

Corporate Social Responsibility and Value of Cash Holdings in Taiwan:

The Role of Family Firms

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Abstract

This paper is to shed light on the relationship between corporate social responsibility (CSR) and cash value at family businesses using 3630 firm-year observations representing 395 listed Taiwanese companies. The results indicate that CSR has a significantly positive impact on cash value at family businesses, but no apparent relationship is supported at non-family businesses. Regarding the CSR activities, environmental protection, corporate commitment and corporate governance are consistently and significantly confirm the positive effects on corporate cash value at the family business, but social participation does not confirm this finding. The above results imply that conflict resolution view/ or socio-emotional wealth view is evidenced at the relationship between family firm's CSR and cash value. To the best of our knowledge, our results are firstly documented on the relationship between cash value and CSR of family business and thus make major contributions to related literature of family business.

JEL Classification: G32; G34; M14

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1. Introduction

The effective use of cash can generate corporate value or cash value. Lu, Shailer and Yu (2017) and Arouri and Pijourlet (2017) showed that corporate social responsibility (CSR) can enhance the value of cash holdings. Firms are expected and required to operate business in considering not only the interests of shareholders but also those of stakeholders including employees, suppliers, and environmental protection, etc. CSR is defined as exhibiting corporate responsibility for stakeholders, the economy, society and external environments while pursuing profits for stockholders. Recent studies have shown that CSR has an impact on the following issues, eg. market value of firms (Bird et al., 2007; Galema et al., 2008; Jiao 2010; Marsat and Williams, 2013; D'Amato and Falivena, 2020), the cost of equity capital (El Ghouli et al., 2011), and financial risk (Boutin-Dufresne and Savaria, 2004; Lee and Faff, 2009; Oikonomou, Brooks, and Pavelin, 2012). So far, except for Arouri and Pijourlet (2017) and Lu, Shailer and Yu (2017), there is limited research on the cash value impact of CSR performance. In support of the conflict-resolution view of CSR, Arouri and Pijourlet (2017) reveals that greater stakeholder commitment from mitigating tension between firms and stakeholders helps increase firm performance, thus, more efficient use of financial resources in terms of cash values.

However, corporate agency problem may play a role in the impact of CSR on cash values. Dittmar and Mahrt-Smith (2007) showed that one dollar of cash could generate up to twice the value of cash on average when firms have better governance without serious agency problems. Harford, Mansi, and Maxwell (2008) found results echoing those of Dittmar and Mahrt-Smith (2007). In pursuit of self-interests, CEOs who are firmly entrenched are more engaged in CSR activities (Surroca and Tribo, 2008; Fabrizi et al., 2014). CSR activities can be used to pursue manager's own interests, such as corporate philanthropic giving to enhance managers' reputations (Brown et al. 2006),

to establish a manager's own power (Cespa and Cestone, 2007). As a result, CSR activities are negatively associated with the efficient use of corporate cash due to the agency problem. Recently, the problem of controlling shareholders infringing minority shareholders' benefit has become the core issue in corporate agency problem, especially in the family business of emerging markets. And, family enterprises are characterized by family members usually holding more shares and taking important management positions at firms (controlling shareholders). This characteristic easily generates the interest conflict between controlling shareholders and minority shareholders, reflecting a different agency problem from the traditional agency problem experienced in firms with dispersed ownership. Agency problem typically occurs at family firms with highly concentrated ownership in which may lead to inefficient use of cash. Even though, the conflict resolution view of CSR mentioned above may predict the positive association with efficient use of cash for family business. This study contributes to clarify two competing views of CSR impact on cash value at family business.

Most of the prior literature showed that family businesses actively engage in CSR (Campopiano and Massis, 2015; Laguir, Laguir, and Elbaz, 2016). Compared to non-family enterprises, family enterprises have a stronger understanding of teamwork and exhibit higher levels of coordination efficiency (Ensley and Pearson, 2005), more willing to disclose nonstandard corporate social responsibility reports, such as, reports on environmental, green, and charitable issues to develop an image of active social responsibility (Campopiano and Massis, 2015). Considering sustainable development and family inheritance, family enterprises will not overinvest in CSR; instead they will actively and rationally engage in CSR to improve the reputation of the company, thereby enhancing the value of the company and achieving the purpose of sustainable operation (Elbaz and Laguir, 2014). Whether the engagement of CSR and the relation

between CSR and cash value exists difference between family and non-family firms is explored in this study.

