



Cash holdings and corporate governance in family-controlled firms[☆]

Tsung-Han Kuan^a, Chu-Shiu Li^{a,*}, Shin-Herng Chu^b

^a Feng Chia University, Department of Economics, Taichung 40724, Taiwan

^b Feng Chia University, Department of Finance, Taichung 40724, Taiwan

ARTICLE INFO

Article history:

Accepted 27 July 2010

Available online 30 August 2010

Keywords:

Cash holdings

Family-controlled firms

Corporate governance

ABSTRACT

This study examines the association between corporate governance and cash policy within family-controlled firms. Family businesses are complex, because, in addition to dealing with common business requirements and opportunities, they must consider the needs and desires of the family owners. The results of this study show that the impact of corporate governance, with its separation of control rights and cash flow rights, director-ownership-in-pledge ratio and proportion of independent directors on cash policy, differs between family-controlled and nonfamily-controlled firms. Separation of seat control rights and cash flow rights, as well as chair duality, significantly affects the cash policy within different levels of cash holdings in firms.

© 2010 Elsevier Inc. All rights reserved.

1. Introduction

Corporate cash holding policies play an important role in a firm's financial policy. Empirical literature focuses a great deal of attention on the determinants of corporate cash holdings and the existence of an optimal level of cash holdings (Bates et al., 2006; Chen and Chuang, 2008; Harford et al., 2008; Kim et al., 1998; Opler et al., 1999; Ozkan and Ozkan, 2004; Pinkowitz et al., 2003). From the precautionary and transaction motive viewpoint, firms accumulate cash to meet their unanticipated contingencies if the costs of other financing resources are high (Han and Qiu, 2007; Opler et al., 1999). In contrast, from the agency theory, greater shareholder rights bring about lower cash holdings. This indicates that shareholders want to limit cash at the managers' discretion in the level of cash holdings (Dittmar et al., 2003; Jensen, 1986; Jensen and Meckling, 1976). Much of the literature regarding corporate governance focuses on the issue of motives for firms to hold cash; there is little research, however, regarding the association between cash holdings and corporate governance within family-controlled firms. Thus, this study focuses on whether the impact of corporate governance on cash holdings in family-controlled firms differs from that in nonfamily-controlled firms in Taiwan.

Family-controlled firms are a significant and common occurrence in many Asian countries, and Taiwan is no exception. In family-controlled firms, a family or its members own an amount of shares that exceeds the critical control level. This study determines this critical control level, which is the level of control necessary to gain

effective command of each firm according to the method proposed by Cubbin and Leech (1983). Yeh et al. (2001) find that among Taiwanese listed firms, those in which the average control by the family shareholders exceeds the critical control level are 76%. The conflict of interest between majority and minority shareholders within these family firms is high when the majority shareholder's level of control is large enough to influence a firm's decision-making process. Yeh et al. (2001) document family control and corporate governance in Taiwan; however, existing research places little emphasis on the impact of family control on corporate policies. Therefore, this study provides a unique examination of the influence of family control on corporate policy.

Family control is the central issue in mitigating conflicts of interest between managers and shareholders, due to the separation of ownership and control (Anderson et al., 2003; Claessens et al., 2000; Fama and Jensen, 1983; La Porta et al., 1999; La Porta et al., 2000). Family-controlled firms often concern themselves with family legacy, or passing the firm on to the next generation. However, Yeh et al. (2001) argue that the family-controlled shareholders may force the firm to adopt policies that fit their personal interests rather than those of the minority shareholders. Thus, family businesses are complex, because, in addition to dealing with common business requirements and opportunities, they must consider the needs and desires of the family owners (Ward, 1987). Only one paper (Ozkan and Ozkan, 2004) finds that firms with families as the ultimate controllers tend to hold more cash than nonfamily-controlled firms. However, the incentives for managers to hold cash in such firms remain unclear.

Using a sample of publicly listed companies in Taiwan from 1997 to 2008, this study shows that family-controlled firms with higher board independence hold more cash for their operating strategy, while nonfamily-controlled firms with higher board independence deposit less cash. Moreover, family-controlled firms with a higher

[☆] The authors thank Yenn-Ru Chen, Chwen-Chi Liu, Wen-Yen Hsu, Cheryl Robbins, Jennifer Sampson, and seminar participants at the 2009 SRA Japan 22nd Annual Meeting for their helpful comments and suggestions.

* Corresponding author.

E-mail address: cslif@fcu.edu.tw (C.-S. Li).

pledge rate commonly hold less cash, whereas the pledge rate shows no effect in nonfamily-controlled firms. The operating strategies differ for family-controlled and nonfamily-controlled firms at different levels of cash holdings. Board independence in family-controlled firms affects the cash policy in low cash holding firms, whereas its effect on high cash holding firms is insignificant.

2. Hypotheses

This study examines the role of corporate governance in making corporate cash holding decisions with a special focus on family-controlled firms. The presence of family controllers and their involvement in ownership and management makes it interesting to explore the factors that affect the level of cash holdings. Following Harford et al. (2008), this study uses the flexibility, spending and shareholder power hypotheses to study factors that can explain the cash reserves in family-controlled firms.

2.1. The flexibility hypothesis

Traditional finance theory asserts that in the long run, the value of a company relies mostly on its capital investment projects. Financial flexibility implies that managers have sufficient financial slack so that financing is quickly available for good investments. That is, self-interested managers prefer to hold large cash reserves to help cope with unexpected adversity, during which access to capital markets is costly. They stockpile excess generated cash flow instead of investing it all. The disadvantage of having financial flexibility is that when the shareholders' control of managers is less effective, managers tend to hold excess cash reserves since they have a larger base of assets in place to exploit (Jensen, 1986). Family-controlled firms typically concern themselves with the family legacy, and minority shareholders monitor them less. Therefore, managers in family-controlled firms have more incentive to reserve a large cash flow, which is not only for future investment opportunities, but is also for flexibility in capital market discipline. The flexibility hypothesis suggests a negative relationship between effective corporate governance and cash holdings within family-controlled firms.

