A STUDY ON TAIWANESE CORPORATE SOCIAL RESPONSIBILITY AND OWNERSHIP STRUCTURES

Shihwei Wu*, Fengyi Lin**, Chiaming Wu***

Abstract

This study develops several models to examine the relationship between the corporate social responsibility (CSR) and the ownership structure of Taiwanese firms. Our results suggest that firms which are controlled by professional managers, government-owned, or collectively-owned would like to undertake serious efforts to integrate the CSR into various aspects of their companies. Due to Asia firm's culture, family firms might be more reluctant to put efforts on CSR activities. We also report that there is a positive relationship between (a) the CSR and financial performance and (b) the CSR and earnings quality. This study suggests that the ownership structures are found to have effects on the CSR and the CSR could also decrease the information asymmetry between managers and investors.

Keywords: Corporate Governance, Corporate Social Responsibility, Ownership, Taiwan

**Assistant professor, Department of Business Management, National Taipei University of Technology*
***Corresponding author; Professor, Department of Business Management, National Taipei University of Technology*
****Master degree student, Department of Business Management, National Taipei University of Technology*

1. Introduction

The corporate social responsibility (CSR) has been drawing attention on the society in recent years. More firms would like to work on the CSR mainly because stakeholders believe there is a close relationship between CSR and the concept of sustainability (e.g. Guenster et al., 2006; Galema et al., 2008). They are not only concerned about the firm's financial performance but also its non-financial performance (e.g. social relations, corporate governance, and impact on the environment) (Galema et al., 2008). It is well-documented that the CSR is a good communication tool for a firm because it could decrease the information asymmetry between managers and investors (Reverte, 2011). Goss and Roberts (2011) suggested that a firm's risk management perspective can be viewed as the value of their CSR investment. Therefore, a growing number of firms have undertaken serious efforts to integrate the CSR into various aspects of their companies (Lee and Faff, 2009; Harjoto and Jo, 2007). Prior literature has documented that the CSR and idiosyncratic risk are negatively associated (e.g. Boutin-Dufresne and Savaria, 2004; Lee and Faff, 2009). In addition, previous studies have investigated the relationship between the firms' CSR and their financial performance (e.g. Ghoul et al., 2011). Furthermore, studies have reported the ownership structures have impacts on the CSR (e.g. Ghazali (2007). However, it is possible to point out the limitations of some prior studies. First, Taiwan is an emerging market and Taiwanese firms may focus mainly on business expansions. Second, some foreign direct investment regulations have been lifted in recent years, in order to attract large institutional investors, more and more Taiwanese firms would like to put more efforts on the CSR. Third, the cultural differences between the Western and oriental societies may have differed investors' perceptions of the CSR performance. Fourth, the Taiwan stock market structure is different from other major stock markets. More than half of the listed firms are in the electronic industry in the Taiwan stock market. Finally, the control variables employed in the previous studies focus mainly on the firms' financial risk factors (e.g. size, book to market ratio...etc). However, these factors and many others associated with the nature of firms may be inter-related (e.g. the firm's ownerships, board independence, earnings quality…etc). From the discussions above, this is our contention that the results of the relationship between the CSR and the ownership structures may be different from previous studies. Therefore, this study would explore the relationship between the CSR and the ownership structures in the emerging market.

We developed several models to examine the relationship between the CSR and the ownership structure in Taiwan. The results of this study show that (i) the CSR and unsystematic risk is negatively associated; (ii) the CSR and financial performance is positively associated; (iii) the CSR and firm's size is positively associated; (iv) family firms are reluctant to put efforts on CSR activities; (v) the CSR and earnings quality is positively associated; (vi) firms which are controlled by professional

managers, government-owned, or collectively-owned would like to undertake serious efforts to integrate the CSR into various aspects of their companies.

The remainder of the paper is structured as follows. The second section is to discuss prior literature concerning CSR. In addition, the research hypotheses to be tested regarding CSR are developed. The third section illustrates the data and research methods used in this study. The empirical results are demonstrated in the fourth section. Finally, section five summarizes our conclusions.

2. Literature review and hypothesis

There are several family business studies focused on financial performance of family firms (Mazzi 2011), the cost and benefits of the pyramid structure (Masulis et al. 2011) and the corporate social responsibility. For example, some studies showed evidence that family firms have better financial disclosure quality than non-family firms (Ali et al. 2007). In addition, Wang (2006) and Ebihara et al. (2012) both found that family firms have better earnings quality than non-family firms. Moreover, Kubota et al. (2012) investigated the cost of capital of family firms in Japan. They found that (i) family firms have lower cost of debt and market liquidity than non-family firms; (ii) family firms have lower cost of capital than non-family firms. Furthermore, Dyer and Whetten (2006) and Godfrey (2005) showed the evidence that family firms are more social responsible than non-family firms. This may be because that family firms concern about their reputations and would like to protect their assets. However, some studies argued that family firms are self-interested and are not like to engage in CSR (Morck and Yeung, 2004). Therefore, we infer that family firms may not undertake the CSR in their business in Taiwan. This may be because Taiwan is an emerging market and Taiwanese firms may focus mainly on business expansions. The hypothesis H1 is developed:

H1: *Family firms are less concerned about the CSR than non-family firms*

In addition, the influences of ownership structure on CSR have been investigated in various studies. For example, Ghazali (2007) investigated the influences of ownership structure on CSR disclosure in the annual reports of Malaysian firms. It is found that the owner-managed firms disclosed less CSR information in their annual reports. However, the government-owned firms disclosed more CSR information in their annual reports. Therefore, Ghazali (2007) suggested that the ownership structure has an impact on CSR. In addition, Oh et al. (2011) found that there is a negative relationship between the managerial ownership and the CSR disclosures. Furthermore, Haniffa and Cooke (2005) reported that there is a positive relationship between foreign ownership and the CSR disclosures. Khan et al. (2012) also suggested that public ownership, foreign ownership, and board independence have positive impacts on the CSR, while the managerial ownership has negative impacts on the CSR. Previous studies have suggested that larger firms have more influences on the community and more environmental concerns; therefore, they would devote more efforts on their legitimating behaviour (e.g. Reverte, 2011; Ghoul et al. 2011; Knox et al. 2006; Hackston and Milen, 1996; Dowling and Pfeffer, 1975). Therefore, combining the predictions of the theoretical models and empirical findings discussed previously leads to the following hypothesis:

H2: *Firms controlled by the professional managers have positive impacts on CSR*

H3: *Government-owned firms have positive impacts on the CSR*

H4: *Collective-owned firms have positive impacts on the CSR*

The relationship between earnings quality and financial reporting has been investigated in several studies. For example, Aboody et al. (2005) investigated the relationship between the earnings quality factor and cost of capital. They concluded that the firm's high earnings quality is negatively related with its cost of capital. Francis *et al.* (2005) suggested that there is highly statistically significant difference between the earnings quality and the cost of capital. Firms with poor earnings quality have larger costs of capital than firms with high earnings quality. In addition, studies also suggested that the firm's CSR is negatively related to its cost of capital (Reverte, 2011). Kim et al. (2011) investigated the relationship between the earnings quality and the CSR. They found that there is a positive relationship between the earnings quality and the CSR. In addition, CSR firms are less likely to engage in the earnings manipulations. However, there is no study which directly investigates the relationship between the earnings quality and the CSR in Taiwan. Therefore, it is our contention that there is a positive relationship between the earnings quality and the CSR. Combining the predictions of the theoretical models and empirical findings discussed previously leads to the following hypothesis:

H5: *CSR firms have better earnings quality than non-CSR firms*

Nelling and Webb (2009) examined the causal relation between CSR and financial performance. They argued that the existing literature did not control for unobservable variables (i.e. corporate culture or managerial influence variables) in the panel data. This is because these variables may have influences on CSR activities. Therefore, in order to gain more detailed analyses, they used not only a more comprehensive data set (i.e. over 2800

firm-year observations) but also alternative statistical approaches (i.e. time series fixed effects regression model) to test the relation between the CSR and the financial performance. The results show that the CSR and lagged financial performance (lagged return on assets) are positively related. Firms with higher proportion of debt financing tend to have lower level of CSR.