According to Yeh, Lee, and Woidtke (2001), 75% of Taiwanese companies listed on the Taiwan Stock Exchange (TWSE) and Taipei Exchange (TPEX) are family business. By examining a sample of Taiwanese listed firms, an emerging market characterized by family businesses, our empirical results show significant differences in the relation between corporate social responsibility and cash value among family and non-family firms. The cash value of family firms is positively affected by corporate social responsibility while no significant results are found for non-family firms. This study further examines the impact of corporate social responsibility on cash value across four components (environmental protection, corporate commitment, corporate governance and social participation). Apart from social participation, the other components are consistently and significantly supportive of the above results on CSR. That is, the higher the degree of environmental protection, corporate commitment and corporate governance, the higher the cash value of family enterprises. Again, this is not true for the sample of non-family firms. These results serve as initial observations to relevant literature in family business and as the main contributions of this paper.

The paper is arranged as follows. In addition to the Introduction, the following section reviews the related literature and establishes corresponding hypotheses. The third section presents our research methodology, which is followed by an analysis of empirical results given in section four. Finally, conclusions and limitations of this study are provided.

2. Related Literature and Hypotheses

2.1 Corporate Social Responsibility and Cash Value

How does CSR affect cash value? There are limited research so far (Arouri and Pijourlet, 2017; Lu et al., 2017). In line with the conflict-resolution view, Arouri and Pijourlet (2017) concluded the positive relation between CSR and cash value, that CSR policies are not seen as a means for managers to pursue their own interests, but as a means to act in shareholders' interests, by resolving conflicts with stakeholders. They argue that greater stakeholder commitment from mitigating tension between firms and stakeholders help increase firm performance, thus, more efficient use of financial resources in terms of cash values. By looking different dimensions of CSR, Arouri and Pijourlet (2017) also discusses the impact of CSR on value of holding cash by classifying CSR as Environmental (Climate Change, Natural Resources, Pollution and Waste, and Environmental Opportunities) and Social Performance (Human Capital, Product Liability, Stakeholder Opposition, and Social Opportunities). The results show that both environmental and social performance have significantly positive impact on the cash value of a company since investors give a higher value to cash held by firms that have a high CSR rating. Lu, et al. (2017) studied the CSR disclosure and the value of cash holdings discovered that information in CSR reports can facilitate monitoring and thus induce more efficient use of cash holdings. These studies support the positive relation between CSR and cash value. This study focuses on exploring the role of the family firm in this relationship between CSR and cash value, which is lacking from the Arouri and Pijourlet (2017) and Lu, et al (2017).

2.2 The cash value of family businesses

According to agency problem II (conflict of interest between controlling and minority shareholders), family members usually as controlling shareholders at family firms might entrench the interests of minority shareholders through pyramid and cross shareholding. As such, we argue a negative relationship between family control rights and cash value. Liu (2011) showed that the cash value of

family businesses is less than that of non-family businesses since family firms easily spend cash on investment plans that may not be necessary or beneficial to external shareholders. Liu, Luo, and Tian (2015) again confirmed the decline of the cash value of family firms since serious agency problems experienced in family businesses cause family firms to hold more cash for the self-interested use of funds rather than for investment planning or to issue dividends to shareholders. Chen, Hsu, and Chen (2014) also found that cash value at non-family businesses is higher than that at family businesses since managers of family businesses tend to pursue their own interests and invest in negative NPV projects when there is excessive cash, thus further decreasing the cash value of family businesses. Based on the above, the following hypothesis is established.

Hypothesis 1: The cash value of family firms is lower than that of non-family firms.

2.3 Corporate Social Responsibility and the Cash Value of Family Businesses

According to section 2.1, the relation between CSR and cash value could be positive (conflict-resolution view) or negative (agency problem from managerial entrenchment). This deserves further examination, especially in family businesses. Business models and operation modes of family businesses controlled by family members are quite different from those of non-family businesses. As such, resources allocated to CSR are expected to differ between family and non-family businesses. Whether family business engaged in CSR affects cash value deserves further investigation. Based on our knowledge, no study has been documented using family firms as a research sample to explore the relationship between CSR and cash value. Here, we argue two opposite viewpoints to address the issue—the positive views from conflict-resolution/or socio-emotion wealth and the negative views from agency problem as follows.

