSP and CFP have positive correlation (Wokutch and Spencer, 1987; McGuire, Schneeweiss and Sundgren, 1988; Waddock and Graves, 1997); while other studies pointed out that the relationship between CSP and CFP was negative correlation (Marcus and Goodman, 1986; Lerner and Fryxell, 1988; Holman, New and Singer, 1990).

In the causal relationship between CSP and CFP; it may be the commitment to CSP activities that result in rising costs and lower CFP, or it may be due to its commitment to CSP, its business reputation is enhanced to improve its CFP. Consequently, CSP affects CFP. Contrarily, it may be attempts to improve its CSP in order to hide its poor CFP, or thanks to high CFP, the business is willing to spend more on CSR related activities to benefit society, allowing CFP to affect CSP. On the premise of the unclear causal relationship between CSP and CFP, companies listed in TSEC Taiwan 50 Index and TSEC Taiwan Mid-Cap 100 Index are included as samples to analyze the relationship between CSP and CFP.

LITERATURE REVIEW

The measurement of corporate social performance

Methods proposed in past literature to measure CSP are

varied, and include the KLD (Kinder, Lydenberg, Domini) Index Method (Waddock and Graves, 1997) and the AReSE method (Charles-Henri and Stéphane, 2002). The KLD rating classifies eight CSP assessment indicators with special attention to the five that provide multi-aspect assessments of stakeholder-related relationships, which may produce major impact on corporate strategy (Prahalad and Hamel, 1994). In particular, community relationships, employee relationships, emphasis on environmental performance, product features, and treatment of women and disadvantaged groups (Waddock and Graves, 1997).

Although AReSE rating uses a different assessment mode, it also lists five characteristics of CSR in its assessment rules, including ER—employee relationships, ENV—environment, SHA—shareholder relationships, PRD—product quality relationships with suppliers and customers, and COM—community.

The link between corporate social performance and corporate financial performance

The relationship between corporate social performance (CSP) and CFP has been a hot debate topic of scholars for a half century (Dodd, 1932; Jarrell and Peltzman, 1985; Hoffer et al., 1988; Preston and O'Bannon, 1997; Waddock and Graves, 1997; Griffin and Mahon, 1997; McWilliams and Siegel, 2000; and Simpson and Kohers, 2002). The empirical study results on the CSP and CFP link have never been in agreement, as some studies determined negative correlation, some determined positive correlation, while others determined no correlation at all.

The viewpoint for positive correlation between CSP and CFP suggests that as a company's explicit costs are opposite of the hidden costs of stakeholders, therefore, this viewpoint is proposed from the perspectives of avoiding cost to major stakeholders and considering their satisfaction (Cornell and Shapiro, 1987). In addition, this theory further infers that commitment to CSR would result in increased costs to competitiveness and decrease the hidden costs of stakeholders. This argument is meaningful and reasonable, as good relationships with employees, suppliers, and customers are necessary for the survival of a company. Bowman and Haire (1975) pointed out that some shareholders regard CSR as a symbolic management skill, namely, CSR is a symbol of reputation, and the company reputation will be improved by actions to support the community, resulting in positive influence on sales. Therefore, when a company increases its costs by improving CSP in order to increase competitive advantages, such CSR activities can enhance company reputation, thus, in the long run CFP can be improved, by sacrificing the short term CFP.

The viewpoint for negative correlation between CSP and CFP suggests that the fulfillment of CSR will bring competitive disadvantages to the company (Aupperle et

al., 1985) as the consequential costs may request other methods or need to bear other costs. When carrying out CSR activities, increased costs will result in little gain if measured in economic interests. When neglecting some stakeholders, such as employees or the environment, result in a lower CSP for the enterprise, the CFP may be improved. Hence, Waddock and Graves (1997) indicated that this theory was based on the assumption of negative correlation between CSP and CFP.

Some other studies suggested that CSR is not related to CFP at all. Ullmann (1985) pointed out that there is no reason to anticipate the existence of any relationship between CSR and CFP, as there are many variables in between the two. On the other hand, the issue of CSP measurement may also cover the link between CSP and CFP (Waddock and Graves, 1997). McWilliams and Siegel (2000) also proved that the relationship between CFP and CSP would disappear with introduction of more accurate variables, such as the R&D strength, into the economic models.