2.2. The spending hypothesis

Concentrated ownership structure creates incentive for large shareholders, who gain nearly full control of the company, to use the firm's resources to generate private benefits and exclude minority shareholders from sharing these benefits (Shleifer and Vishny, 1997). The agency theory argues that self-interested managers prefer to spend excess generated cash flows, rather than keeping cash within the firms. The characteristics of family-controlled firms – in particular, the pyramid and cross-holding ownership structure – allow the family controller to expropriate the firm's resources in ways that serves his/her own private interests at the expense of other shareholders (Cheung et al., 2006; Fan and Wong, 2002; Jensen, 1986). Therefore, the spending hypothesis predicts a positive relation between effective corporate governance and cash holdings in family-controlled firms.

2.3. The shareholder power hypothesis

Due to the friction in capital markets, such as information asymmetry and flotation costs, managers prefer internal equity capital, rather than external funds, when making financial decisions for valuable investment projects. The corporate dilemma is how to determine the tradeoff between the managers' cash holdings and the potential for underinvestment due to information asymmetry between managers and outside shareholders (Myers and Majluf, 1984). Firms with shareholders who have more effective control rights tend to allow managers to build up more cash reserves in order to prevent underinvestment. Family-

controlled firms are better at aligning the interests of owners and managers, because they are either in the same family group, or they have a kin relationship (Gomez-Mejia et al., 2001; Jaskiewicz and Klein, 2007; Martínez et al., 2007). In a family-controlled firm, the controlling shareholders who are more attentive to the firm's future allow managers to access more cash flow, which prevents underinvestment that may adversely affect the firm value. The contention of the shareholder power hypothesis is that family-controlled firms more effectively control corporate managers and allow them to stockpile more cash reserves; that is, there is a positive relationship between effective corporate governance and cash holdings in family-controlled firms.

3. Empirical design and variable description

3.1. Research method and variable description

This study relates effective corporate governance to the cash policy in family-controlled firms, and explores the possible decision-making factors that can explain the cash policy. Since the determination of cash holdings and corporate governance are simultaneous, modeling the relationship between the two is problematic if no proper treatment is available for the endogeneity which occurs. Following Ozkan and Ozkan (2004), this study employs the generalized method of moment (GMM) estimation to control the endogenous problem while exploring the relationship between corporate governance and cash reserves in family-controlled firms. The dependent variable, cash holdings, in the GMM model is the ratio of cash and cash equivalents to the net assets of cash, which is similar to the definition of Opler et al. (1999) and Harford et al. (2008).

Independent variables measure the efficacy of corporate governance in family-controlled firms and include family control, separation of control rights, ownership structure and board structure. The following discusses and defines the independent variables within each classification.

3.1.1. Measuring family control

When the ultimate controllers' ownership accumulates beyond a critical level, they have the strong controlling power to affect corporate policy. Claessens et al. (2000), La Porta et al. (1999) and Mok et al. (1992) analyze the control patterns of firms by defining ultimate control as based on 10% and 20% ownership cut-offs. This study classifies a firm as a family-controlled firm if the sum of direct and indirect ownership by the largest family shareholder exceeds the firm's critical control level. Depending on the diversity of the ownership structure, the sample firms may have a wide range of critical control levels. Following the definition of Yeh et al. (2001), this study determines that the critical control level is the level of control necessary to gain effective control of each firm.

Chrisman et al. (2007) and Chrisman et al. (2004) suggest that family businesses tend to monitor and provide incentives to family managers, and thus their performance is better. In Taiwan, tighter control over the boards and higher separation of control rights and cash flow rights lead to a more severe expropriation of wealth from minority shareholders. This agency problem implies higher financing costs for family-controlled firms when raising capital in the market. Therefore, family-controlled firms frequently hold larger cash reserves than nonfamily-controlled firms.

3.1.2. Separation of control rights

Shleifer and Vishny (1997) argue that when shareholders' ownership goes beyond a certain point, the large shareholders gain dominant control and have incentive to expropriate wealth from minority shareholders. Wealth expropriation incentive becomes stronger as managers' cash flow rights deviate from their control rights. Studies by Claessens et al. (2002), and La Porta et al. (1999) show that the separation of control rights and cash flow rights provides the controlling shareholders with both the ability and incentive to expropriate wealth

from the firm. In general, larger voting rights entrench the controlling shareholders and give them the capacity to expropriate wealth from the firm, while lower cash flow rights reduce the controlling shareholders' share of the firms' losses from the expropriation activities. In [Bebchuk et al. \(1999\)](#) model, the agency costs that result from the firm's inefficient choices increase as the degree of separation between voting rights and cash flow rights increases.

Prior studies by [Chong \(2009\)](#), [Claessens et al. \(2002\)](#) and [Fan and Wong \(2002\)](#) measure the control rights of large shareholders by focusing on firms with differential voting rights. Using pyramid shareholdings to appoint relatives or close friends as directors and supervisors is a particular phenomenon in Taiwanese businesses; therefore, this study uses voting rights and board composition to indicate proxy variables for control rights. Voting rights are the largest shareholder's direct and indirect share ownership, and board composition is the number of board seats held by a controller out of the total number of board seats. Relative to control rights, cash flow rights represent the controlling shareholders' share of the firms' losses or profits from their decision-making activities.

This analysis uses the separation of control rights and cash flow rights to gauge the severity of a firm's agency costs: the wider the separation between voting rights and cash flow rights, the more severe the agency problem. Family-controlled firms are more likely to encounter agency problems; thus, this study expects family-controlled firms to hold more cash if the separation between their control rights and their cash flow rights is larger. Two indexes measure the separation of control rights and cash flow rights: Separation1 is the difference between voting rights and cash flow rights and Separation2 is the difference between seat control rights and cash flow rights.

3.1.3. Ownership structure

Another way to measure the agency problem that arises as a result of ownership concentration is to use institutional shareholdings. [Jensen and Meckling \(1976\)](#) suggest that the separation of ownership and control allows managers to pursue self-interests that can directly expropriate wealth from existing stakeholders. Therefore, the presence of a large shareholder, or blockholder, plays an important role in resolving (or exacerbating) some of the firm's agency problems. [Shleifer and Vishny \(1986\)](#) suggest that blockholders perform a monitoring function and reduce the extent of managerial opportunism. Overall, the use of ownership concentration in our analysis provides a gauge for managerial opportunism.

Institution Ownership is the ratio of shares that institutions own in the firm divided by the total number of outstanding shares. Pledge is the percentage of ownership-in-pledge of directors and supervisors' shareholdings, and represents the proportion of shareholdings that directors use as collateral for their personal borrowing. If the control rights of controlling families are higher than their shares in pledge for personal borrowing, they face a strong incentive to make business decisions for private benefit. [Chen and Ho \(2009\)](#) show that the impact of the proportion of director-ownership-in-pledge on firm policies, such as dividend payment and debt financing, differs between family-controlled and nonfamily-controlled firms.