Moreover, larger firms may have more resources to support their CSR activities. They also suggested that firms with stronger market performance would lead to a greater investment in CSR activities.Reverte (2011) examined the impact of CSR on the cost of capital of Spanish firms. It is suggested that better CSR could reduce the estimation risk, transaction costs, and information asymmetries in the capital markets. After controlling for Fama and French (1993) risk factors (beta, size, and market-to-book ratio), Reverte (2011) examined the relationship between the CSR and the cost of capital. It is found that larger firms have better CSR reporting practices because larger firms have bigger impacts on the community, and bigger groups of equity holders to influence the firms' decisions.

In addition, it is also found that the beta is positively related to the cost of capital as the size and the market-to-book ratio are negatively related to the cost of capital. Therefore, Reverte (2011) concluded that better CSR disclosure could decrease information asymmetries between investors and managers, induce investors to maintain their investments in the firm and decrease the cost of capital. Therefore, the hypothesis H6 is developed:

H6: *the financial performance of CSR firms is better than that of non-CSR firms*

3. Research methods and data

In order to investigate the relation between the CSR and ownership in Taiwan and to test the hypotheses, few research methods are developed. In addition, data is collected from various sources.The data of this study is collected from (i) the Common Wealth Magazine, Taiwan's leading business magazine, grants the CSR awards (the excellence in corporate social responsibility) of Taiwanese public listing firms annually[27] for the period of 2007 to 2009; (ii) Taiwan Economic Journal (TEJ) database during the period from 2007 to 2009. We gather these CSR awarded firms' annual financial accounting variables from TEJ database. We exclude firms in the financial and insurance sectors. In addition, the propensity score matching method is used in our data collections. After removing firms that have missing data, a total of 192 firms (controlled group) and a total of 96 CSR firms were selected as our sample.

Regression models

Several regression models are developed to test the hypotheses:

Model 1：

$$CSR = \alpha_0 + \alpha_1 DUA + \alpha_2 FAM + \alpha_3 SSDM + \alpha_4 CR + \alpha_5 Financial\ Indicators + \alpha_6 Risk\ Indicators + \alpha_7 LEV + \alpha_8 LNTA + \varepsilon_i$$

Model 2：

$$CSR = \beta_0 + \beta_1 DUA + \beta_2 FAM + \beta_3 SSDM + \beta_4 CR + \beta_5 Financial\ Indicators + \beta_6 Risk\ Indicators + \beta_7 LEV + \beta_8 DA + \beta_9 LNTA + \varepsilon_i$$

Model 3：

$$CSR = \gamma_0 + \gamma_1 DUA + \gamma_2 FAM + \gamma_3 SSDM + \gamma_4 CR + \gamma_5 Financial\ Indicators + \gamma_6 Risk\ Indicators + \gamma_7 LEV + \gamma_8 DA + \gamma_9 IND + \gamma_{10} LNTA + \varepsilon_i$$

Model 4：

$$CSR = \delta_0 + \delta_1 DUA + \delta_2 MAN + \delta_4 AG + \delta_5 GOV + \delta_6 SSDM + \delta_7 CR + \delta_8 Financial\ Indicators + \delta_9 Risk\ Indicators + \delta_{10} LEV + \delta_{11} DA + \delta_{12} LNTA + \varepsilon_i$$

Where: CSR is the dummy variable (1 indicates CSR firms; 0 otherwise); DUA is the dummy variable (1 indicates that CEO duality; 0 otherwise); FAM is the dummy variable (1 indicates that family firms; 0 otherwise);SSDM is thedeviation ratio betweenthe number of board seats controlled and the percentage of shares ownedby the ultimate owner; CR is the current ratio; Financial indicators include: earnings per share (EPS), return on assets (ROA) and return on equity (ROE); Risk indicators include: market risk (BETA) and unsystematic risk (RISK); DA is thediscretionary accruals, the earnings management variable; LNTA is the natural log of total assets; LEV is the leverage; MAN is the dummy variable (1 indicates that firms are controlling by the professional managers; 0 otherwise); AG is the dummy variable (1 indicates collectively-owned

[27]http://issue.cw.com.tw/issue/2011csr/e2011report-1.jsp

firms; 0 otherwise); GOV is the dummy variable (1 indicates government-owned firms; 0 otherwise).

4. Results

Descriptive statistics

Table 1 reports the descriptive statistics of the regression variables used in our analysis. In terms of the ownership structure, it is found that the majority of the family firms have no CSR activities (the variable means are significantly different from zero at the 1% significant level). In addition, the majority of the firms which are controlled by the professional managers would like to undertake the CSR activities (the variable means are significantly different from zero at the 10% significant level). Furthermore,more than half of the government-owned firms are engaged in the CSR activities. For the financial indicators, (i) the EPS is higher for the CSR firms than non-CSR firms (significantly different at 10% the level); (ii) the return on assets is higher for the CSR firms than non-CSR firms (significantly different at 10% level). For the risks indicators, (i) CSR firms have lower market risks than non-CSR firms (significantly different at 5% level); (ii) CSR firms have lower unsystematic risks than non-CSR firms (significantly different at 10% level); (iii) CSR firms have significantly less DA and higher LNTA than non-CSR firms (both at 1% level). Finally, our descriptive statistic results indicate that firms with different ownership structures may exhibit different behaviors on CSR activities. Our preliminary results also imply that the expectations of this study are comparable to those of previous studies.

Table 1. Descriptive statistics

Variables	CSR	Mean	Std	P-value	Variables	CSR	Mean	Std	P-value
DUA	1	0.20	0.40	0.341	ROA	1	13.83	9.37	0.061*
	0	0.15	0.36			0	11.50	7.76	
FAM	1	0.45	0.50	0.001***	ROE	1	13.00	11.37	0.449
	0	0.69	0.47			0	11.74	11.75	
MAN	1	0.33	0.47	0.076*	BETA	1	0.92	0.28	0.016**
	0	0.22	0.42			0	1.01	0.24	
AG	1	0.11	0.32	0.206	RISK	1	1.22	1.05	0.065*
	0	0.06	0.24			0	1.56	0.48	
GOV	1	0.10	0.31	0.017**	LEV	1	1.39	2.39	0.196
	0	0.02	0.14			0	1.07	0.42	
SSDM	1	5.78	12.27	0.506	DA	1	0.07	0.06	0.004***
	0	7.24	17.51			0	0.11	0.10	
CR	1	175.31	96.24	0.425	IND	1	0.52	0.50	1.000
	0	190.11	135.66			0	0.52	0.50	
EPS	1	3.53	5.16	0.094*	LNTA	1	17.92	1.39	0.003***
	0	2.55	2.45			0	17.34	1.29	