RESEARCH DESIGN

Data

In this study, companies listed in the TSEC Taiwan 50 Index and TSEC Taiwan Mid-Cap 100 Index from 2005 to 2007 are selected as samples. In the beginning, this study selected the top 150 enterprises with the most influence on Taiwan's stock market during the fourth quarter of 2008, namely, those enterprises included in the two indices, the "TSEC Taiwan 50 Index" and the "TSEC Taiwan Mid-Cap 100 Index" of the Exchange Traded Funds (ETF) jointly compiled by the Taiwan Securities Exchange and FTSE. One of the technology companies was listed on 28th November 2007 without the financial data of 2006, it was thus removed from the samples. The source of data is the CMoney database and the corporate sustainable development (CSR) reports.

In order to study the causal relationship between CSP and CFP, this study is divided into two major sections: the impact of CSP on CFP and vice versa. In the section regarding the impact of CSP on CFP, the 2005 CSP is used to study its impact on the 2006 CFP; in the section regarding the impact of CFP on CSP, the 2006 CFP is used to study the impact on the 2007 CSP. This study expects to study these top 150 most influential enterprises on the Taiwanese stock market to clarify the link between CSP and CFP, and provide a reference to Taiwanese enterprises. It is also expected that more enterprises can realize the importance of CSP and assume greater corporate social responsibilities.

As there is no formal or open CSP rating organization in Taiwan, such as those in the United States and France, this study refers to the five indicators of the AReSE method of France, as used by Charles-Henri and Stéphane (2002), namely, the ER (employee relations),

ENV (Environment), SHA (shareholder relations), PRD (product quality and relations with providers and customers), and COM (community) to measure CSP. Such data are taken from the CSR reports or CSP-related reports published for assessment on sample companies' websites. The ratings levels are 0-5, with the fulfillment of one indicator being granted one point, and a total score of 5 points.

The CFP measurement is based on the data taken from the CMoney database of the company's ROA (return on assets), ROE

(return on equity), and ROS (return on sales) (Waddock and Graves, 1997; Charles-Henri and Stéphane, 2002).

Research hypotheses

Although the linkage between CSP and CFP is inclusive in literature reviews, most discussions suggest positive correlation (Moskowitz, 1972; Waddock and Graves, 1997). Therefore, this study also hypothesizes that CSP and CFP have a positive causal relationship. Thus, H-1 and H-2 are proposed, as follows:

H₁ CSP has positive impact on CFP.

H₂ CFP has positive impact on CSP.

The most important reason for the sustainable development of a company is its capacity to make profits. To gain profits in a sustainable manner, the products or services of the company must be able to satisfy customer needs in a sustainable manner, which suggests that continuous innovation of products or services is necessary. McWilliams and Siegel (2000) also pointed out that R&D was highly correlated to CSP of a company. Moreover, the link of CSP and CFP would disappear by considering R&D. Therefore, if R&D costs are not well controlled, it is difficult to measure the CSP impact on CFP (McWilliams and Siegel, 2000). Based on the above, CSR and R&D are inseparable; hence, R&D costs are added to the control variables.

H₃ If more R&D investment is made by a company, CSP has a positive impact on CFP.

H₄ If more R&D investment is made by a company, CFP has a positive impact on CSP.

RESEARCH METHODS

To study the causal relationship between CSP and CFP, this study employs regression analysis (Fogler and Nutt, 1975; Vance, 1975; Chen and Metcalf, 1980; McWilliams et al., 2000; Hull et al., 2008) as the main statistical method, when CSP is an independent variable and CFP is a dependent variable, as shown in Eq.(1):

$$CFP_t = \alpha_0 + \beta_1 CSP_t + \epsilon \quad (1)$$

When CFP is an independent variable, and CSP is a dependent variable, as shown in Eq.(2):

$$CSP_t = \alpha_0 + \beta_1 CFP_t + \epsilon \quad (2)$$

Where; t is the t-th year, CFP_t is the CFP of t-th year, and CSP_t is the CSP of t-th year.

In past studies of the link between CSP and CFP, control variables included size (Ullman, 1985; Waddock and Graves, 1997) and R&D (McWilliams and Siegel, 2000) to render the research results more complete.

