Equity Incentives and Cash Holdings of Taiwanese Business Group Affiliation

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Abstract. This study examines the relationship between managerial incentives and cash holdings for business group-affiliated firms listed in Taiwan. The empirical evidence reveals that the managerial equity incentives have opposite effects on the group-affiliated firms' cash holdings. We employ the information disclosure and transparency rankings as a proxy for the corporate governance index and find that the index is successful in evaluating the moderating effects of the corporate governance mechanism on group-affiliated firms' cash holdings.

Keywords: Managerial Incentives, Corporate Governance, Cash Holdings, Business Group Affiliation.

1. Introduction

Business groups are the dominant mode of corporate organization in many emerging economics and with collections of firms that are legally independent, bound together and used to taking coordinated actions [1]. There are different types of business groups exist in different markets, such as *Keiretsus* in Japan, Hongs in Hong Kong, *Chaebols* in South Korea, and *Guanxiqiye* in Taiwan. Business groups in Taiwan have been characterized by interlocked directorates and cross-shareholding among affiliated firms [2], [3]. Studies of business groups have analyzed the association between business group affiliation and firm performance, R&D and leverage policy [1], [4], [5]. Nevertheless, to our knowledge, little attention has been directed to addressing managerial incentives on the cash holding policy of the business group-affiliated firms.

By using a cross-sectional regression framework and utilizing an integrating of agency theory with an institutional perspective [6], this study aims to extend the research streams from the group affiliation and to examine the role of managerial incentives in making corporate cash holding decisions. We employ Information Disclosure and Transparency Rankings System (IDTRS) rankings provided by the Securities and Futures Institute (SFI) in Taiwan as a proxy for the governance index to investigate its effects both in terms of mitigating the agency costs and moderating the effects of group affiliation. The empirical evidence shows that affiliated firms with higher growth opportunity, that are small in size, have lower net working capital and leverage, and that pay out more dividends hold more cash than non-affiliated firms. Besides, the managerial incentives alignment effects dominate at high level of management equity ownership but managerial entrenchment effects dominate at low level of management equity ownership.

2. Hypotheses Development

Business groups are an important organization form in many emerging countries and typically have multiple, conflicting, and complementary effects on their host societies and the firms that affiliate with them [7]. According to the theoretical perspectives [2], [8]-[11], business groups act as a social network to offer benefits to their affiliated firms and resolve the voids that arise from the imperfection of the emerging markets. Compared with the stand-alone counterparts, group-affiliated firms are more likely to acquire financial capital from an efficient business environment. Jensen [12] posits that managers have incentives to accumulate cash to gain discretionary power over the investment decisions rather than payout more dividends to shareholders. The stock and stock options that are awarded to managers have been long recognized to help align the decisions of managers with the interests of shareholders [13]. Chava and

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Purnanandam [14] find that higher managers' risk-taking incentives are associated with lower cash holdings. Based on the studies above, we propose that the cash holding decisions of group-affiliated firms differ from those of non-affiliated firms and predict that when the managers have incentives to increase the firm's risk decisions based on their stock ownerships, they will tend to opt for riskier corporate policies, and the reverse will occur when they have incentives to decrease the firm's risk decisions. Thus, this paper constructs the first hypothesis as follows: H1: The incidence of group-affiliated firms' cash holdings is positively associated with the managerial equity incentives.

Corporate governance has emerged as an important issue for firms to mitigate Jensen's agency theory [12]. The prior literature basically examines the effect of corporate governance mechanisms on business decisions through various characteristics of the governance structure [15]. In addition to these corporate governance mechanisms, some studies employ Transparency and Disclosure Study (T&D Study) rankings that are provided by Standard & Poor's as a proxy for corporate governance and show that a firm's T&D ranking could serve as a good proxy for corporate governance [16]. Consistent with other stock markets, the SFI in Taiwan launched an IDTRS to evaluate the level of transparency for all listed firms in Taiwan in 2003. Thus, Following Tsai et al. [17], we employ IDTRS rankings to serve as a proxy for the corporate governance mechanisms, and expect that the rankings can help both mitigate the agency costs and moderate the group affiliation effects. Thus, this paper constructs the second hypothesis as follows: H2: The incidence of affiliated firms' cash holdings is negatively associated with the corporate governance mechanisms.

3. Data and Measures

The sample firms used in our study include firms listed in the Taiwan Stock Exchange (TSE) market from 2006 to 2009. Data are collected from the Taiwan Economic Journal (TEJ) database. We drop the finance and insurance industries and government firms due to the unique nature of their regulations and requirements. After deleting firms with missing data, the final sample comprises a total of 1,137 listed firms of which 384 related to affiliated firms and 653 to non-affiliated firms. The sample comprises a total of 4,262 firm-year observations of which 1,356 related to affiliated firms and 2,906 to non-affiliated firms. To reduce the influence of outlier observations, all of the variables are winsorized at the 1st and 99th percentile levels.