1. DUA is the dummy variable (1 indicates that CEO duality; 0 otherwise); FAM is the dummy variable (1 indicates that family firms; 0 otherwise); MAN is the dummy variable (1 indicates that firms are controlling by the professional managers; 0 otherwise); AG is the dummy variable (1 indicates collectively-owned firms; 0 otherwise); GOV is the dummy variable (1 indicates government-owned firms; 0 otherwise);SSDM is the deviation ratio between the number of board seats controlled and the percentage of shares owned by the ultimate owner; CR is the current ratio; Financial indicators include: EPS (earnings per share), ROA (return on assets) and ROE (return on equity); Risk indicators include: BETA (market risk) and RISK (unsystematic risk); DA (discretionary accruals); LNTA (the natural log of total assets); LEV (leverage); IND (industry variables)

2. ***significant at 1% level, ** significant at 5% level, * significant at 10% level

Correlation analysis

In order to avoid the possibilities of multicollinearity causing difficulties in interpreting the results, the Pearson's correlation coefficient is used to examine the explanatory variables. The correlation coefficients among the explanatory variables are shown in Table 2. It is found that professional managers controlled firms and government-owned firms tend to have higher CSR activities while family owned firms are less likely to devote efforts on CSR activities. Previous studies have suggested that larger firms have more influences on the community and more environmental concerns; therefore, they would devote more efforts on their legitimating behavior (e.g. Reverte, 2011; Ghoul et al. 2011; Knox et al. 2006; Hackston and Milen, 1996; Dowling and

Pfeffer, 1975). This may be the reason why few family owned firms engage on the CSR (the size is relatively smaller than government-owned firms and professional managers controlled firms). Several variables are correlated with the CSR. For example, the correlation coefficients on BETA and RISK are negative and significantly correlated to the CSR. The EPS and ROA are positive and significantly correlated to the CSR. In addition, there is no high correlation amongst these explanatory variables. Therefore, this suggests that there is no multicollinearity problem in our model.

Table 2. Correlation analysis

	CSR	MAN	AG	GOV	FAM	DUA	SSDM	CR	EPS	ROE	ROA	Beta	Risk	LEV	DA	LNTA	IND
CSR	1.000.	0.128* (0.076)	0.092 (0.206)	0.172** (0.017)	-0.242*** (0.001)	0.069 (0.341)	-0.048 (0.506)	-0.058 (0.425)	0.121* (0.094)	0.055 (0.449)	0.135* (0.061)	-0.174** (0.016)	-0.134* (0.065)	0.094 (0.195)	-0.210*** (0.004)	0.213*** (0.003)	0.000 (1.000)
MAN	0.128* (0.076)	1.000.	-0.192*** (0.007)	-0.159** (0.027)	-0.708*** (0.000)	0.151** (0.037)	0.363*** (0.000)	0.111 (0.125)	0.226*** (0.002)	0.100 (0.167)	0.086 (0.236)	0.156** (0.031)	-0.003 (0.971)	-0.062 (0.393)	-0.039 (0.596)	0.271*** (0.000)	0.476*** (0.000)
AG	0.092 (0.206)	-0.192*** (0.007)	1.000.	-0.080 (0.267)	-0.357*** (0.000)	-0.093 (0.198)	-0.047 (0.517)	-0.069 (0.339)	0.017 (0.811)	0.102 (0.161)	0.092 (0.205)	-0.260*** (0.000)	-0.069 (0.339)	-0.017 (0.814)	-0.003 (0.964)	-0.132* (0.068)	-0.178** (0.013)
GOV	0.172** (0.017)	-0.159** (0.027)	-0.080 (0.267)	1.000.	-0.296*** (0.000)	-0.061 (0.404)	-0.075 (0.301)	0.087 (0.228)	-0.100 (0.167)	-0.181** (0.012)	-0.079 (0.273)	-0.156** (0.031)	0.091 (0.212)	-0.050 (0.490)	-0.099 (0.171)	0.223*** (0.002)	-0.140* (0.053)
FAM	-0.242*** (0.001)	-0.708*** (0.000)	-0.357*** (0.000)	-0.296*** (0.000)	1.000.	-0.048 (0.506)	-0.261*** (0.000)	-0.104 (0.149)	-0.159** (0.028)	-0.052 (0.472)	-0.079 (0.276)	0.075 (0.303)	0.003 (0.972)	0.091 (0.209)	0.076 (0.295)	-0.276*** (0.000)	-0.269*** (0.000)
DUA	0.069 (0.341)	0.151** (0.037)	-0.093 (0.198)	-0.061 (0.404)	-0.048 (0.506)	1.000.	-0.009 (0.902)	0.041 (0.568)	-0.062 (0.395)	-0.080 (0.272)	-0.051 (0.482)	0.031 (0.673)	0.071 (0.328)	-0.052 (0.473)	-0.022 (0.759)	-0.069 (0.339)	-0.033 (0.651)
SSDM	-0.007 (0.925)	0.314*** (0.000)	-0.069 (0.344)	-0.110 (0.127)	-0.195*** (0.007)	0.094 (0.193)	1.000.	0.074 (0.308)	0.058 (0.423)	0.122* (0.093)	0.138* (0.056)	0.110 (0.128)	-0.076 (0.296)	-0.029 (0.693)	0.056 (0.443)	0.249*** (0.001)	0.212*** (0.003)
CR	-0.005 (0.945)	0.175** (0.015)	-0.070 (0.337)	-0.033 (0.653)	-0.108 (0.135)	0.146** (0.044)	0.092 (0.206)	1.000.	0.218*** (0.002)	0.077 (0.287)	0.210*** (0.003)	0.139* (0.054)	-0.043 (0.557)	-0.032 (0.663)	-0.027 (0.714)	-0.178** (0.013)	0.177** (0.014)
EPS	0.118 (0.103)	0.189*** (0.009)	0.088 (0.227)	-0.095 (0.192)	-0.164** (0.023)	-0.035 (0.630)	0.039 (0.587)	0.146** (0.043)	1.000.	0.690*** (0.000)	0.631*** (0.000)	-0.118 (0.102)	-0.046 (0.525)	-0.036 (0.621)	0.153** (0.034)	0.018 (0.806)	0.208*** (0.004)
ROE	0.083 (0.255)	0.114 (0.116)	0.126* (0.082)	-0.148** (0.040)	-0.092 (0.207)	-0.091 (0.209)	-0.008 (0.916)	0.111 (0.124)	0.902*** (0.000)	1.000.	0.792*** (0.000)	-0.216*** (0.003)	-0.072 (0.321)	-0.031 (0.667)	0.349*** (0.000)	-0.197*** (0.006)	0.147** (0.042)
ROA	0.130* (0.072)	0.053 (0.467)	0.128* (0.078)	-0.057 (0.433)	-0.077 (0.288)	-0.051 (0.486)	-0.028 (0.697)	0.177** (0.014)	0.709*** (0.000)	0.771*** (0.000)	1.000.	-0.262*** (0.000)	0.018 (0.800)	-0.072 (0.319)	0.223*** (0.002)	-0.059 (0.413)	0.333*** (0.000)
Beta	-0.172** (0.017)	0.114 (0.116)	-0.245*** (0.001)	-0.110 (0.130)	0.079 (0.278)	-0.028 (0.697)	0.305*** (0.000)	0.129* (0.075)	-0.281*** (0.000)	-0.232*** (0.001)	-0.233*** (0.001)	1.000.	0.080 (0.272)	0.153** (0.034)	-0.053 (0.468)	0.110 (0.129)	0.059 (0.418)
Risk	-0.103 (0.155)	0.059 (0.418)	-0.012 (0.868)	-0.063 (0.386)	-0.012 (0.868)	0.072 (0.322)	-0.048 (0.504)	0.082 (0.259)	-0.172** (0.017)	-0.114 (0.116)	0.063 (0.388)	0.088 (0.224)	1.000.	-0.067 (0.357)	0.369*** (0.000)	0.067 (0.356)	-0.074 (0.305)
LEV	-0.033 (0.649)	-0.015 (0.841)	0.064 (0.380)	-0.161** (0.025)	0.048 (0.509)	0.001 (0.985)	0.115 (0.111)	-0.084 (0.247)	-0.088 (0.225)	-0.109 (0.133)	-0.138* (0.056)	0.229*** (0.001)	0.050 (0.490)	1.000.	-0.049 (0.499)	0.143** (0.048)	-0.103 (0.156)
DA	-0.228*** (0.001)	-0.005 (0.941)	0.065 (0.370)	-0.201*** (0.005)	0.053 (0.467)	0.038 (0.599)	-0.070 (0.332)	0.100 (0.167)	0.128* (0.077)	0.233*** (0.001)	0.179** (0.013)	-0.056 (0.442)	0.246*** (0.001)	0.057 (0.436)	1.000.	-0.245*** (0.001)	-0.066 (0.364)
LNTA	0.202*** (0.005)	0.289*** (0.000)	-0.145** (0.045)	0.218*** (0.002)	-0.281*** (0.000)	-0.067 (0.358)	0.264*** (0.000)	-0.150** (0.038)	-0.035 (0.630)	-0.205*** (0.004)	-0.093 (0.198)	0.121* (0.094)	0.040 (0.580)	0.218*** (0.002)	-0.236*** (0.001)	1.000.	0.127* (0.079)
IND	0.000 (1.000)	0.476*** (0.000)	-0.178** (0.013)	-0.140* (0.053)	-0.269*** (0.000)	-0.033 (0.651)	0.148** (0.040)	0.224*** (0.002)	0.255*** (0.000)	0.210*** (0.003)	0.369*** (0.000)	0.082 (0.255)	-0.006 (0.938)	-0.168** (0.020)	0.010 (0.887)	0.158** (0.029)	1.000.