3.1.4. Board structure

Board structure also plays an important role in corporate cash holdings. On the one hand, [Ozkan and Ozkan \(2004\)](#) suggest that the independence of outside directors can reduce information asymmetry between firms and investors, thus increasing a firm's ability to raise funds externally. On the other hand, [Brenes et al. \(2011\)](#) and [Desai et al. \(2005\)](#) suggest that outside board monitoring can provide better shareholder protection and improve family business performance. [Opler et al. \(1999\)](#) financial hierarchy model suggests a positive relation between board independence and managerial cash holdings.

In Taiwan, controlling shareholders actively participate in the board meetings, and the chairman of the board often assumes the role

of general manager. This study utilizes Board Size, Board Independence, and Chair Duality as variables of the firm's board structures.

Board Size is the number of directors and Board Independence is the ratio of independent directors and supervisors to the total number of directors and supervisors. Chair Duality equals one if the chairman of the board is also the general manager; otherwise, it equals zero.

3.1.5. Control variables

Given that cash holdings are firm-specific, this study includes control variables to control firm-specific effects. Following [Opler et al. \(1999\)](#), control variables in this study include firm size, leverage, Market-To-Book ratio, the ratio of cash flow to total assets, the ratio of net working capital to total assets, the ratio of R&D to sales, the ratio of capital expenditures to assets, dividend dummy, and rating indicator. The Taiwan Credit Risk Index (TCRI) in the Corporate Governance database of the Taiwan Economic Journal (TEJ) is the Rating Indicator, which measures the credit risk of a firm. This index takes on values from one to ten, where one indicates the lowest credit risk level.

Size is the logarithm of total assets and leverage is the ratio of total debts to total assets. The proxy of growth opportunities, or the Market-To-Book ratio, is the market value of equity to its book value. The Cash Flow ratio is the ratio of the operating income (loss) to the non-cash assets. The proxy for liquidity, or the net Working Capital ratio, is the ratio of net working capital (current assets minus current liabilities) to the non-cash assets. R&D is the ratio of research and development expenditures to sales. The Capital Expenditure ratio is the value of capital expenditures to non-cash assets, where capital expenditures are the sum of changes in fixed assets and depreciation. Finally, the Dividend equals one if firms pay cash dividends in a given year, and equals zero, otherwise.

3.2. Data and sample selection

This study uses Taiwan's corporate governance data in the TEJ database from 1997 to 2008. Following [Harford et al. \(2008\)](#) and [Opler et al. \(1999\)](#), the analysis excludes financial services industries (ISIC codes 2801–2899, 5801–5899, 6001–6099, 6801–6899 and 8701–8799). The final sample consists of 1164 firms over the sample period; that is, a total of 8330 firm-year observations.

3.3. Descriptive statistics

[Table 1](#) presents summary statistics for family-controlled and nonfamily-controlled subsamples. The nonparametric Wilcoxon Test examines the mean difference in cash holdings between the two subsamples. In [Table 1](#), cash holdings have a mean of 19% and a median of 11% out of the total net assets in nonfamily-controlled firms. The average cash holdings in family-controlled firms are about 15% of net assets. The average cash holdings of family-controlled firms are significantly lower than those of nonfamily-controlled firms.

The average Separation1 is 5% in nonfamily-controlled firms, which is significantly lower than that in family-controlled firms (6%). The average Separation2 is 37% in nonfamily-controlled firms, which is higher, yet still insignificant, in comparison with that of the family-controlled firms (35%).

For publicly traded companies in Taiwan, the average institutional shareholdings are 32% for nonfamily-controlled firms, which is significantly lower than those of family-controlled firms (35%). The percentage of ownership-in-pledge to directors and supervisors' shareholdings is 7% in nonfamily-controlled firms. The Pledge ratio of family-controlled firms is 11%, which is significantly higher than that of nonfamily-controlled firms. Directors' or supervisors' shareholdings in pledge for loans and credits are more common in the family-controlled firms than in nonfamily-controlled firms. Comparing the board structures between the two subsamples, family-controlled firms have a smaller board size and less independent board.

Table 1
Descriptive statistics: family-controlled firms versus nonfamily-controlled firms.

	Family-controlled firms n = 6891			Nonfamily-controlled firms n = 1439			p-value of Wilcoxon test (Family–Nonfamily > 0)
	Mean	Median	Std. Dev.	Mean	Median	Std. Dev.	
<i>Dependent variables</i>							
Cash Holdings	0.15	0.08	0.24	0.19	0.11	0.33	<0.01
<i>Governance variables</i>							
Separation1	0.06	0.01	0.10	0.05	0.02	0.08	<0.01
Separation2	0.35	0.34	0.27	0.37	0.35	0.21	0.08
Institution Ownership	0.35	0.32	0.23	0.32	0.30	0.20	<0.01
Pledge	0.11	0.00	0.21	0.07	0.00	0.15	<0.01
Board Size	6.96	7.00	2.80	7.12	7.00	2.72	<0.01
Board Independence	0.10	0.00	0.15	0.12	0.00	0.15	<0.01
Chair Duality	0.30	0.00	0.46	0.31	0.00	0.46	0.58
<i>Control variables</i>							
Size	15.41	15.23	1.38	14.97	14.84	1.25	<0.01
Leverage	0.44	0.45	0.17	0.41	0.41	0.17	<0.01
Market-to-Book	1.56	1.16	1.45	2.10	1.62	2.09	<0.01
Cash Flow	0.08	0.07	0.15	0.08	0.07	0.18	0.49
Working Capital	0.12	0.11	0.20	0.16	0.15	0.22	<0.01
R&D	0.03	0.01	0.10	0.05	0.02	0.13	<0.01
Capital Expenditure	0.05	0.04	0.11	0.07	0.04	0.11	<0.01
Dividend	0.62	1.00	0.48	0.51	1.00	0.50	<0.01
Rating Indicator	5.66	6.00	1.78	5.61	6.00	1.82	0.69

4. Empirical analyses

4.1. The impact of corporate governance on cash holdings

The presence of family controllers and their involvement in both ownership and management noticeably impact corporate cash holding decisions. Model (2-1) and model (2-2) examine the effects of ownership structure and board structure on corporate cash policy; model (2-3) emphasizes the effects of separation of control rights and cash flow rights on corporate cash policy; model (2-4) takes into account the effects of all corporate governance variables on corporate cash policy, including separation of control rights, ownership structure and board structure.