Following prior studies, this study employs the ratio of cash and short-term investments to total net assets to measure corporate cash holdings CASH [18]. Business group affiliation DAFF is measured by an indicator variable, which takes a value of one, if the firm belongs to a business group with at least two listed firms, and zero otherwise. MAOWN is the proportion of common stock equity held by managers, and MAOWNQ is the squared term of MAOWN. This paper sets IDTR from 5 to 1 which corresponds to the company's ranking from grade A^+ to C-. The higher the index, the lower are the hurdles to good corporate governance, and so stronger is the corporate governance in the firm. Firms with a higher IDTR would have lower costs of holding cash and so would have higher cash holdings. A number of firm-specific control variables included in the models are all based on the existing literature. Specifically, we use: (a) the natural logarithm of the firm's total assets SIZE to control for firm size; (b) the book value of debt plus the market value of equity divided by total assets MB as a proxy for investment opportunities; (c) the leverage LEV measured as total debt divided by total assets; (d) WOCA, which is the ratio of net working capital to non-cash assets; and (e) LDIV, which is the natural logarithm of cash dividends.

4. Empirical Analysis

A total of 4,262 firm-year observations are included in the sample to test the hypotheses. Table 1 provides the descriptive statistics and the definitions of the related variables based on the sample. In Table 1, cash holdings CASH has a mean of 31%. The mean value of the business group dummy DAFF shows that 31.8% of the samples are affiliated firms. The average firm in the sample has equity ownership MAOWN of 1.16% and governance rankings grade IDTR of 2.731. In terms of control variables, the mean of the firm size is 6.606, the mean of the market-to-book ratio MB is 1.366, the mean of the leverage LEV is 41.6%, the mean of the net working capital WOCA is 11.1%, and the mean value of the dividends payout is 3.398.

Table 1: Descriptive statistics

Variables	Definitions	Mean	Median	Std Dev.	1st Quintile	4th Quintile
CASH	Cash and short-term investments to total assets	0.310	0.176	0.447	0.087	0.356
$CASH_{t-1}$	Lagged ratio of CASH	0.284	0.160	0.417	0.080	0.328
DAFF	Dummy variable that takes a value of 1 if a firm is affiliated to a group with at least two listed firms, and 0 otherwise	0.318	0.000	0.466	0.000	1.000
MAOWN	Proportion of equity held by managers	1.158	0.004	0.021	0.009	0.012
MAOWNQ	Squared term of MAOWN	6.066	0.002	0.303	0.001	0.014
SIZE	Natural logarithm of total assets	6.606	6.533	0.616	6.181	6.938
MB	The book value of debt plus market value of equity divided by total assets	1.403	1.139	0.903	0.902	1.578
LEV	Total debt to total assets	0.416	0.417	0.183	0.276	0.541
WOCA	Net working capital (current assets minus current liabilities) to non-cash assets	0.111	0.109	0.179	0.011	0.220
LDIV	Natural logarithm of dividends	3.398	4.684	2.539	0.000	5.366
IDTR	Corporate governance index, from 1 to 5	2.731	3.000	1.160	2.000	3.000

The table consists of 4,262 firm-year observations during the period 2006-2009.

Table 2: The Effects of Managerial Incentives and Corporate Governance on Cash Holdings: Full Sample

$$CASH_{it} = a_0 + a_1 CASH_{it-1} + a_2 DAFF_{it} + a_3 MAOWN_{it} + a_4 MAOWNQ_{it} + a_5 SIZE_{it} + a_6 MB_{it} + a_7 LEV_{it}$$
$$+ a_8 WOCA_{it} + a_9 LDIV_{it} + a_{10} IDTR_{it} + a_{11} MANOW_{it}*IDTR_{it} + a_{12} MANOWQ_{it}*IDTR_{it} + \varepsilon_{it}$$

	Dependent Variable: CASH (N=4,262)		
	Model 1	Model 2	Model 3
INTERCEPT	0.353(7.009)[a]	0.347(6.885)[a]	0.337(6.690)[a]
$CASH_{t-1}$	0.802(77.019)[a]	0.804(77.061)[a]	0.806(77.291)[a]
DAFF	0.0259(2.821)[a]	0.026(2.744)[a]	0.026(2.944)[a]
Managerial Incentive			
MAOWN	0.007(1.992)[b]	0.007(1.949)[c]	0.005(1.490)
MAOWNQ	-0.001(-2.014)[b]	-0.001(-1.996)[a]	-0.001(-1.800)[c]
Control Variables			
SIZE	-0.031(-3.848)[a]	-0.026(-3.010)[a]	-0.284(-3.442)[a]
MB	0.029(6.223)[a]	0.028(5.945)[a]	0.027(5.708)[a]
LEV	-0.003(-10.746)[a]	-0.003(-10.991)[a]	-0.003(-10.514)[a]
WOCA	-0.156(-6.121)[a]	-0.151(-5.941)[a]	-0.148 (-5.836)[a]
LDIV	0.004 (2.363)[b]	0.005(2.551)[b]	0.005(2.530)[b]
Governance Variables			
IDTR		-0.009(-2.414)[b]	0.001(0.128)
MANOW*IDTR			-0.011(-4.091)[a]
MANOWQ*IDTR			0.001(4.026)[a]
Adj. R^2	0.681	0.681	0.682

Robust t-statistics are in parentheses. The symbols [a], [b], and [c] denote statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are as defined in Table 1.