1.Pearson correlation coefficient (upper half of the table), Spearman ρ coefficient (lower half of the table)

2.CSR is the dummy variable (1 indicates CSR firms; 0 otherwise); DUA is the dummy variable (1 indicates that CEO duality; 0 otherwise); FAM is the dummy variable (1 indicates that family firms; 0 otherwise); MAN is the dummy variable (1 indicates that firms are controlling by the professional managers; 0 otherwise); AG is the dummy variable (1 indicates collectively-owned firms; 0 otherwise); GOV is the dummy variable (1 indicates government-owned firms; 0 otherwise);SSDM is the deviation ratio between the number of board seats controlled and the percentage of shares owned by the ultimate owner; CR is the current ratio; Financial indicators include: EPS (earnings per share), ROA (return on assets) and ROE (return on equity); Risk indicators include: BETA (market risk) and RISK (unsystematic risk); DA (discretionary accruals); LNTA (the natural log of total assets); LEV (leverage); IND (industry variables)

3. ***significant at 1% level, ** significant at 5% level, * significant at 10% level

Empirical analyses

The results of testing hypothesis **H1** and **H6** are shown in Table 3. Panel A reports the regression results of model 1. It is found that after controlling the financial indicators and risk indicators, there is a significantly negative relationship betweenfamily firms and the CSR (significantly different from zero at 1% through model 1-1 to 1-6). The results indicate that family firms are less likely to engage in the CSR activities in Taiwan. This may be because family firms are self-interested and only concerned about the firm's financial performance. This supports the previous studies which suggested that family firms may not be socially responsible (Morck and Yeung, 2004). Panel A also reports that the CSR firms have significantly lower market risks (Beta) than non-CSR firms (significantly different from zero at 5% (model 1-1 and 1-3) or 10% (model 1-2) level). In addition, the unsystematic risks of CSR firms are significantly lower than that of non-CSR firms (significantly different from zero at 5% level through model 1-4 to 1-6). Panel A also illustrates that CSR firms have significant higher return on assets (ROA) than non-CSR firms (significantly different from zero at 5% (model 1-5) or 10% (model 1-2) levels). This may indicate that firms with stronger market performance would lead to a greater investment in CSR activities (Nelling and Webb, 2009). In terms of the total assets

(LNTA), larger firms would like to put efforts on CSR activities (significantly different at 1% or 5% level through model 1-1 to 1-6). This may indicate that larger firms may have more resources to support their CSR activities (Nelling and Webb, 2009).

Table 3. Results of model 1 and model 2

Panel A

Variables	Model 1-1		Model 1-2		Model 1-3		Model 1-4		Model 1-5		Model 1-6	
	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value
DUA	0.527	(0.202)	0.538	(0.197)	0.534	(0.198)	0.580	(0.171)	0.645	(0.139)	0.603	(0.159)
FAM	-0.908***	(0.008)	-0.957***	(0.005)	-0.932***	(0.006)	-1.006***	(0.003)	-1.054***	(0.002)	-1.034***	(0.002)
SSDM	-0.019*	(0.080)	-0.023*	(0.057)	-0.021*	(0.063)	-0.024**	(0.026)	-0.029**	(0.014)	-0.027**	(0.016)
CR	-0.001	(0.703)	-0.001	(0.604)	0.000	(0.879)	-0.001	(0.392)	-0.001	(0.289)	-0.001	(0.535)
EPS	0.058	(0.243)					0.076	(0.155)				
ROA			0.037*	(0.075)					0.054**	(0.010)		
ROE					0.015	(0.296)					0.023	(0.131)
Beta	-1.501**	(0.022)	-1.294*	(0.056)	-1.494**	(0.023)						
Risk							-0.290**	(0.030)	-0.326**	(0.017)	-0.291**	(0.027)
LEV	0.156	(0.164)	0.158	(0.156)	0.151	(0.176)	0.109	(0.326)	0.117	(0.288)	0.103	(0.350)
LnTA	0.330**	(0.013)	0.342***	(0.010)	0.365***	(0.008)	0.318**	(0.016)	0.349***	(0.009)	0.366***	(0.007)
Intercept	-4.081*	(0.087)	-4.707**	(0.054)	-4.749*	(0.060)	-4.708**	(0.049)	-5.568**	(0.023)	-5.643**	(0.024)
Nagelkerke R^2	0.205		0.215		0.202		0.203		0.231		0.202	
Cox & Snell R^2	0.154		0.161		0.151		0.152		0.173		0.151	
N	192		192		192		192		192		192	