Table 2 analyzes the effect of corporate governance variables on cash holdings. Family dummy equals one if the percentage of shares

owned by family members exceeds the critical level; otherwise, it equals zero. The significant and positive effects of Family dummy on the cash holdings are consistent with Ozkan and Ozkan (2004); family-controlled firms hold more cash than nonfamily-controlled firms.

The significantly positive effects of Separation1 and Chair Duality on cash holdings and the negative coefficient of Institution Ownership are consistent with the flexibility hypothesis. The significantly negative effects of Separation2 and Pledge on cash holdings are consistent with the spending and shareholder power hypotheses. This empirical evidence is consistent with that of Opler et al. (1999), suggesting that high managerial control rights increase the probability that managers will pursue private interests at the expense of shareholders.

Table 2
The effects of corporate governance on cash holdings.

Dependent variable: Cash Holdings	Model (2-1)	Model (2-2)	Model (2-3)	Model (2-4)
Cash Holdings _(t-1)	0.41 (36.18)***	0.41 (36.22)***	0.41 (36.26)***	0.41 (36.14)***
Family dummy	0.02 (2.86)***	0.02 (2.84)***	0.02 (2.87)***	0.02 (2.83)***
<i>Governance variables</i>				
Separation1 _(t-1)	0.11 (2.30)**	0.10 (2.21)**	0.10 (2.11)**	0.11 (2.40)***
Separation2 _(t-1)	-0.04 (-2.85)***	-0.04 (-2.74)***	-0.04 (-2.84)***	-0.04 (-2.77)***
Institution Ownership _(t-1)	-0.02 (-1.48)*			-0.02 (-1.47)*
Pledge _(t-1)	-0.03 (-2.41)***			-0.03 (-2.41)***
Board Size _(t-1)		0.00 (-1.16)		0.00 (-1.19)
Board Independence _(t-1)		0.02 (1.15)		0.02 (1.11)
Chair Duality _(t-1)		0.01 (2.67)***		0.01 (2.67)***
<i>Control variables</i>				
Size	0.04 (8.03)***	0.03 (7.43)***	0.03 (7.70)***	0.04 (7.77)***
Leverage	-0.39 (-18.3)***	-0.40 (-18.39)***	-0.40 (-18.34)***	-0.40 (-18.35)***
Market-to-Book	0.01 (9.94)***	0.01 (10.06)***	0.01 (10.07)***	0.01 (9.94)***
Cash Flow	0.35 (26.83)***	0.35 (26.80)***	0.35 (26.83)***	0.35 (26.80)***
Working Capital	-0.48 (-32.3)***	-0.47 (-32.23)***	-0.48 (-32.26)***	-0.48 (-32.28)***
Dividend	0.35 (6.09)***	0.33 (5.77)***	0.35 (5.99)***	0.34 (5.86)***
R&D	0.06 (2.61)***	0.06 (2.67)***	0.06 (2.61)***	0.06 (2.67)***
Capital Expenditure	-0.25 (-14.68)***	-0.24 (-14.45)***	-0.24 (-14.54)***	-0.24 (-14.59)***
Rating Indicator	-0.01 (-2.9)***	-0.01 (-3.33)***	-0.01 (-3.03)***	-0.01 (-3.2)***
Constant	-0.25 (-3.54)***	-0.21 (-2.95)***	-0.22 (-3.25)***	-0.23 (-3.23)***
Observations	8330	8330	8330	8330
Adjusted R ²	0.48	0.49	0.48	0.49

Notes: 1. t-statistics are in parentheses. 2. *p < .10, **p < .05, ***p < .01.

Table 3

The effects of family control on the relation between corporate governance and cash holdings.

Dependent variable: Cash Holdings	Model (3-1)	Model (3-2)	Model (3-3)	Model (3-4)
Cash Holdings _(t-1)	0.41 (36.18)***	0.41 (36.14)***	0.41 (36.24)***	0.41 (36.05)***
Family dummy	0.02** (2.03)	0.02 (1.10)	0.01 (1.14)	0.01 (0.24)
<i>Governance variables</i>				
Separation1 _(t-1)	0.11 (2.24)**	0.10 (2.23)**	-0.04 (-0.51)	-0.01 (-0.12)
Separation2 _(t-1)	-0.04 (-2.84)***	-0.04 (-2.77)***	-0.03 (-1.12)	-0.07 (-2.41)***
Institution Ownership _(t-1)	-0.02 (-0.87)			-0.01 (-0.39)
Pledge _(t-1)	0.02 (0.65)			0.01 (0.30)
Board Size _(t-1)		0.00 (-0.34)		0.00 (-0.36)
Board Independence _(t-1)		-0.09 (-2.52)***		-0.10 (-2.72)***
Chair Duality _(t-1)		0.02 (1.99)**		0.02x (1.87)***
<i>Interaction terms</i>				
Family*Separation1			0.16 (2.01)**	0.15 (1.71)**
Family*Separation2			-0.01 (-0.31)	0.04 (1.26)
Family*Institution Ownership	0.00 (0.05)			-0.01 (-0.45)
Family*Pledge	-0.06 (-1.89)**			-0.04 (-1.44)*
Family*Board Size		0.00 (-0.69)		0.00 (-0.65)
Family*Board Independence		0.14 (3.80)***		0.15 (3.85)***
Family*Chair Duality		-0.01 (-0.69)		-0.01 (-0.55)
<i>Control variables</i>				
Size	0.04 (7.98)***	0.04 (7.56)***	0.03 (7.65)***	0.04 (7.82)***
Leverage	-0.39 (-18.32)***	-0.40 (-18.5)***	-0.39 (-18.33)***	-0.40 (-18.45)***
Market-to-Book	0.01 (9.98)***	0.01 (10.05)***	0.01 (10.12)***	0.01 (10.03)***
Cash Flow	0.35 (26.78)***	0.35 (26.85)***	0.35 (26.76)***	0.35 (26.75)***
Working Capital	-0.48 (-32.28)***	-0.48 (-32.27)***	-0.48 (-32.23)***	-0.48 (-32.29)***
Dividend	0.35 (6.10)***	0.34 (5.88)***	0.34 (5.94)***	0.35 (5.92)***
R&D	0.06 (2.58)***	0.06 (2.67)***	0.06 (2.61)***	0.06 (2.67)***
Capital Expenditure	-0.24 (-14.45)***	-0.24 (-14.39)***	-0.24 (-14.51)***	-0.24 (-14.38)***
Rating Indicator	-0.01 (-2.86)***	-0.01 (-3.18)***	-0.01 (-3.07)***	-0.01 (-3.07)***
Constant	-0.25 (-3.53)***	-0.22 (-3.03)***	-0.22 (-3.12)***	-0.22 (-3.05)***
Observations	8330	8330	8330	8330
Adjusted R ²	0.48	0.48	0.47	0.49

Notes: 1. t-statistics are in parentheses. 2. *p<.10, **p<.05, ***p<.01.