First of all, we would like to know, “Do family firms have different behavior of resource allocation in CSR activities from non-family firms ?” A family business is characterized by the ownership structure with controlling shareholders whose shareholdings are mainly held by family members. Most studies show that family firms invest more heavily in CSR than non-family firms because they wish to maintain their family image and reputation (Elbaz and Laguir, 2014; Campopiano and Massis, 2015). Elbaz and Laguir (2014), using 46 listed companies in Morocco, found that managers at family businesses tend to engage in CSR to maintain their fames and image. Campopiano and Massis (2015) studied the samples of Italian listed companies in 2011 and concluded that family firms are more active in corporate social responsibility than non-family firms because of maintaining a positive image. They also think that non-family businesses tended to passively engage in CSR activities while family firms will engage in more nonstandard CSR activities, such as environmental and green issues and philanthropy. The above findings show that family businesses engage in CSR more actively than non-family businesses.

Does this engagement in CSR among family businesses generate cash value? So far, there is limited research on this issue,⁴ we argue that there exists a positive and negative view of the family firm’s CSR on the corporate cash value. The positive view of conflict-resolution theory suggests that CSR can help solve conflicts between stakeholders, and we argue that stronger engagement in CSR at family firms convinces investors that managers at family business can efficiently manage cash to create cash value, in line with findings of Arouri and Pijourlet (2017). Arouri and Pijourlet (2017) studied firms from 50 countries from 2005 to 2009 and showed that CSR could enhance

⁴ Nekhili, Nagatib, Chtiouic and Rebolledod (2017) pointed out that CSR disclosure would enhance family firm’s market value.

cash value because engagement in CSR signals good information to external investors about corporate contributions made in regard to environmental protection and social participation.

Except for conflict-resolution theory, the socio-emotional wealth view, a behavior theory of family business, could also help verify the positive relationship between family firm's engagement in CSR and corporate cash value. Berrone, Cruz, and Gomez-Mejia (2012) proposed the socio-emotional wealth view (SEW) that family firms have their own idiosyncratic socio-emotional endowments, leading family owners to achieve non-economic goals, for example, the power and influence of family control over the business, the satisfaction of family belongings, the continuation of family values, the inheritance of family businesses, the maintenance of social capital of family businesses, the fulfillment of family responsibilities based on kinship, the family members' Altruism, and the social status of the family, etc. Kammerlander, Sieger, Voordeckers, and Zellweger (2015) demonstrated that socio-emotional wealth is the channel to affect family business value. Berrone et al. (2012) and Gomez-Mejia, Haynes, Nuñez-Nickel, Jacobson, and Moyano-Fuentes (2007) argue that family firms tend to avoid losses in the social-emotional wealth even if they have to undertake more firm risks. Berrone, Cruz, Gomez-Mejia, and Larraza-Kintana (2010) showed that family firms in polluting industries usually generate less pollution since they tend to preserve their family image (i.e., social-emotional wealth).

As mentioned in section 2.2, family business tends to more actively engage in nonstandard CSR activities, and the disclosure of these CSR will help investors understand family firm's social responsibility investments. According to Lu et al. (2017), CSR disclosure is positively and significantly related to cash value. Using a sample of U.S. listed companies during 1992-2011, Lu et al. (2017) found that CSR reports help mitigate information asymmetries between outside investors and firms, thus, help

decrease risks of managers misallocating cash and enhance cash value from 1 to 1.69 dollars. This implies that CSR disclosure has a monitoring function that enhances a company's cash value in terms of the efficient use of cash by managers.

As noted above, family firms actively engage in CSR activities in the interest of sustainable development, family inheritance, and reputation management (Elbaz and Laguir, 2014; Campopiano and Massis, 2015). And, the social-emotional wealth perspective suggests family firms tend to pursue non-financial goal via engagement in CSR. Accordingly, we argue that these will have a positive effect on cash value, and we establish hypothesis as follow.

Hypothesis 2: Engagement in CSR helps family firms improve the allocation of corporate cash, increasing the value of cash holdings.