Panel B

Variables	Model 2-1		Model 2-2		Model 2-3		Model 2-4		Model 2-5		Model 2-6	
	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value
DUA	0.504	(0.232)	0.515	(0.228)	0.520	(0.221)	0.554	(0.197)	0.615	(0.164)	0.580	(0.182)
FAM	-0.903***	(0.009)	-0.964***	(0.006)	-0.927***	(0.008)	-0.988***	(0.004)	-1.047***	(0.003)	-1.016***	(0.003)
SSDM	-0.017	(0.152)	-0.022*	(0.091)	-0.020*	(0.094)	-0.021*	(0.065)	-0.027**	(0.033)	-0.025**	(0.036)
CR	-0.001	(0.540)	-0.001	(0.407)	0.000	(0.720)	-0.001	(0.327)	-0.002	(0.230)	-0.001	(0.474)
EPS	0.084	(0.120)					0.101*	(0.082)				
ROA			0.052**	(0.020)					0.063***	(0.004)		
ROE					0.028*	(0.084)					0.033**	(0.044)
Beta	-1.518**	(0.022)	-1.275*	(0.065)	-1.454**	(0.030)						
Risk							-0.212	(0.147)	-0.245*	(0.100)	-0.198	(0.181)
LEV	0.157	(0.171)	0.159	(0.161)	0.148	(0.194)	0.117	(0.304)	0.125	(0.266)	0.109	(0.332)
DA	-5.875**	(0.017)	-6.205**	(0.011)	-6.008**	(0.012)	-4.832*	(0.058)	-5.116**	(0.044)	-5.056**	(0.044)
LnTA	0.242*	(0.079)	0.256*	(0.064)	0.299**	(0.034)	0.240*	(0.081)	0.270*	(0.053)	0.301**	(0.031)
Intercept	-2.046	(0.419)	-2.774	(0.279)	-3.219	(0.220)	-3.119	(0.217)	-3.962	(0.124)	-4.336*	(0.095)
Nagelkerke R^2	0.245		0.260		0.245		0.226		0.256		0.228	
Cox & Snell R^2	0.184		0.195		0.184		0.169		0.192		0.171	
N	192		192		192		192		192		192	

1. DUA is the dummy variable (1 indicates that CEO duality; 0 otherwise); FAM is the dummy variable (1 indicates that family firms; 0 otherwise); SSDM is the deviation ratio between the number of board seats controlled and the percentage of shares owned by the ultimate owner; CR is the current ratio; Financial indicators include: EPS (earnings per share), ROA (return on assets) and ROE (return on equity); Risk indicators include: BETA (market risk) and RISK (unsystematic risk); DA (discretionary accruals); LNTA (the natural log of total assets); LEV (leverage)

2. ***significant at 1% level, ** significant at 5% level, * significant at 10% level

In order to investigate whether the relationship between the CSR and earnings management, we added the earnings management variable (DA) into our regression model. The results of testing hypothesis **H5** are shown in Panel B Table 3. It is found that CSR firms have significantly better earnings quality than non-CSR firms (significantly different at 5% or 10 % level through model 2-1 to 2-6). This may indicate that firms disclosed CSRs are more information transparent and will make

managers hard to manipulate earnings (Francis et al. 2005). In addition, firms with a better earnings quality, managers will be less likely to use of discretionary accruals to manipulate earnings, which making lower information asymmetry between financial report users and business managers (Aboody et al. 2005). Therefore, the results in Panel A and Panel B are consistent with the previous studies which suggest that (i) the CSR and unsystematic risk is negatively associated (e.g. Boutin-Dufresne and Savaria, 2004; Lee and Faff, 2009); (ii) the CSR and financial performance is positively associated (e.g. Orlitzky et al. 2003; Brammer et al. 2006; Jiao, 2010; Ghoul et al., 2011); (iii) the CSR and firm's size is positively associated (Nelling and Webb, 2009); (iv) family firms are reluctant to put efforts on CSR activities (Morck and Yeung, 2004); (v) the CSR and earnings quality is positively associated (Aboody et al. 2005).The results of testing hypothesis H2, H3, and H4 are shown in Table 4. It is found that there is a significantly positive relationship between the firms which are controlled by the professional managers (MAN) and the CSR (significantly different at 5% or 10% level through model 4-1 to 4-6). In addition, there is a significantly positive relationship between the collectively-owned firms (AG) and the CSR (model 4-4 to 4-6). Furthermore, there is a significantly positive relationship between the government-owned firms (GOV) and the CSR (significant different at 5 % and 1 % level). Moreover, results also illustrate that family firms (the intercept) are less concerned about the CSR activities (family firms and CSR is negative correlated). Therefore, our results suggest that firms which are controlled by professional managers, government-owned, or collectively-owned would like to undertake serious efforts to integrate the CSR into various aspects of their companies (Lee and Faff, 2009; Harjoto and Jo, 2007). This may be because the CSR is a good communication tool for a firm and the CSR could also decrease the information asymmetry between managers and investors (Reverte, 2011). Table 4 also demonstrates that the EPS performance is positively related to CSR (significantly different at 10% level). In addition, CSR firms also have significantly positive return on asset (ROA) (significantly different at 1% level) and return on equity (ROE) (significantly different at 5% level). Furthermore, CSR firms have significantly lower systematic risk (Beta) and unsystematic risk (RISK). In terms of the earnings quality, results show that CSR firms have higher earnings quality than non-CSR firms (CSR firm's exhibit significantly lower level of earnings management at 1%, 5%, or 10% level). Finally, the total assets of CSR firms are larger than that of non-CSR firms.

Table 4. Results of model 4

Variables	Model 4-1		Model 4-2		Model 4-3		Model 4-4		Model 4-5		Model 4-6	
	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value
DUA	0.556	(0.196)	0.555	(0.204)	0.571	(0.189)	0.664	(0.130)	0.710	(0.117)	0.685	(0.123)
MAN	0.793*	(0.057)	0.907**	(0.027)	0.843**	(0.041)	0.758*	(0.067)	0.905**	(0.029)	0.822**	(0.046)
AG	0.829	(0.153)	0.756	(0.195)	0.790	(0.175)	1.087*	(0.056)	0.950*	(0.094)	1.042*	(0.068)
GOV	2.093**	(0.031)	2.399**	(0.022)	2.214**	(0.027)	2.533**	(0.013)	2.953***	(0.009)	2.620**	(0.011)
SSDM	-0.014	(0.232)	-0.020	(0.124)	-0.019	(0.128)	-0.017	(0.140)	-0.024*	(0.056)	-0.022*	(0.069)
CR	-0.001	(0.365)	-0.002	(0.231)	-0.001	(0.512)	-0.002	(0.193)	-0.002	(0.102)	-0.001	(0.308)
EPS	0.101*	(0.081)					0.118*	(0.051)				
ROA			0.060***	(0.010)					0.072***	(0.002)		
ROE					0.035**	(0.045)					0.040**	(0.023)
Beta	-1.417**	(0.042)	-1.208*	(0.094)	-1.356*	(0.053)						
Risk							-0.249*	(0.099)	-0.300*	(0.057)	-0.231	(0.129)
LEV	0.164	(0.162)	0.169	(0.146)	0.155	(0.185)	0.125	(0.283)	0.135	(0.242)	0.117	(0.310)
DA	-5.921**	(0.015)	-6.337***	(0.009)	-6.151***	(0.009)	-4.597*	(0.068)	-4.785*	(0.057)	-4.910**	(0.049)
LnTA	0.214	(0.135)	0.226	(0.114)	0.280*	(0.055)	0.222	(0.124)	0.249*	(0.088)	0.291**	(0.046)
Intercept	-2.569	(0.318)	-3.326	(0.199)	-3.942	(0.139)	-3.787	(0.143)	-4.654*	(0.076)	-5.210**	(0.049)
Nagelkerke R^2	0.259		0.277		0.260		0.250		0.282		0.252	
Cox & Snell R^2	0.194		0.207		0.195		0.188		0.211		0.189	
N	192		192		192		192		192		192	