Size

Companies of larger scale have the greater capability of the resources required regarding society, environment, and environmental communication capacities (Charles-Henri and Stéphane, 2002), while the community also has higher expectations of social responsibilities. Waddock and Graves, (1997) proposed that smaller companies did less CSR related activities than larger companies, as suggested by same data results. Larger companies are more mature and attract the attention of the public more easily, and thus, they should respond more to the needs of public interest stakeholders.

Table 1. The Pearson correlation analysis of previous CSP on latter CFP.

	ROA	ROE	ROS	previous CSP
ROA	1			
ROE	0.921***	1		
ROS	0.433**	0.310***	1	
previous CSP	0.180**	0.106	0.063	1

ROA; Return on assets, ROE; return on equity, ROS; return on sales, CSP; corporate social performance. ***, **, * significance level 1, 5 and 10%

Research and development (R&D)

Most literature points out that R&D has great impact on CSP and CFP. Thus, when adding these two control variables with CSP as the independent variable, and CFP as the dependent variable, as is shown in Eq.(3):

$$CFP_t = \alpha_0 + \beta_1 CSP_t + R\&DX_2 + SizeX_3 + \varepsilon \quad (3)$$

When CFP is the independent variable and CSP is the dependent variable, as is shown in Eq.(4):

$$CSP_t = \alpha_0 + \beta_1 CFP_t + R\&DX_2 + SizeX_3 + \varepsilon \quad (4)$$

Where; R&D denotes the R&D costs defined as a percentage of R&D costs to the net sales revenue (net operating revenue); size denotes the size of the company, as based on the paid-in capital.

EMPIRICAL RESULTS

This study attempts to use the Person correlation analysis method (Heinze, 1976; McGuire et al., 1988; Stanwick, 1998; Preston and O'Bannon, 1997; Charles-Henri et al., 2002; Hull et al., 2008) and regression analysis (Fogler and Nutt, 1975; Vance, 1975; Chen and Metcalf, 1980; Stanwick, 1998; McWilliams et al., 2000; Hull et al., 2008) to understand the CSP and CFP link, and its relational degree and direction.

The impact of previous CSP on latter CFP

Correlation analysis: Before considering the control variables, the statistical analysis results of the impact of previous CSP on latter CFP, are as shown in Table 1. The correlation degrees are very high among various CFPs. As far as previous CSP and latter CFP are, concerned, previous CSP and ROA show significant positive correlation. However, previous CSP and shareholder ROE and ROS show no significant correlation.

Regression analysis: With regard to regression analysis, as shown in Table 2, the impacts of CSP on ROA ROE and ROS, adjusted R^2 are very low, indicating that the explanation capabilities of these three models are considerably low.

The p value of previous CSP on latter ROA is less than 0.05, indicating a significant positive impact of previous CSP on latter ROA, while the p values of previous CSP on shareholder ROE and ROS are larger than 0.1, which indicates that the impact of 2005 CSP on 2006 shareholder ROE and ROS was not significant.

As seen, regarding the 2005 CSP impact on 2006 CFP, previous CSP had significant positive impact only on latter ROA, conforming to the results of Preston and O'Bannon (1997). However, it is not related to shareholder ROE and ROS, conforming to the results of studies by Alexander and Buchholz (1982); Aupperle et al. (1985); Ullman (1985); and Shane and Spicer (1983).

The impact of previous CFP on latter CSP

Correlation analysis: Before considering the control variables, the Pearson Correlation analysis results of the impact of previous CFP on latter CSP are as shown in Table 3. Regardless of the independent variable of ROA, shareholder ROE, or ROS, its p value is consistently larger than 0.1. It can thus be concluded that previous CFP is not related to latter CSP.

Regression analysis: The regression analysis results of the impact of previous CFP on latter CSP, without consideration of the control variables, are as shown in Table 4. No matter the independent variable is ROA, ROE, or ROS, the p value is larger than 0.1, indicating that the 2006 ROA, ROE, or ROS had no significant impact on the 2007 CSP, moreover, the return on equity (ROE) is negative.