3. Research Methodology

3.1 Research Design

This study explores the impact of CSR on cash value at family businesses using 3630 firm-year observations representing 395 individual Taiwanese companies listed on the TWSE (Taiwan Stock Exchange) and TPEX (Taipei Exchange) from 2005 to 2017, excluding financial industry and public utilities and companies with insufficient or missing values. Financial data were collected from the Taiwan Economic Journal (TEJ), and data on CSR were manually collected from online newspapers, Common Wealth Magazine and Global Views Monthly.⁵

Following Dittmar and Mahrt-Smith (2007), we established a cash value model formulated as equation (1) and estimated by OLS regression and endogeneity

⁵ Corporate negative CSR score were available from TEJ.

consideration models (2SLS, GMM, and LIML). The empirical model is firstly estimated at a full sample and then separately at a sample of family controlled and non-family controlled firms. According to the Taiwanese Economic Journal, a family-controlled firm is defined as a family business with the following four characteristics. 1). The chairman and general manager are appointed by a single family member, 2). The proportion of family-controlled seats on the board is greater than 50% (excluding friendly seats) and the proportion of board seats for friendly and external directors is less than 33%, 3). The proportion of family-controlled seats on the board is greater than 33%, the proportion of director-controlled seats is greater than 33% and at least three family members serve as supervisors or directors on the board and as managers, 4). The level of family-controlled shareholding is greater than the necessary level of control shareholding.

3.2 Empirical Model

$$\begin{aligned}
CV_{i,t} = & \gamma_0 + \gamma_1 CASH2_{i,t} + \gamma_2 EBITDA2_{i,t} + \gamma_3 NA2_{i,t} + \gamma_4 RD2_{i,t} + \gamma_5 INTERSET_{i,t} \gamma_6 + \\
& COMDIV_{i,t} + \gamma_7 CASH_{t-1,i,t-1} + \gamma_8 LEV_{i,t} + \gamma_9 NF_{i,t} + \gamma_{10} CASH_{i,t} \times CASH2_{i,t} + \\
& \gamma_{11} LEV_{i,t} \times CASH2_{i,t} + \gamma_{12} CSR_{i,t} + \gamma_{13} CSR_{i,t} \times CASH2_{i,t} + \sum_{T=5}^{16} YEAR_T + \varepsilon_{i,t}
\end{aligned}
\tag{1}$$

where Δ in the definition for each variable is the change occurring from t year to t-1 year, and all control variables are divided by the lag of the total market value of equity (M_{t-1}). $CV_{i,t} = r_{i,t} - R_t$, $r_{i,t}$, the company i stock return for t year, R_t is the rate of the return of the weighted stock market index for year t. $CASH2_{i,t} = \frac{\Delta C_{i,t}}{M_{i,t-1}}$, $\Delta C_{i,t}$ is the change in cash plus cash equivalents of company i for t-1 to t. Except for CSR, the variable definitions are the same as in the context of Dittmar and Mahrt-Smith (2007), $CSR_{i,t}$ is the corporate social responsibility (CSR) index measured

from ACSR+PCSR-NCSR of company i for period t .⁶

4. Empirical results

4.1 Empirical Analysis

Following Dittmar and Mahrt-Smith (2007), the cash value model is estimated by OLS at full sample (Table 1), family sample (Table 2) and non-family sample (Table 3) respectively. As shown in Table 1, the CASH2 coefficients are consistently and statistically significant in Models 1 to 7, indicating that the marginal cash values are significantly positive, that is, holding cash can significantly increase firm value. Regarding CSR, our results reveal that investors give positive value in response to CSR engagement with significant positive coefficients of 0.0030 (CSR in Model 1), 0.0030 (PCSR in Model 2), 0.0104 (CG in Model 4), and 0.0141 (EP in Model 7). In other words, corporate market returns can be enhanced through engagement in social responsibility (CSR) and especially through participation in positive CSR (PCSR), environmental protection (EP) and the strengthening of corporate governance (CG) as well. The more CSR activities a firm engages in, the stronger its corporate image among external investors will be and the higher market returns will be as a result. The better corporate image from more CSR activities is observed by external investors, as a result, the higher market returns is created.