1. DUA is the dummy variable (1 indicates that CEO duality; 0 otherwise); MAN is the dummy variable (1 indicates that firms are controlling by the professional managers; 0 otherwise); AG is the dummy variable (1 indicates collectively-owned firms; 0 otherwise); GOV is the dummy variable (1 indicates government-owned firms; 0 otherwise);SSDM is the deviation ratio between the number of board seats controlled and the percentage of shares owned by the ultimate owner; CR is the current ratio; Financial indicators include: EPS (earnings per share), ROA (return on assets) and ROE (return on equity); Risk indicators include: BETA (market risk) and RISK (unsystematic risk); DA (discretionary accruals); LNTA (the natural log of total assets); LEV (leverage)

2. ***significant at 1% level, ** significant at 5% level, * significant at 10% level

Robustness Checks

Although the work of this study has been carried out with great care and was thoroughly examined by checking each modeling steps, the removal of one of the many variables could lead to a totally different results. The endogeneity and omitted variable bias may cause difficulties in interpreting the results. In addition, the removal of factors from the regression model may lead to a different magnitude in the coefficients. Therefore, the robustness checks approaches are employed to ensure that our results are not driven by the endogeneity. We perform three additional robustness tests in Table 5-7 to examine whether our core evidence is robust to alternative assumptions and model specifications.

First, we repeat our tests using the data of firms that one year prior to receiving CSR awards. Results are shown in Table 5. Panel A illustrates that the relationship between CSR and family firms continues to load negatively at 1% level after controlling different factors (SSDM, CR, EPS, ROA, Beta, LNTA…etc.). In addition, ROA, ROE, and LNAT continue to load positively at 10% level or better. Furthermore, the risk factors (i.e. Beta, Risk) continue to load negatively at 10% level. These results are consistent with those reports in Table 3. Panel B demonstrates that the coefficients of MAN, AG, and GOV are all significant and positive. The coefficients of Beta and Risk are negative (although not significantly so). Furthermore, the DA continues to load negatively at 10% level. All the results shown in Panel B are consistent with those reports in Table 4.

Table 5. Results of robustness checks: firms that one year prior to receiving CSR awards

Panel A

Variables	Model 2-1		Model 2-2		Model 2-3		Model 2-4		Model 2-5		Model 2-6	
	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value
DUA	-0.281	(0.491)	-0.275	(0.502)	-0.261	(0.525)	-0.314	(0.443)	-0.297	(0.471)	-0.290	(0.480)
FAM	-1.089***	(0.002)	-1.115***	(0.001)	-1.105***	(0.001)	-1.109***	(0.001)	-1.129***	(0.001)	-1.120***	(0.001)
SSDM	-0.012	(0.392)	-0.017	(0.256)	-0.015	(0.286)	-0.016	(0.235)	-0.021	(0.161)	-0.018	(0.189)
CR	0.000	(0.904)	0.000	(0.785)	0.000	(0.961)	0.000	(0.974)	0.000	(0.897)	0.000	(0.867)
EPS	0.055	(0.220)					0.045	(0.331)				
ROA			0.034**	(0.041)					0.032*	(0.063)		
ROE					0.021*	(0.091)					0.017	(0.214)
Beta	-0.994*	(0.084)	-0.988*	(0.089)	-1.016*	(0.078)						
Risk							-0.144	(0.267)	-0.138	(0.321)	-0.116	(0.397)
LEV	-0.023	(0.815)	-0.020	(0.839)	-0.026	(0.796)	-0.038	(0.698)	-0.035	(0.722)	-0.041	(0.677)
DA	-4.558**	(0.046)	-4.197*	(0.068)	-4.332*	(0.060)	-3.742*	(0.096)	-3.601	(0.110)	-3.748*	(0.097)
LnTA	0.243*	(0.060)	0.268**	(0.040)	0.280**	(0.033)	0.227*	(0.074)	0.250*	(0.052)	0.255**	(0.047)
Intercept	-2.339	(0.330)	-3.017	(0.217)	-3.115	(0.204)	-2.840	(0.230)	-3.475	(0.150)	-3.470	(0.152)
Nagelkerke R^2	0.182		0.198		0.190		0.172		0.187		0.175	
Cox & Snell R^2	0.136		0.148		0.142		0.129		0.140		0.131	
N	192		192		192		192		192		192	

Panel B

Variables	Model 4-1		Model 4-2		Model 4-3		Model 4-4		Model 4-5		Model 4-6	
	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value
DUA	-0.287	(0.496)	-0.299	(0.479)	-0.271	(0.523)	-0.269	(0.524)	-0.272	(0.520)	-0.254	(0.548)
MAN	1.015**	(0.017)	1.076***	(0.010)	1.041**	(0.014)	0.920**	(0.028)	0.976**	(0.019)	0.949**	(0.022)
AG	1.023*	(0.071)	0.943*	(0.098)	0.982*	(0.084)	1.130**	(0.045)	1.066*	(0.058)	1.118**	(0.047)
GOV	1.591*	(0.067)	1.672*	(0.062)	1.695*	(0.059)	2.101**	(0.035)	2.147**	(0.036)	2.085**	(0.036)
SSDM	-0.011	(0.451)	-0.016	(0.289)	-0.014	(0.330)	-0.013	(0.332)	-0.018	(0.216)	-0.016	(0.260)
CR	0.000	(0.870)	0.000	(0.733)	0.000	(0.989)	0.000	(0.969)	0.000	(0.832)	0.000	(0.902)

EPS	0.059	(0.204)					0.050	(0.279)				
ROA			0.035**	(0.040)					0.033*	(0.064)		
ROE					0.022*	(0.081)					0.017	(0.204)
Beta	-0.928	(0.119)	-0.954	(0.111)	-0.960*	(0.100)						
Risk							-0.173	(0.173)	-0.168	(0.207)	-0.143	(0.283)
LEV	-0.021	(0.836)	-0.016	(0.872)	-0.022	(0.826)	-0.031	(0.753)	-0.028	(0.781)	-0.034	(0.729)
DA	-4.365*	(0.059)	-4.038*	(0.082)	-4.127*	(0.076)	-3.228	(0.154)	-3.085	(0.175)	-3.233	(0.156)
LnTA	0.235*	(0.077)	0.258*	(0.053)	0.271**	(0.043)	0.219*	(0.096)	0.241*	(0.069)	0.248*	(0.061)
Intercept	-3.371	(0.161)	-3.995*	(0.100)	-4.137*	(0.091)	-3.828*	(0.100)	-4.449*	(0.064)	-4.487*	(0.063)
Nagelkerke R^2	0.184		0.200		0.193		0.182		0.196		0.184	
Cox & Snell R^2	0.138		0.150		0.145		0.137		0.147		0.138	
N	192		192		192		192		192		192	

1. DUA is the dummy variable (1 indicates that CEO duality; 0 otherwise); FAM is the dummy variable (1 indicates that family firms; 0 otherwise); MAN is the dummy variable (1 indicates that firms are controlling by the professional managers; 0 otherwise); AG is the dummy variable (1 indicates collectively-owned firms; 0 otherwise); GOV is the dummy variable (1 indicates government-owned firms; 0 otherwise);SSDM is the deviation ratio between the number of board seats controlled and the percentage of shares owned by the ultimate owner; CR is the current ratio; Financial indicators include: EPS (earnings per share), ROA (return on assets) and ROE (return on equity); Risk indicators include: BETA (market risk) and RISK (unsystematic risk); DA (discretionary accruals); LNTA (the natural log of total assets); LEV (leverage)

2. ***significant at 1% level, ** significant at 5% level, * significant at 10% level

Secondly, we repeat our tests using the data of firms which have been granted CSR awards at least twice. Results are shown in Table 6. Panel A reports similar results with those reports in Table 3. For example, the coefficients of family firms (FAM) are significant and negative; the coefficients of Beta and Risk are mostly significant and negative. All the results illustrate in Panel A are consistent with those reports in Table 3 andin Panel B are also consistent with those reports in Table 4.