4.2. The effect of family-controlled firms

The conflict of interest between majority and minority shareholders in family firms is greater when the majority shareholder's level of control is high enough to influence a firm's decision-making process. This study uses interactions between Family dummy and

other governance variables to examine the impact of family control on the relationship between corporate governance and cash holdings. Table 3 lists the empirical results of the four model specifications.

The coefficient of the interaction variable, Separation1 and Family dummy is significantly positive. This finding supports the flexibility hypothesis, which indicates that firms with a high separation of voting

Table 4-1

The effect of corporate governance on cash holdings: family-controlled firms.

Dependent variable: Cash Holdings	Model (4F-1)	Model (4F-2)	Model (4F-3)	Model (4F-4)
Cash Holdings _(t-1)	0.35 (27.15)***	0.35 (27.16)***	0.35 (27.16)***	0.35 (27.14)***
<i>Governance variables</i>				
Separation1 _(t-1)	0.08 (1.65)**	0.07 (1.53)*	0.07 (1.47)*	0.09 (1.70)**
Separation2 _(t-1)	-0.04 (-2.86)***	-0.04 (-2.67)***	-0.04 (-2.85)***	-0.04 (-2.69)***
Institution Ownership _(t-1)	-0.02 (-1.27)			-0.02 (-1.23)
Pledge _(t-1)	-0.03 (-2.22)**			-0.03 (-2.22)**
Board Size _(t-1)		0.00 (-0.81)		0.00 (-0.81)
Board Independence _(t-1)		0.03 (1.44)*		0.03 (1.38)*
Chair Duality _(t-1)		0.01 (1.76)**		0.01 (1.77)**
<i>Control variables</i>				
Size	0.04 (7.66)***	0.04 (7.02)***	0.04 (7.41)***	0.04 (7.27)***
Leverage	-0.38 (-16.27)***	-0.38 (-16.28)***	-0.38 (-16.28)***	-0.38 (-16.27)***
Market-to-Book	0.01 (9.22)***	0.01 (9.32)***	0.01 (9.32)***	0.01 (9.23)***
Cash Flow	0.26 (18.48)***	0.26 (18.44)***	0.26 (18.49)***	0.26 (18.44)***
Working Capital	-0.46 (-29.86)***	-0.46 (-29.78)***	-0.46 (-29.8)***	-0.46 (-29.83)***
Dividend	0.69 (10.82)***	0.67 (10.48)***	0.69 (10.76)***	0.68 (10.54)***
R&D	0.05 (1.90)**	0.05 (1.96)**	0.05 (1.90)**	0.05 (1.96)**
Capital Expenditure	-0.14 (-6.69)***	-0.13 (-6.45)***	-0.13 (-6.54)***	-0.14 (-6.61)***
Rating Indicator	0.00 (-0.74)	0.00 (-1.12)	0.00 (-0.86)	0.00 (-0.99)
Constant	-0.29 (-3.82)***	-0.25 (-3.21)***	-0.27 (-3.6)***	-0.27 (-3.43)***
Observations	6891	6891	6891	6891
Adjusted R ²	0.48	0.49	0.47	0.49

Notes: 1. t-statistics are in parentheses. 2. *p<.10, **p<.05, ***p<.01.

Table 4-2
The effect of corporate governance on cash holdings: nonfamily-controlled firms.

Dependent variable: Cash Holdings	Model (4NF-1)	Model (4NF-2)	Model (4NF-3)	Model (4NF-4)
Cash Holdings _(t-1)	0.21 (7.23)***	0.21 (7.23)***	0.21 (7.27)***	0.21 (7.18)***
<i>Governance variables</i>				
Separation1 _(t-1)	0.05 (0.27)	0.06 (0.35)	0.04 (0.25)	0.07 (0.38)
Separation2 _(t-1)	-0.02 (-0.33)	-0.03 (-0.53)	-0.02 (-0.37)	-0.02 (-0.48)
Institution Ownership _(t-1)	0.03 (0.61)			0.03 (0.64)
Pledge _(t-1)	-0.08 (-1.72)**			-0.08 (-1.72)**
Board Size _(t-1)		0.00 (-0.59)		0.00 (-0.62)
Board Independence _(t-1)		-0.04 (-0.76)		-0.04 (-0.74)
Chair Duality _(t-1)		0.02 (1.63)*		0.02 (1.65)**
<i>Control variables</i>				
Size	0.02 (1.18)	0.02 (1.31)*	0.01 (1.03)	0.02 (1.46)*
Leverage	-0.42 (-7.38)***	-0.44 (-7.53)***	-0.42 (-7.37)***	-0.44 (-7.54)***
Market-to-Book	0.01 (3.65)***	0.01 (3.70)***	0.01 (3.70)***	0.01 (3.65)***
Cash Flow	0.50 (13.00)***	0.50 (13.00)***	0.50 (12.98)***	0.50 (13.03)***
Working Capital	-0.25 (-5.96)***	-0.25 (-5.93)***	-0.25 (-5.85)***	-0.26 (-6.04)***
Dividend	0.05 (0.41)	0.08 (0.61)	0.07 (0.53)	0.06 (0.49)
R&D	0.43 (5.07)**	0.43 (5.03)***	0.42 (4.98)***	0.44 (5.13)***
Capital Expenditure	-0.38 (-10.85)***	-0.37 (-10.73)***	-0.37 (-10.7)***	-0.38 (-10.88)***
Rating Indicator	-0.01 (-1.55)*	-0.01 (-1.92)**	-0.01 (-1.87)**	-0.01 (-1.6)*
Constant	0.13 (0.65)	0.13 (0.64)	0.17 (0.86)	0.09 (0.43)
Observations	1439	1439	1439	1439
Adjusted R ²	0.48	0.47	0.48	0.47

Notes: 1. t-statistics are in parentheses. 2. *p<.10, **p<.05, ***p<.01.

rights and cash flow rights hold more cash to avoid the higher costs of external financing.