Whether CSR generates cash value or not, the coefficients of interaction terms between the change in cash holdings (CASH2) and CSR are examined. Model 1 of Table 1 shows that CSR*CASH2 is positive but insignificant. However, we find the coefficients of CG*CASH2 (0.1441 in Model 4) and CC*CASH2 (0.1288 in Model 6) to be significantly positive, meaning that stronger corporate governance and corporate

⁶ A detailed definition and measure of CSR are given in Appendix 1.

commitments help enhance corporate cash value. Dittmar and Mahrt-Smith (2007) concluded that stronger corporate governance enhances cash value since agency problems are mitigated by better governance, preventing managers' misallocation of cash. In addition, cash value is increased with more corporate commitment to employees in terms of employee welfare and workplace environments. In line with conflict resolution view, strengthening corporate commitments to employees help positively signal to market investors that believe firm will efficiently use corporate cash, in turn increasing cash value.

【Insert Table 1 about here】

We further separate our sample into family and non-family businesses to explore the influence of CSR on cash value, and corresponding results are shown in Tables 2 (family sample) and 3 (non-family sample).

The significantly positive coefficients of CASH2 shown in Tables 2 and 3 illustrate once again that value can be generated by holding more cash. We also found coefficients of CASH2 for non-family firms to be a bit higher than those of family firms regardless of the model used,⁷ indicating that more value has been generated through cash holding in non-family firms than in family firms, Hypothesis 1 is confirmed. In line with prior research (Liu, 2011; Liu et al., 2015), the cash value of family businesses is lower than that of non-family businesses. Even though, results still reveal that value can be significantly generated by holding more cash at family business.

Regarding the effect of CSR on cash value, Table 2 and 3 present different findings at family and non-family business. The coefficient of CSR*CASH2 in Model 1 shown in Table 2 is significantly positive (0.0612), meaning that CSR has a positive

⁷ For example, in untabulated results (Model 1 of Tables 2 and 3), the coefficients of CASH2 in Model 1 are 1.2574 (with a p-value 0.000) and 1.7682 (with a p-value 0.000) for family firms and non-family firms respectively.

impact on the cash value of family businesses. However, the coefficient of CSR*CASH2 in Model 1 shown in Table 3 is insignificant for non-family businesses. To maintain a family-centered image and strong reputation (sustainable operations), family firms engage in CSR to enhance their cash value, confirming conflict resolution view/ or socio-emotional wealth view of CSR in Hypothesis 2. Even though the cash value of family businesses is a bit lower than that of non-family businesses according to Hypothesis 1, more active involvement in CSR helps family firms establish their corporate public image, enabling positive response of market investors believing the efficient use of cash at family firms, thus increasing cash value. Nevertheless, the scenario does not occur at non-family firms. Arouri and Pijourlet (2017) concluded that CSR can raise cash value because a high CSR performance via a greater commitment from stakeholders will enhance corporate decision making and is a means for managers to act in the shareholders' interests, by increasing the efficiency of the use of cash. In line with conflict resolution view, our results support that family business engage in CSR to create cash value.

Above results still hold true for family business when we use alternative ways of measuring CSR. For the other measures of CSR (i.e., PCSR, NCSR, CG, CC, SP and EP), all results are consistent with the above findings on CSR except for those of SP.

To obtain greater stakeholder commitment (CC) will generate a more efficient use of financial resources from facilitating the decision making process. Campopiano and Massis (2015) think that family firms will engage in more nonstandard CSR activities, such as, environmental and green issues to maintain family reputation. Through these environment protection participation (EP) or positive social activities (PCSR) enable market investors to expect that more socially responsible firms use their cash resources in a more efficient way than less responsible firms. Similarly, Dittmar and Mahrt-Smith (2007) showed that one dollar of cash can generate up to twice the value of cash on

average when firms have better governance (CG). Above findings are empirically supported by the conflict-resolution view of CSR. Again, our results from alternative measures of CSR support socio-emotional wealth view that family business engage in CSR to create cash value.

Regarding negative effect of NCSR, the coefficient of NCSR * CASH2 in Model 3 shown in Table 3 is significantly negative (-0.3004); however, it does not reach a significant level for non-family firms (Model 3 shown in Table 4). This finding reveals that negative CSR engagement, eg. involving in illegal activities, issuing environmental pollution, etc., will result in poor social image, market investors will respond with lower value to less responsible firms, and finally discount corporate cash value. Again, socio-emotional wealth view plays a role in family business CSR engagement in relation to cash value.