Table 6. Results of robustness checks: firms which have been granted CSR awards at least twice

Panel A

Variables	Model 2-1		Model 2-2		Model 2-3		Model 2-4		Model 2-5		Model 2-6	
	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value
DUA	0.483	(0.303)	0.493	(0.300)	0.495	(0.296)	0.461	(0.328)	0.520	(0.285)	0.487	(0.309)
FAM	-1.175***	(0.002)	-1.247***	(0.001)	-1.195***	(0.002)	-1.230***	(0.001)	-1.306***	(0.001)	-1.250***	(0.001)
SSDM	-0.010	(0.431)	-0.017	(0.258)	-0.015	(0.263)	-0.014	(0.287)	-0.021	(0.148)	-0.019	(0.160)
CR	-0.001	(0.489)	-0.001	(0.405)	-0.001	(0.708)	-0.001	(0.308)	-0.002	(0.255)	-0.001	(0.505)
EPS	0.108*	(0.080)					0.134**	(0.046)				
ROA			0.060**	(0.012)					0.070***	(0.002)		
ROE					0.038**	(0.036)					0.045**	(0.013)
Beta	-1.469**	(0.038)	-1.162	(0.117)	-1.339*	(0.062)						
Risk							-0.087	(0.581)	-0.126	(0.435)	-0.062	(0.701)
LEV	0.176	(0.136)	0.180	(0.124)	0.164	(0.162)	0.147	(0.218)	0.158	(0.183)	0.138	(0.244)
DA	-7.055**	(0.011)	-7.089***	(0.009)	-7.024***	(0.008)	-6.366**	(0.026)	-6.302**	(0.024)	-6.526**	(0.018)
LnTA	0.187	(0.213)	0.205	(0.173)	0.267*	(0.083)	0.165	(0.271)	0.200	(0.186)	0.254*	(0.098)
Intercept	-0.989	(0.723)	-1.928	(0.492)	-2.707	(0.352)	-1.839	(0.506)	-2.833	(0.313)	-3.646	(0.203)
Nagelkerke R^2	0.284		0.301		0.288		0.257		0.289		0.266	
Cox & Snell R^2	0.213		0.226		0.216		0.193		0.217		0.200	
N	166		166		166		166		166		166	

Panel B

Variables	Model 4-1		Model 4-2		Model 4-3		Model 4-4		Model 4-5		Model 4-6	
	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value
DUA	0.480	(0.321)	0.487	(0.324)	0.495	(0.314)	0.532	(0.272)	0.579	(0.250)	0.556	(0.260)
MAN	1.268***	(0.007)	1.398***	(0.002)	1.316***	(0.005)	1.174***	(0.010)	1.353***	(0.003)	1.236***	(0.007)
AG	0.654	(0.295)	0.554	(0.379)	0.591	(0.345)	0.975*	(0.100)	0.813	(0.176)	0.892	(0.140)
GOV	2.372**	(0.021)	2.749**	(0.014)	2.570**	(0.017)	2.642**	(0.011)	3.120***	(0.008)	2.820***	(0.009)

SSDM	-0.009	(0.489)	-0.017	(0.269)	-0.015	(0.277)	-0.011	(0.384)	-0.020	(0.165)	-0.017	(0.199)
CR	-0.002	(0.280)	-0.002	(0.182)	-0.001	(0.415)	-0.002	(0.154)	-0.003*	(0.091)	-0.002	(0.267)
EPS	0.123*	(0.064)					0.149**	(0.033)				
ROA			0.071***	(0.006)					0.082***	(0.001)		
ROE					0.045**	(0.020)					0.052***	(0.006)
Beta	-1.555**	(0.039)	-1.293*	(0.100)	-1.432*	(0.061)						
Risk							-0.126	(0.439)	-0.183	(0.279)	-0.098	(0.556)
LEV	0.189	(0.119)	0.198	(0.101)	0.177	(0.142)	0.157	(0.201)	0.171	(0.160)	0.148	(0.224)
DA	-7.139***	(0.009)	-7.347***	(0.006)	-7.267***	(0.006)	-6.177**	(0.029)	-6.105**	(0.027)	-6.497**	(0.018)
LnTA	0.135	(0.388)	0.152	(0.335)	0.225	(0.162)	0.126	(0.424)	0.155	(0.329)	0.222	(0.167)
Intercept	-1.137	(0.689)	-2.131	(0.457)	-3.063	(0.302)	-2.330	(0.409)	-3.326	(0.244)	-4.308	(0.138)
Nagelkerke R^2	0.303		0.326		0.310		0.279		0.316		0.290	
Cox & Snell R^2	0.227		0.244		0.233		0.209		0.237		0.218	
N	166		166		166		166		166		166	

1. DUA is the dummy variable (1 indicates that CEO duality; 0 otherwise); FAM is the dummy variable (1 indicates that family firms; 0 otherwise); MAN is the dummy variable (1 indicates that firms are controlling by the professional managers; 0 otherwise); AG is the dummy variable (1 indicates collectively-owned firms; 0 otherwise); GOV is the dummy variable (1 indicates government-owned firms; 0 otherwise);SSDM is the deviation ratio between the number of board seats controlled and the percentage of shares owned by the ultimate owner; CR is the current ratio; Financial indicators include: EPS (earnings per share), ROA (return on assets) and ROE (return on equity); Risk indicators include: BETA (market risk) and RISK (unsystematic risk); DA (discretionary accruals); LNTA (the natural log of total assets); LEV (leverage)

2. ***significant at 1% level, ** significant at 5% level, * significant at 10% level

Thirdly, we repeat our tests by controlling the industry effects. This is because that there are more than half of the listed companies are electronic based in the Taiwan stock market. It is our contentions the relationship between the CSR and the ownership in electronic industry may be differ to non-electronic industries. The results are shown in Table 7. It is found that firms in the non-electronic industries would like to undertake the CSR activities (coefficients of IND are insignificant and negative). Other results are similar with those reports in Table 3 and Table 4. Therefore, the results shown in Table 5-7 strengthen our findings and the results from these sensitivity tests are comparable to those of the primary analysis.