The interaction variables Board Independence and Family dummy are significantly positive in relation to cash holdings. This finding illustrates that family-controlled firms with higher board independence are more likely to increase cash reserves for their operating activities. Board independence provides better shareholder protection in family-controlled firms, thus reducing the agency costs of cash holdings. Consistent with the shareholder power hypothesis, share-

holders of family-controlled firms are more willing to accept higher cash reserves.

The coefficient of the interaction between Pledge and Family dummy is significantly negative. This suggests that family-controlled firms with a higher director-ownership-in-pledge ratio tend to hold less cash reserves, which is consistent with the spending hypothesis. As the percentage of ownership-in-pledge for personal borrowing increases, the probability that managers pursue private interests at the expense of shareholders also increases.

Table 5
The level of cash holding and corporate governance.

Dependent variable: Cash Holdings	Low cash holdings (25th percentile)		High cash holdings (75th percentile)	
	Family-controlled firms	Nonfamily-controlled firms	Family-controlled firms	Nonfamily-controlled firms
	Model (LF)	Model (LNF)	Model (HF)	Model (HNF)
Cash Holdings _(t-1)	0.01 (2.89)***	0.01 (0.59)	0.18 (6.92)***	0.16 (2.88)***
<i>Governance variables</i>				
Separation1 _(t-1)	0.00 (-0.02)	0.05 (1.67)**	0.19 (0.95)	0.47 (0.82)
Separation2 _(t-1)	0.00 (2.31)**	0.01 (1.03)	-0.16 (-2.51)***	0.06 (0.32)
Institution Ownership _(t-1)	0.00 (0.39)	-0.01 (-1.81)**	-0.01 (-0.23)	-0.01 (-0.1)
Pledge _(t-1)	-0.01 (-3.48)***	0.00 (-0.65)	-0.08 (-1.09)	-0.13 (-0.55)
Board Size _(t-1)	0.00 (-2.34)**	0.00 (-2.3)**	-0.01 (-1.92)**	0.03 (1.38)
Board Independence _(t-1)	0.01 (1.85)**	0.01 (0.44)	0.00 (0.06)	-0.43 (-2.92)***
Chair Duality _(t-1)	0.00 (-0.07)	0.00 (-1.52)*	0.07 (3.42)***	0.13 (2.57)***
<i>Control variables</i>				
Size	0.00 (5.22)***	0.00 (1.26)	0.02 (0.96)	0.02 (0.33)
Leverage	-0.01 (-2.66)***	-0.03 (-3.17)***	-0.58 (-6.56)***	-0.50 (-2.77)***
Market-to-Book	0.00 (2.12)**	0.00 (-0.08)	0.03 (6.29)***	0.01 (0.65)
Cash Flow	0.01 (3.31)***	0.03 (3.37)***	0.38 (9.06)***	0.62 (6.31)***
Working Capital	0.00 (-0.2)	-0.01 (-1.03)	-0.87 (-20.55)***	-0.55 (-4.14)***
Dividend	0.02 (1.75)**	0.06 (0.73)	0.83 (5.22)***	0.01 (0.06)
R&D	-0.01 (-1.27)*	0.08 (0.95)	0.02 (0.27)	0.74 (1.95)**
Capital Expenditure	0.00 (1.12)	0.01 (1.08)	-0.29 (-3.73)***	-0.61 (-7.17)***
Rating Indicator	0.00 (2.94)***	0.00 (-2.19)**	0.00 (-0.19)	0.00 (0.23)
Constant	-0.04 (-3.67)***	0.01 (0.31)	0.36 (1.13)	0.11 (0.16)
Observations	1723	360	1722	359
Adjusted R ²	0.23	0.18	0.54	0.36

Notes: 1. t-statistics are in parentheses. 2. *p<.10, **p<.05, ***p<.01.

4.3. Family-controlled firms versus nonfamily-controlled firms

To clearly identify the effect of corporate governance on cash holdings in family-controlled and nonfamily-controlled firms, this study performs GMM regressions for the two types of firms. Tables 4-1 and 4-2 illustrate the regression results for family-controlled firms and nonfamily-controlled firms, respectively. Models (4F-1) to (4F-4) are regressions for family-controlled firms, and models (4NF-1) to (4NF-4) are regressions for nonfamily-controlled firms. The findings in Tables 4-1 and 4-2 are consistent with those in Table 3 and demonstrate that the effect of corporate governance on cash holdings in the two types of firms is similar.

Separation1, Separation2 and Board Independence affect cash holdings only in family-controlled firms. The net effects of Board Independence on family-controlled firm's cash holdings are significantly positive. The coefficient of Pledge is consistently negative, while the coefficient of Chair Duality is significant and positive in both family-controlled and nonfamily-controlled firms. These results are consistent with the spending hypothesis. Owner/manager's pledging activities and chair duality enhance the agency problem and result in self-interested behavior and a spending of excess cash flow, thus decreasing cash holdings.

4.4. Effects of corporate governance on cash holding subsamples

The operating strategy and financing demands may be different for firms with different levels of cash holdings. This study further examines the effects of governance on cash holdings in firms within the low cash holdings subsample (lower than the 25 percentile), and within the high cash holdings subsample (greater than the 75 percentile). Table 5 presents the empirical results. Models (LF) and (HF) represent low cash holdings and high cash holdings in family-controlled firms, respectively, while models (LNF) and (HNF) represent the two subsamples within nonfamily-controlled firms.

Table 5 shows that within family-controlled firms, the coefficient of Separation2 is positive for low cash holding firms, but negative for high cash holding firms. This finding suggests that a higher separation of seat control rights and cash flow rights makes low cash holding family-controlled firms hold more cash, and is thus consistent with the flexibility hypothesis. In agreement with the spending hypothesis, family-controlled firms with high cash holdings tend to hold less cash when the separation of seat control rights and cash flow rights is higher.