In sum, our findings of the impact of CSR activities on corporate cash value at family firms empirically support the positive view of conflict resolution theory/ or socio-emotional wealth view of hypothesis H2.⁸

【Insert Table 2 about here】

【Insert Table 3 about here】

4.2 Endogeneity

Considering the endogeneity of CSR due to the specific culture or characteristics of the company, we thus use various measurement methods (2SLS, GMM, and LIML) to solve the endogenous problem of CSR. Again, similar results are confirmed in that CSR engagement in family businesses help improve cash value, and that is not

⁸ In the untabulated regression, we also examine whether controlling shareholders at family firms play a role of entrenchment effect or not. The empirical results reveal that CSR engagement in family businesses with higher control-affiliated directors will reduce the positive effect of CSR on cash value, though this is not observed at non-family businesses. Detail results are available from author upon request.

supported for non-family businesses (the 2SLS coefficient of PCSR*CASH2 for family business is 0.0630 with a p-value 0.009, untabulated). Regarding alternative measures of CSR (i.e., PCSR, NCSR, CG, CG and EP), all results are consistent except in the case of SP. Based on above, the positive impacts of CSR activities on corporate cash value at family firms are empirically supported again, confirming the conflict resolution theory of CSR/ or socio-emotional wealth view in hypothesis H2.⁹

⁹ The table for the case of endogeneity is condensed due to the space limitations. Detail results are available from author upon request.

5. Conclusion

Our empirical results show significant different behavior in the relationship between corporate social responsibility and cash value between family and non-family firms. The cash value of family enterprises is positively affected by corporate social responsibility but not for non-family firms, supporting positive view of conflict resolution theory and socio-emotional wealth of CSR. These results also hold true when endogeneity of CSR is considered and alternative measures of CSRs are used including corporate governance, corporate commitment and environmental protection. Family firms will use CSR engagement as an instrument to signal market investors for family socio-emotional endowments, which enables higher market valuation of the efficient usage of cash. Clearly, CSR policies are seen as a means to act in shareholders' interests by resolving conflicts with stakeholders at family business.

This research has improved the understanding of the financial impact of CSR on corporate cash value, such as, different behavior between family and non-family business, as well as examining the issue using alternative measures of CSR. To the best of our knowledge, our findings contribute to serve as initial study to clarify family and non-family firm's CSR engagement, and its impact on cash value

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Appendix 1: CSR variable definitions and measurements

Variable	Definition	Measurements
$CSR_{i,t}$	Corporate Social Responsibility	$CSR = ACSR + PCSR - NCSR$; values range from - 5 to 25; a negative value means that a firm is engaged in illegal activity.
$ACSR_{i,t}$	CSR award scores	Variable equal to 1 when a firm wins an award for CSR from Common Wealth Magazine and Global Views Monthly and equal to 0 otherwise.
$PCSR_{i,t}$	Positive Corporate Social Responsibility	$PCSR = PCG + PCC + PSP + PEP$ ranging from 0 to 27; PCG, PCC, PSP and PEP are defined as follows.
$NCSR_{i,t}$	Negative corporate social responsibility	$NCSR = NCG + NCC + NSP + NEP$ with a value of between 0 and 5.
$PCG_{i,t}$	Positive corporate governance score	Accumulated scores of positive incidents occurring in independent boards or corporate information disclosure reported in online news.
$PCC_{i,t}$	Positive corporate commitment	Total scores for positive corporate commitment to consumers and on nurturing and caring for employees. One point is assigned from an independent event reported in online news.
$PSP_{i,t}$	Positive social participation	Total scores for positive social participation, e.g., whether a firm has long invested in engagement in specific social issues and has actively exerted its influence. Events are identified from online news, and one point is given for engagement in a positive social event.
$PEP_{i,t}$	Positive Environmental Protection	A search of online news that positively relates firms to specific goals and practices surrounding environmental protection and energy management. One point is given for each positive independent event.
$NCG_{i,t}$	Negative corporate governance score	Accumulated scores of negative incidents occurring in independent boards or of corporate information disclosed by the TEJ.
$NCC_{i,t}$	Negative corporate commitment	Total scores on negative corporate commitments to consumers and on nurturing and caring for employees. One point is given for each