According to the above three models, regarding the impact of 2006 CFP on 2007 CSP, it is not significant, regardless of ROA, ROE, or ROS as the measurement indicators, moreover, even the impact of shareholder ROE on latter CSP is negative to a low degree. Therefore, the study results of the impact of previous CFP on 2007 CSP are consistent with Alexander and Buchholz (1982); Aupperle et al. (1985); Ullman (1985); and Shane and Spicer (1983), indicating that the linkage between CFP and CSP is uncertain.

Table 2. The regression analysis of previous CSP on latter CFP

Dependent variable		CFP		
		ROA	ROE	ROS
Independent variable	β value	0.180	0.106	0.063
	(p-value)	(0.028) **	(0.197)	(0.446)
	R ²	0.032	0.011	0.004
	t-value	2.217	1.295	0.764

ROA; Return on assets, ROE; return on equity, ROS; return on sales, CSP; corporate social performance. ***, **, * significance level 1, 5 and 10%.

Table 3. The Pearson correlation analysis of previous CFP on latter CSP

	ROA	ROE	ROS	latter CSP
ROA	1			
ROE	0.921***	1		
ROS	0.433***	0.310***	1	
latter CSP	0.045	-0.004	0.071	1

ROA, Return on assets, ROE; return on equity, ROS; return on sales, CSP; corporate social performance. ***, **, * significance level 1, 5 and 10%

Table 4. The regression analysis of previous CFP on latter CSP.

Dependent variable		CSP	
		Independent variable	
CFP	ROA	β value	0.045
		(p-value)	(0.585)
		R ²	0.02
		t-value	0.547
	ROE	β value	-0.004
		(p-value)	(0.960)
		R ²	0
		t-value	-0.051
	ROS	β value	0.071
		(p-value)	(0.391)
		R ²	0.005
		t-value	0.860

ROA; Return on assets, ROE; Return on equity, ROS; Return on sales, CSP; Corporate social performance. ***, **, * significance level 1, 5 and 10%

Meanwhile, R&D is positively correlated to ROA and ROE, indicating that ROA and ROE are higher when the company invests more in R&D.

Regression analysis: If considering R&D and size, as shown in Table 6, when the CFP indicator is ROA, previous CSP is positively correlated to latter CFP ($\beta = 0.176$, $p < 0.05$), indicating that the latter ROA would be

higher if the previous CSP is higher after consideration of R&D and size. However, the impact of 2005 CSP on 2006 ROE and ROS is not significant.

As seen, the company's ROA and ROE is higher when R&D costs are higher. Such a conclusion is consistent with Charles-Henri and Stéphane (2002), who suggested that R&D would improve the profits of a company.

Table 5. The Pearson correlation analysis of impact of R&D and size on previous CSP and latter CFP.

	ROA	ROE	ROS	Previous CSP	Size	R&D
ROA	1					
ROE	0.921***	1				
ROS	0.433***	0.310***	1			
previous CSP	0.180*	0.106	0.063	1		
size	-0.108	-0.148*	-0.059	0.117	1	
R&D	0.205**	0.139*	0.014	0.099	0.006	1

ROA; Return on assets, ROE; return on equity, ROS; return on sales, CSP; corporate social performance. ***, **, * significance level 1, 5 and 10%

Table 6. The regression analysis of the impact of R&D and size on previous CSP and latter CFP.

Independent variable	Dependent variable	CFP		
		ROA	ROE	ROS
CSP	β value	0.176	0.112	0.070 (0.403)
	(p-value)	(0.030) **	(0.172)	
	R ²	0.065	0.034	0
	t-value	2.194	1.373	0.838

ROA; Return on assets, ROE; Return on equity, ROS; Return on sales, CSP; Corporate social performance. ***, **, * significance level 1, 5 and 10%

After controlling the R&D and size of the company, the 2005 CSP had a positive impact on 2006 ROA, indicating that higher previous CSP would produce higher latter ROA. This conclusion is consistent with McWilliams and Siegel (2000). However, when using ROE and ROS to measure the 2006 CFP, the impact was not significant. This is consistent with Chan et al. (2001), and McWilliams and Siegel (2000), which stated that CSP was not correlated to CFP, after considering R&D.

The impact of previous CFP on latter CSP when considering R&D and size

Correlation analysis: Consideration of variables, including R&D and size, gives the statistical analysis results of the impact of previous CFP on latter CSP, as shown in Table 7. Regardless of the independent variable of 2006 corporate financial performance, ROA, ROE, or ROS, its relationship with 2007 CSP was not significant.