To examine the relationship between corporate governance and the corporate cash holding policy, this paper first includes a business group affiliation dummy variable and control variables in the regression models. Next, this paper introduces the governance index and the interaction term to the models. Finally, this

paper tests the effects of managerial incentives and corporate governance on firm cash holdings for affiliated firms subsample. All models also include year dummy variables and the results are not tabulated. The results of the cash holdings policy are provided in Table 2. The group affiliation dummy variable DAFF coefficients in Models 1, 2, and 3 are all positive and significant at the 1% level. The findings indicate that affiliated firms are more likely to acquire financial capital from an efficient business environment and hold more cash than those of non-affiliated firms.

The managerial equity incentives MAOWN coefficients in Models 1, 2, and 3 are all positive and partially significant. In contrast, the squared term of the managerial equity incentives MAOWNQ coefficients in Models 1, 2, and 3 are all negative and significant at least at the 10% level. The evidence is consistent with the prior studies [14], [19], [20] and shows that the managerial incentives alignment effects dominate at high level of management equity ownership but managerial entrenchment effects dominate at low level of management equity ownership. The IDTR coefficient in Model 2 is negative and significant at the 5% level. Besides, the coefficient of the governance proxy and its interaction with the managerial ownership in Model 3 is negative and significant at the 1% level. However, coefficient of the governance proxy and its interaction with the squared term of managerial ownership in Model 3 is positive and significant at the 1% level. The findings demonstrate that the effects of governance on cash holdings is more significant among the affiliated firms and show that the IDTRS rankings serve as a proxy for the governance mechanism that can help both mitigate the agency costs and moderate the effect of group affiliation.

Table 3: The Effects of Managerial Incentives and Corporate Governance on Cash Holdings: Affiliated Firms

$CASH_{it}= a_0 + a_1 CASH_{it-1}+a_2 MAOWN_{it}+ a_3 MAOWNQ_{it}+ a_4 SIZE_{it} + a_5 MB_{it} + a_6 LEV_{it} + a_7 WOCA_{it}$ $+ a_8 LDIV_{it}+ a_9 IDTR_{it} + a_{10} MANOW_{it}*IDTR_{it} + a_{11} MANOWQ_{it}*IDTR_{it} +\varepsilon_{it}$		
Dependent Variable: CASH (N=1,356)		
	Model 1	Model 2	Model 3
INTERCEPT	0.358(4.225)[a]	0.354(4.173)[a]	0.345(4.056)[a]
$CASH_{t-1}$	0.856(46.363)[a]	0.857(46.032)[a]	0.860(46.152)[a]
Managerial Incentive			
MAOWN	0.028(3.377)[a]	0.028(3.394)[a]	0.022(2.516)[b]
MAOWNQ	-0.002(-3.347)[a]	-0.002(-3.384)[b]	-0.001(-1.630)
Control Variables			
SIZE	-0.031(-2.489)[b]	-0.028(-2.181)[a]	-0.033(-2.510)[b]
MB	0.028(3.096)[a]	0.027(2.997)[a]	0.027(2.970)[a]
LEV	-0.003(-5.758)[a]	-0.003(-5.796)[a]	-0.003(-5.320)[a]
WOCA	-0.189(-3.538)[a]	-0.186(-3.445)[a]	-0.190(-3.540)[a]
LDIV	0.003(0.976)	0.003(1.028)	0.004(1.188)
Governance Variables			
IDTR		-0.005(-0.677)	0.007(0.849)
MANOW*IDTR			-0.019(-2.827)[a]
MANOWQ*IDTR			0.001(2.871)[a]
Adj. R^2	0.709	0.708	0.710

Robust t-statistics are in parentheses. The symbols [a], [b], and [c] denote statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are as defined in Table 1.

As for the control variables, the results are consistent with the prior literature. Collectively, these results suggest that affiliated firms with higher growth opportunities, that are smaller in size, have lower net working capital and leverage, and pay out more dividends hold more cash than non-affiliated firms. Table 3 shows the results of the effects of managerial incentives and corporate governance on affiliated firm cash holdings. Compared to the results of Table 2, the managerial incentives coefficients in Table 3 are all more significant and suggest that the managerial incentives effects on affiliated firm cash holdings are more

significant than non-affiliated firms. The governance proxy IDTR also plays the same role in affiliated firms' cash holdings. In sum, the results in Tables 2 and 3 provide strong support for the hypotheses H1 and H2.

5. References

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