		independent event listed by the TEJ.
$NSP_{i,t}$	Negative social participation	Total scores for negative social participation, e.g., whether a firm has long invested in specific social issues and has actively exerted its influence. Events are collected from the TEJ, and one point is given for each negative social event.
$NEP_{i,t}$	Negative environmental protection	Firms' goals and practices that compromise environmental protection and energy management according to data from the TEJ. One point is given for each negative independent event.
$CG_{i,t}$	Corporate governance score	$CG_{i,t} = PCG_{i,t} - NCG_{i,t}$ where values range from - 3 to 9.
$CC_{i,t}$	Corporate Commitment Score	$CG_{i,t} = PCC_{i,t} - NCC_{i,t}$ where values range - 2 to 11.
$SP_{i,t}$	Social Participation Score	$SP_{i,t} = PSP_{i,t} - NSP_{i,t}$ where values range - 3 to 22.
$EP_{i,t}$	Environmental Protection Score	$EP_{i,t} = PEP_{i,t} - NEP_{i,t}$ where values range - 5 to 8.

Note: The construction of CSR index ($CSR = ACSR + PCSR - NCSR$) is analogical approach based on El Ghouli, Guedhami, Kwok and Mishra (2011).

Table 1 CSR and cash value (full sample)

	Model 1	Model 2	Model3	Model 4	Model 5	Model 6	Model 7
Intercept	0.0450 (0.023)**	0.0438 (0.028)**	0.0579 (0.003)***	0.0457 (0.019)**	0.0445 (0.025)**	0.0523 (0.007)***	0.0460 (0.017)**
CASH2	1.4253 (0.000)***	1.4072 (0.000)***	1.5265 0.0000***	1.4197 0.0000***	1.3591 0.0000***	1.4428 0.0000***	1.4242 0.0000***
EBITDA2	-0.0079 (0.4950)	-0.0079 (0.4960)	-0.0079 (0.4990)	-0.0082 (0.4780)	-0.0080 (0.4900)	-0.0077 (0.5080)	-0.0078 (0.5040)
NA2	0.3576 (0.000)***	0.3583 (0.000)***	0.3569 (0.000)***	0.3579 (0.000)***	0.3575 (0.000)***	0.3627 (0.000)***	0.3589 (0.000)***
RD2	0.0033 (0.9350)	0.0031 (0.9380)	0.0036 (0.9290)	0.0035 (0.9310)	0.0023 (0.9530)	0.0027 (0.9460)	0.0029 (0.9420)
INTEREST	-13.3214 (0.000)***	-13.3087 (0.000)***	-13.2986 (0.000)***	-13.3533 (0.000)***	-13.2685 (0.000)***	-13.2366 (0.000)***	-13.2967 (0.000)***
COMDIV	0.0578 (0.2000)	0.0580 (0.1980)	0.0586 (0.1970)	0.0578 (0.1990)	0.0584 (0.1960)	0.0596 (0.1870)	0.0575 (0.2040)
$CASH_{t-1}$	0.2877 (0.000)***	0.2888 (0.000)***	0.2861 (0.000)***	0.2913 (0.000)***	0.2854 (0.000)***	0.2910 (0.000)***	0.2922 (0.000)***
LEV	-0.1432 (0.002)***	-0.1437 (0.002)***	-0.1389 (0.002)***	-0.1410 (0.002)***	-0.1424 (0.002)***	-0.1404 (0.002)***	-0.1433 (0.002)***
NF	0.0170 (0.2680)	0.0167 (0.2760)	0.0172 (0.2590)	0.0159 (0.2980)	0.0172 (0.2610)	0.0152 (0.3180)	0.0151 (0.3230)
CASH*CASH2	0.2232 (0.4560)	0.2200 (0.4620)	0.2383 (0.4280)	0.2425 (0.4180)	0.2348 (0.4310)	0.2194 (0.4640)	0.2152 (0.4710)
LEV*CASH2	-1.4580 (0.002)***	-1.4571 (0.002)***	-1.3834 (0.004)***	-1.4061 (0.003)***	-1.4478 (0.003)***	-1.3274 (0.007)***	-1.3816 (0.004)***
CSR	0.0030 (0.074)*						
CSR*CASH2	0.0339 (0.1630)						
PCSR		0.0030 (0.085)*					
PCSR*CASH2		0.0350 (0.1810)					
NCSR			-0.0151 (0.1210)				
NCSR*CASH2			-0.1463 (0.2380)				