Regression analysis: As shown in Table 8, when the independent variable is ROA, ROE, or ROS, its p value is larger than 0.1, indicating that the 2006 ROA, ROE, or ROS had no significant impact on 2007 CSP.

According to the above three models, regarding the impact of 2006 CFP on 2007 CSP, it is not significant regardless of ROA, ROE or ROS as a measurement indicator, indicating that previous CFP will not affect latter CSP, upon gaining control of company R&D and size. Therefore, the study results of the impact of 2006 CFP on 2007 CSP are consistent with Chan et al. (2001) as the link between CFP and CSP becomes uncertain after consideration of R&D.

Conclusions

With regard to the impact of 2005 CSP on 2006 CFP, previous CSP has significant positive impact on latter ROA, conforming to the results of Preston and O'Bannon (1997), as well as H₁ of this study. Namely, when a company is on good terms with its employees, suppliers, and customers, or it contributes to or feeds back into the community with higher CSP, it will promote its own image. Consumers believe that the company has a better reputation, which further improves the competitiveness of the company, as customers would be more willing to purchase the products of the company. Moreover, it can promote the morale of its employees, thus, reducing costs and improving productivity, another advantage for a company on good terms with its employees.

With regard to the impact of 2006 CFP on 2007 CSP, regardless of the measurement variables of ROA, ROE, or ROS, the impact is not significant. Therefore, the conclusion for the impact of 2006 CFP on 2007 CSP is consistent with Alexander and Buchholz (1982); Aupperle et al. (1985); Ullman (1985); Shane and Spicer (1983), which state that the link between CSP and CFP is uncertain. This is different from H-2 of this study, namely, when a company has higher CFP; it does not voluntarily feed back into the community.

Greater innovation leads to higher ROA and ROE. This conclusion is consistent with Charles-Henri and Stéphane (2002), which stated that innovation with more research and development would increase the profits of an enterprise. However, upon gaining control of the R&D and size of a company, CSP has a positive impact on ROA, indicating that higher previous CSP would lead to

Table 7. The Pearson correlation analysis of the impact of R&D and size on previous CFP on latter CSP.

	ROA	ROE	ROS	latter CSP	size	R&D
ROA	1					
ROE	0.921***	1				
ROS	0.433***	0.310***	1			
latter CSP	0.045	-0.004	0.071	1		
size	-0.108	-0.148*	-0.059	0.105	1	
R&D	0.205**	0.139*	0.014	-0.029	0.006	1

ROA; Return on assets, ROE; Return on equity, ROS; Return on sales, CSP; Corporate social performance. ***, **, * significance level 1, 5 and 10%.

Table 8. The regression analysis of the impact of R&D and size on previous CFP and latter CSP.

Independent variable	Dependent variable	
	CSP	
ROA	β value	0.066
	(p-value)	(0.436)
	R ²	0
	t-value	0.782
CFP	β value	0.016
	(p-value)	(0.851)
	R ²	0
	t-value	0.188
ROS	β value	0.077
	(p-value)	(0.348)
	R ²	0
	t-value	0.942

ROA: Return on assets; ROE: return on equity; ROS: return on Sales; CSP: corporate social performance. ***, **, * significance level 1, 5 and 10%.

higher latter ROA. This conclusion is consistent with McWilliams and Siegel (2000). When ROE or ROS was used to measure 2006 CFP, the impact was not significant. This conclusion is consistent with McWilliams and Siegel (2000) that the linkage between CFP and CSP would be uncertain when variables of greater accuracy were introduced into the economic models. Therefore, the linkage between CSP and ROE or ROS would not exist with the introduction of R&D and size into the models.

With regard to the impact of 2006 CFP on 2007 CSP, regardless of the measurement indicator as ROA, ROE, or ROS, the impact of 2006 CFP on 2007 CSP is not significant, indicating that previous CFP would not affect latter CSP, upon gaining control of company innovation and size. Therefore, the conclusion of this paper on the impact of 2006 CFP on 2007 CSP is consistent with Chan et al. (2001), who suggested that the link between CSP and CFP is uncertain upon consideration of innovation.

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