Additionally, the significant effects of Pledge and Board Independence on cash holdings in family-controlled firms only appear in the

Table 6

The effect of family control on the relation between corporate governance and cash holdings-control for the potential endogeneity.

Panel 6A. Probit regression. Dependent variable: Family dummy				
Size				0.82 (42.05)***
Size Square				-0.02 (2.85)***
Stock Return Volatility				0.00 (0.69)
Intercept				-6.66 (5.73)***
Pseudo R2				0.02
Panel 6B. Regression control for the potential endogeneity problem.				
Dependent variable: Cash Holdings	Model (6-1)	Model (6-2)	Model (6-3)	Model (6-4)
Cash Holdings _(t-1)	0.41 (36.18)***	0.41 (36.14)***	0.41 (36.24)***	0.41 (36.05)***
Family dummy	0.02 (2.03)**	0.02 (1.10)	0.01 (1.14)	0.01 (0.24)
<i>Governance variables</i>				
Separation1 _(t-1)	0.11 (2.24)**	0.10 (2.23)**	-0.04 (-0.51)	0.00 (-0.12)
Separation2 _(t-1)	-0.04 (-2.84)***	-0.04 (-2.77)***	-0.03 (-1.12)	-0.07 (-2.41)**
Institution Ownership _(t-1)	-0.02 (-0.87)			-0.01 (-0.39)
Pledge _(t-1)	0.02 (0.65)			0.01 (0.30)
Board Size _(t-1)		0.00 (-0.34)		0.00 (-0.36)
Board Independence _(t-1)		-0.09 (-2.52)**		-0.10 (-2.72)***
Chair Duality _(t-1)		0.02 (1.99)**		0.02 (1.87)**
<i>Interaction terms</i>				
Family*Separation1			0.16 (2.01)*	0.14 (1.71)
Family*Separation2			-0.01 (-0.31)	0.04 (1.26)
Family*Institution Ownership				-0.01 (-0.45)
Family*Pledge	-0.06 (-1.89)**			-0.05 (-1.44)*
Family*Board Size		0.00 (-0.69)		0.00 (-0.65)
Family*Board Independence		0.14 (3.80)***		0.15 (3.85)***
Family*Chair Duality		-0.01 (-0.69)		-0.01 (-0.55)
<i>Control variables</i>				
Size	0.04 (7.98)***	0.03 (7.56)***	0.03 (7.65)***	0.03 (7.82)***
Leverage	-0.39 (-18.32)***	-0.39 (-18.5)***	-0.39 (-18.33)***	-0.39 (-18.45)***
Market-to-Book	0.01 (9.98)***	0.01 (10.05)***	0.01 (10.12)***	0.01 (10.03)***
Cash Flow	0.35 (26.78)***	0.35 (26.85)***	0.35 (26.76)***	0.35 (26.75)***
Working Capital	-0.48 (-32.28)***	-0.48 (-32.27)***	-0.48 (-32.23)***	-0.48 (-32.29)***
Dividend	0.35 (6.10)***	0.34 (5.88)***	0.34 (5.94)***	0.34 (5.92)***
R&D	0.06 (2.58)**	0.06 (2.67)**	0.06 (2.61)**	0.06 (2.67)**
Capital Expenditure	-0.25 (-14.45)***	-0.24 (-14.39)***	-0.25 (-14.51)***	-0.24 (-14.38)***
Rating Indicator	-0.01 (-2.86)***	-0.01 (-3.18)***	-0.01 (-3.07)***	-0.01 (-3.07)***
Lamda	0.00 (0.08)	-0.01 (0.09)	0.01 (0.06)	-0.02 (0.07)
Constant	-0.24 (-3.53)	-0.19 (-3.03)	-0.21 (-3.12)	-0.19 (-3.05)
Observations	8330	8330	8330	8330
Adjusted R ²	0.48	0.49	0.48	0.49

Notes: 1. t-statistics are in parentheses. 2. *p<.10, **p<.05, ***p<.01.

low cash holding subsample, and not in the high cash holding subsample. Thus, the spending effect only appears in low cash holding family-controlled firms. The positive effect of Chair Duality in family-controlled firms is significant in high cash holding firms, but is not significant in low cash holding firms. This finding suggests that the flexibility hypothesis only holds for high cash holding family-controlled firms.

In contrast, within nonfamily-controlled firms, the empirical results of Model (LNF) and Model (HNF) find that the effects of Separation1, Institution Ownership, Board Size and Chair Duality on the cash policy of nonfamily-controlled firms only exist in low cash holding firms; the significantly negative effect of Board Independence on nonfamily-controlled firms, however, only exists in high cash holding firms.

4.5. Endogeneity

Family ownership can be an endogenous choice made by a firm, and ownership structure is a function of firm size and risk (Anderson and Reeb, 2003; Demsetz and Lehn, 1985). Thus, in order to control the endogeneity problem, this study employs the Heckman two-stage estimation. In the first stage, this study estimates a probit regression to model the structure of a family-controlled company by using the natural log of total assets (Size), the square of the natural log of total assets (Size Square), and the yearly Stock Return Volatility. Table 6A shows the probit regression. In the second stage, this study estimates the regressions by obtaining Lambda from the probit estimates and utilizing it as an additional control variable. The empirical results appear in Table 6B. The estimates from the two-stage least-squares regressions are consistent with prior empirical results, which suggest that the effects of corporate governance on cash holdings differ between family-controlled firms and nonfamily-controlled firms, allowing for the potential endogeneity problem.

5. Conclusion

This study contributes to the literature pertaining to how corporate governance affects the propensity to stockpile cash in Taiwanese family-controlled firms. Cash holdings play an important role in a firm's financial structure and operation growth. However, agency problems will arise when the level of cash holdings increases. From an analysis of publicly listed companies in Taiwan, empirical results support the argument that the corporate cash decision-making process differs between family-controlled firms and nonfamily-controlled firms.

The evidence also suggests that corporate governance characteristics, especially the separation of control rights, the director-ownership-in-pledge ratio, the proportion of independent directors and the chair duality, affect the cash holdings in family-controlled firms. In contrast, only director-ownership-in-pledge ratio and chair duality affect the cash policy of nonfamily-controlled firms.

Prior research on cash reserves provides mixed evidence of the motives of managers to spend or keep cash reserves, and the effects of cash policy on corporate value. From a self-interested manager's perspective, the issue of whether to spend cash or whether to accumulate internal funds relates to how much cash reserves he/she has. This study's empirical results determine that a higher separation of board seat rights tends to increase cash holdings in low cash holding family-controlled firms, but reduces cash holdings in high cash holding family-controlled firms.