CG				0.0104			
				(0.043)**			
CG*CASH2				0.1441			
				(0.077)*			
CC					0.0070		
					(0.1240)		
CC*CASH2					0.1288		
					(0.06)*		
SP						-0.0051	
						(0.2300)	
SP*CASH2						-0.0435	
						(0.3880)	
EP							0.0141
							(0.003)***
EP*CASH2							0.1115
							(0.1860)
OBS	3,630	3,630	3,630	3,630	3,630	3,630	3,630
R-square	0.1377	0.1375	0.1371	0.1389	0.1383	0.1364	0.139

Note1: ***, **, and * represent significance levels of 1%, 5% and 10%. For all variable definitions, refer to Table 1 and Appendix 1. Variable*CASH2 is defined as the variable of CSR, PCSR, NCSR, CG, CC, SP and EP being interacted with CASH2.

Note2: The summary statistics is omitted due to the space limitations. Detail results are available from author upon request.

Table 2 CSR and cash value (Family firms)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
intercept	0.0630 (0.019)**	0.0603 (0.027)**	0.0807 (0.002)***	0.0672 (0.011)**	0.0618 (0.023)**	0.0714 (0.007)***	0.0678 (0.01)***
CSR	0.0045 (0.042)**						
CSR*	0.0612						
CASH2	(0.06)*						
PCSR		0.0048 (0.039)**					
PCSR*		0.0617					
CASH2		(0.083)*					
NCSR			-0.0157 (0.1740)				
NCSR*			-0.3004				
CASH2			(0.033)**				
CG				0.0098 (0.1360)			
CG*				0.2096			
CASH2				(0.027)**			
CC					0.0113 (0.089)*		
CC*					0.2101		
CASH2					(0.029)**		
SP						0.0088 (0.2830)	
SP*						-0.1684	
CASH2						(0.2210)	
EP							0.0144 (0.017)**
EP*							0.1950
CASH2							(0.046)**
OBS	2,379	2,379	2,379	2,379	2,379	2,379	2,379
R-square	0.1183	0.1178	0.1163	0.119	0.1188	0.1146	0.1192

Note: ***, **, and * represent significance levels of 1%, 5% and 10%. For all variable definitions, refer to Table 1 and Appendix 1. Variable*CASH2 is defined as the variable of CSR, PCSR, NCSR, CG, CC, SP and EP being interacted with CASH2.

Table 3 CSR and cash value (Non-family firms)

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
intercept	0.0182 (0.5150)	0.0192 (0.4960)	0.0219 (0.4300)	0.0131 (0.6310)	0.0173 (0.5370)	0.0214 (0.4260)	0.0116 (0.6670)
CSR	-0.0003 (0.9120)						
CSR*	-0.0140 (0.6250)						
CASH2							
PCSR		-0.0006 (0.8000)					
PCSR*		-0.0094 (0.7420)					
CASH2							
NCSR			-0.0124 (0.5070)				
NCSR*			0.2204 (0.3060)				
CASH2							
CG				0.0109 (0.1450)			
CG*				-0.0430 (0.7290)			
CASH2							
CC					0.0004 (0.9420)		
CC*					0.0149 (0.8500)		
CASH2							
SP						-0.0153 (0.007)***	
SP*						-0.0240 (0.6130)	
CASH2							
EP							0.0147 (0.044)**
EP*							-0.1431 (0.1850)
CASH2							
OBS	1,251	1,251	1,251	1,251	1,251	1,251	1,251
R-square	0.1978	0.1977	0.1989	0.1986	0.1977	0.2012	0.1997

Note: ***, **, and * represent significance levels of 1%, 5% and 10%. For all variable definitions, refer to Table 1 and Appendix 1. Variable*CASH2 is defined as the variable of CSR, PCSR, NCSR, CG, CC, SP and EP being interacted with CASH