Table 7. Results of robustness checks: electronic and non-electronic industries

Panel A

Variables	Model 3-1		Model 3-2		Model 3-3		Model 3-4		Model 3-5		Model 3-6	
	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value
DUA	0.486	(0.250)	0.478	(0.267)	0.503	(0.238)	0.529	(0.218)	0.581	(0.194)	0.558	(0.200)
FAM	-0.962***	(0.007)	-1.111***	(0.003)	-0.994***	(0.006)	-1.056***	(0.003)	-1.212***	(0.001)	-1.096***	(0.002)
SSDM	-0.016	(0.181)	-0.022	(0.108)	-0.019	(0.108)	-0.020*	(0.086)	-0.027**	(0.046)	-0.024**	(0.046)
CR	-0.001	(0.593)	-0.001	(0.435)	0.000	(0.798)	-0.001	(0.387)	-0.001	(0.290)	-0.001	(0.573)
EPS	0.092*	(0.098)					0.111*	(0.064)				
ROA			0.067***	(0.007)					0.081***	(0.001)		
ROE					0.032*	(0.064)					0.037**	(0.029)
Beta	-1.464**	(0.027)	-1.055	(0.134)	-1.386**	(0.038)						
Risk							-0.216	(0.143)	-0.268*	(0.086)	-0.203	(0.174)
LEV	0.150	(0.196)	0.146	(0.210)	0.140	(0.226)	0.110	(0.343)	0.114	(0.331)	0.100	(0.381)
DA	-5.956**	(0.015)	-6.604***	(0.007)	-6.145***	(0.010)	-4.914*	(0.055)	-5.467**	(0.035)	-5.207**	(0.040)
IND	-0.288	(0.410)	-0.590	(0.127)	-0.309	(0.384)	-0.364	(0.292)	-0.746*	(0.052)	-0.397	(0.259)
LnTA	0.248*	(0.074)	0.272*	(0.052)	0.310**	(0.029)	0.250*	(0.071)	0.304**	(0.034)	0.318**	(0.024)
Intercept	-2.060	(0.418)	-3.028	(0.243)	-3.335	(0.206)	-3.123	(0.219)	-4.275	(0.104)	-4.454*	(0.088)
Nagelkerke R^2	0.249		0.274		0.250		0.232		0.278		0.235	
Cox & Snell R^2	0.187		0.205		0.187		0.174		0.108		0.176	
N	192		192		192		192		192		192	

Panel B

Variables	Model 4-1		Model 4-2		Model 4-3		Model 4-4		Model 4-5		Model 4-6	
	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value	coefficient	P-value

DUA	0.527	(0.225)	0.472	(0.288)	0.538	(0.221)	0.635	(0.151)	0.627	(0.175)	0.650	(0.147)
MAN	0.877*	(0.053)	1.198***	(0.010)	0.950**	(0.036)	0.837*	(0.061)	1.238***	(0.008)	0.932**	(0.038)
AG	0.800	(0.171)	0.649	(0.271)	0.751	(0.199)	1.057*	(0.065)	0.795	(0.169)	0.999*	(0.082)
GOV	2.021**	(0.039)	2.322**	(0.029)	2.141**	(0.034)	2.464**	(0.016)	2.840**	(0.014)	2.549**	(0.014)
SSDM	-0.014	(0.237)	-0.021	(0.119)	-0.018	(0.130)	-0.017	(0.144)	-0.026*	(0.056)	-0.022*	(0.070)
CR	-0.001	(0.401)	-0.002	(0.247)	-0.001	(0.565)	-0.002	(0.219)	-0.002	(0.125)	-0.001	(0.355)
EPS	0.104*	(0.078)					0.122**	(0.048)				
ROA			0.075***	(0.005)					0.089***	(0.001)		
ROE					0.037**	(0.040)					0.042**	(0.019)
Beta	-1.411**	(0.042)	-1.067	(0.142)	-1.340*	(0.055)						
Risk							-0.248*	(0.100)	-0.310*	(0.054)	-0.231	(0.130)
LEV	0.160	(0.176)	0.159	(0.185)	0.150	(0.205)	0.121	(0.302)	0.127	(0.291)	0.112	(0.337)
DA	-5.970**	(0.014)	-6.835***	(0.005)	-6.262***	(0.008)	-4.644*	(0.066)	-5.256**	(0.042)	-5.030**	(0.045)
IND	-0.183	(0.634)	-0.609	(0.158)	-0.231	(0.553)	-0.177	(0.639)	-0.707	(0.103)	-0.246	(0.523)
LnTA	0.216	(0.132)	0.231	(0.110)	0.284*	(0.053)	0.224	(0.121)	0.262*	(0.077)	0.296**	(0.044)
Intercept	-2.541	(0.325)	-3.423	(0.191)	-3.942	(0.140)	-3.764	(0.146)	-4.748*	(0.074)	-5.213**	(0.049)
Nagelkerke R^2	0.260		0.288		0.262		0.252		0.297		0.254	
Cox & Snell R^2	0.195		0.216		0.197		0.189		0.223		0.191	
N	192		192		192		192		192		192	

1. DUA is the dummy variable (1 indicates that CEO duality; 0 otherwise); FAM is the dummy variable (1 indicates that family firms; 0 otherwise); MAN is the dummy variable (1 indicates that firms are controlling by the professional managers; 0 otherwise); AG is the dummy variable (1 indicates collectively-owned firms; 0 otherwise); GOV is the dummy variable (1 indicates government-owned firms; 0 otherwise);SSDM is the deviation ratio between the number of board seats controlled and the percentage of shares owned by the ultimate owner; CR is the current ratio; Financial indicators include: EPS (earnings per share), ROA (return on assets) and ROE (return on equity); Risk indicators include: BETA (market risk) and RISK (unsystematic risk); DA (discretionary accruals); LNTA (the natural log of total assets); LEV (leverage); IND (industry variables)

2. ***significant at 1% level, ** significant at 5% level, * significant at 10% level

5. Conclusions

We used several regression models to investigate the relationship between the CSR and the ownership structure in Taiwan, an Asia emerging market. In general, our results suggest that firms which are controlled by professional managers, government-owned, or collectively-owned would like to undertake serious efforts to integrate the CSR into various aspects of their companies (Lee and Faff, 2009; Harjoto and Jo, 2007). This may be because the CSR is a good communication tool for a firm and the CSR could also decrease the information asymmetry between managers and investors (Reverte, 2011). This may suggest that firms in Taiwan tend to spend more time and efforts on their social behaviours and green investors increase the demand the stocks of the firms with better social responsibilities (Ghoul et al., 2011). In terms of the firms' common risk factors, our results indicate that CSR firms have significantly lower systematic risk (Beta) and unsystematic risk (RISK). The results of risk factors are consistent with prior studies. This study also reposts that earnings quality and the CSR is positively associated. This may suggest that CSR firms with a better quality of earnings, management will be less likely to use of discretionary accruals to manipulate earnings, which making lower information asymmetry between financial report users and business managers (Aboody et al., 2005). The results of this study also suggest that family firms are less likely to engage in the CSR activities in Taiwan. This may be because family firms are self-interested and only concerned about the firm's financial performance (Morck and Yeung, 2004). Prior literature suggested that the cultural differences between the Western and Oriental societies may have different investors' perceptions of the CSR and the ownership structures. However, our findings show that the cultural differences do not have effects on the relationships between the CSR and the ownership structures. This may indicate that the methods used in this study provide a good proxy for firms' CSR and the ownership structure. Therefore, we strongly suggest that the Taiwanese firms should increase their CSR activities which could be a communication tool between firms and investors and could reduce the information asymmetries.

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