This study also considers the endogeneity problem in the empirical analysis of cash holdings, which is distinct from the previous literature. The endogeneity problems in this issue are important, for it is highly likely that observable and unobservable shocks affecting cash holdings can also affect some of the firm-specific characteristics, such as family control. The results suggest that the effects of corporate

governance on cash holdings differ between family-controlled firms and nonfamily-controlled firms.

References

- Anderson R, Reeb D. Founding family ownership, corporate diversification, and firm leverage. *J Law Econ* 2003;653–84.
- Anderson R, Mansi S, Reeb D. Founding family ownership and the agency cost of debt. *J Financ Econ* 2003;68:263–85.
- Bates TW, Kahle KM, Stulz RM. Why do U.S. firms hold so much more cash than they used to? Fisher College of Business Working Paper; 2006. No. 2007-03-006.
- Bebchuk LA, Kraakman RH, Triantis GG. Stock pyramids, cross-ownership, and the dual class equity: the creation and agency costs of separating control from cash flow rights. NBER Working Paper; 1999. No. W6951.
- Brenes ER, Madrigal K, Requena B. Corporate governance and family business performance. *J Bus Res* 2011;64(3):280–5.
- Chen YR, Chuang WT. Alignment or entrenchment corporate governance and cash holdings in growing firms. *J Bus Res* 2008;62(11):1200–6.
- Chen YR, Ho CY. The impact of family control and board characteristics on corporate policies. *J Manage* 2009;26(1):1–16.
- Cheung YL, Rau PR, Stouraitis A. Tunneling, propping, and expropriation: evidence from connected party transactions in Hong Kong. *J Financ Econ* 2006;82(2):343–86.
- Chong BS. The impact of divergence in voting and cash-flow rights on the use of bank debt. *Pacific-Basin Finance J* 2009;18(2):158–74.
- Chrisman JJ, Chua J, Litz R. Comparing the agency costs of family and non-family firms: conceptual issues and exploratory evidence. *Entrepreneurship Theory Pract* 2004;28:335–54.
- Chrisman JJ, Chua JH, Kellermanns FW, Chang EPC. Are family managers agents or stewards? An exploratory study in privately held family firms. *J Bus Res* 2007;60:1030–8.
- Claessens S, Djankov S, Lang L. The separation of ownership and control in East Asian corporations. *J Financ Econ* 2000;58(1–2):81–112.
- Claessens S, Djankov S, Fan J, Lang L. Disentangling the incentive and entrenchment effects of large shareholdings. *J Financ* 2002;57:2741–71.
- Cubbin J, Leech D. The effect of shareholding dispersion on the degree of control in British companies: theory and measurement. *Econ J* 1983;93:351–69.
- Demsetz H, Lehn K. The structure of corporate ownership: causes and consequences. *J Political Economy* 1985;93:1155–77.
- Desai A, Kroll M, Wright P. Outside board monitoring and the economic outcomes of acquisitions: a test of the substitution hypothesis. *J Bus Res* 2005;58:926–34.
- Dittmar A, Mahr-Smith J, Servaes H. International corporate governance and corporate cash holdings. *J Financ Quant Anal* 2003;38:111–33.
- Fama E, Jensen M. Separation of ownership and control. *J Law Econ* 1983;26:301–25.
- Fan PH, Wong TJ. Corporate ownership structure and the informativeness of accounting earnings in East Asia. *J Account Econ* 2002;33(3):401–25.
- Gomez-Mejia L, Nunez-Nickel M, Gutierrez I. The role of family ties in agency contracts. *Acad Manage J* 2001;44(1):81–95.
- Han S, Qiu J. Corporate precautionary cash holdings. *J Corporate Finance* 2007;13(1):43–57.
- Harford J, Mansi A, Maxwell WF. Corporate governance and firm cash holdings in the US. *J Financ Econ* 2008;87(3):535–55.
- Jaskiewicz P, Klein S. The impact of goal alignment on board composition and board size in family businesses. *J Bus Res* 2007;60(10):1080–9.
- Jensen MC. Agency costs of free cash flow, corporate finance and takeovers. *Am Econ Rev* 1986;76:323–31.
- Jensen MC, Meckling WH. Theory of the firm: managerial behavior, agency costs and ownership structure. *J Financ Econ* 1976;3:305–60.
- Kim CS, Mauer DC, Sherman AE. The determinants of corporate liquidity: theory and evidence. *J Financ Quant Anal* 1998;33(3):335–59.
- La Porta R, Lopez-De-Silanes F, Shleifer A. Corporate ownership around the world. *J Financ* 1999;54(2):471–517.
- La Porta R, Lopez-De-Silanes F, Shleifer A, Vishny R. Investor protection and corporate governance. *J Financ Econ* 2000;58:3–27.
- Martínez JL, Stohr BS, Quiroga BF. Family ownership and firm performance: evidence from public companies in Chile. *Fam Bus Rev* 2007;20:83–94.
- Mok MK, Lam K, Cheung I. Family control and return covariation in Hong Kong's common stocks. *J Bus Finance Account* 1992;19(2):277–93.
- Myers SC, Majluf NS. Corporate financing and investment decisions when firms have information that investors do not have. NBER Working Paper; 1984. No. W1396.
- Opler T, Pinkowitz L, Stulz R, Williamson R. The determinants and implications of corporate cash holdings. *J Financ Econ* 1999;52:3–46.
- Ozkan A, Ozkan N. Corporate cash holdings: an empirical investigation of UK companies. *J Bank Finance* 2004;28:2103–34.
- Pinkowitz L, Stulz RM, Williamson R. Do firms in countries with poor protection of investor rights hold more cash? NBER Working Paper; 2003. No. W10188.
- Shleifer A, Vishny R. Large shareholders and corporate control. *J Political Economy* 1986;94:461–88.
- Shleifer A, Vishny R. A survey of corporate governance. *J Finance* 1997;52:737–83.
- Ward JL. Keeping the family business healthy: how to plan for continuing growth, profitability, and family leadership. San Francisco: Jossey-Bass; 1987.
- Yeh Y, Lee T, Woidtke T. Family control and corporate governance: evidence from Taiwan. *Int Rev Finance* 2001;2:21–48.