

Excess Cash Holding and Corporate Governance: A Comparative Study of Taiwan and Mainland China Firms

Catherina Ku, PhD

Assistant Professor
College of Business
California State University
82-A108, Valley Hall, Campus Center
Seaside, CA 93955, USA.

Torng-Her Lee, PhD

Assistant Professor
Department of Economics
National Dong Hwa University
No. 1, Sec. 2, Da Hsueh Rd. Shoufeng, Hualien 97401
Taiwan, R.O.C, USA.

Haimin Chen

Instructor
Department of Tourism Management
Dahan Institute of Technology
No.1, Shuren St., Dahan Village, Sincheng Township
Hualien County, R.O.C, USA.

Da-Quan Chang

Department of Economics
National Dong Hwa University
No. 1, Sec. 2, Da Hsueh Rd. Shoufeng, Hualien 97401
Taiwan, R.O.C, USA.

Abstract

This study explores the relationship between excess cash holding and corporate governance of firms across the Taiwan Strait. Due to special state ownership in private business, we adopt different ways to compare the corporate governance of two different business environments. In general, management shareholdings, board members shareholdings, and state shareholdings have no significant relationship with cash ratio, but foreign investors' shareholdings have a significant positive relationship with cash ratio. In Taiwan, the data indicates that the interactive term of the board member shareholding and excess cash have a positive impact on the growth of a company's market value; on the other hand, in China, the data shows that the interactive term of state ownership and the excess cash have a negative influence on the growth of company's market value. The implication of this finding is that board member shareholding is in a better position to monitor management than other capital ownership.

Key Words: Excess Cash, Corporate Governance, Capital Structures

1. Introduction

This study refers to the APA Study Guide and defines "Excess Cash" as the cash and cash equivalent in excess of working capital. Firms would keep some excess cash for future requirements or respond to adverse risk. Managers with substantial free cash flow can increase dividends or repurchase stock and thereby pay out current cash that would otherwise be invested in low-return projects or wasted. Jensen (1986) discussed the conflict of interests between managers and shareholders.

Stockholders would like to receive more cash dividends if a firm cannot invest the excess cash into profitable investment activities. Managers would consider whether paying more cash dividends would reduce managers' ability to keep excess cash, reduce cash resources in the firm, and cause agency problems. Jensen (1986) also argued that the free cash flow theory predicts that many acquirers will tend to have exceptionally good performance prior to acquisition. That exceptional performance generates the free cash flow for the acquisition. Therefore, a study of the excess holdings of cash should also check corporate governance as a key factor.

Jensen & Meckling (1976) indicated that if the internal stockholders share the same benefits as the external stockholders, by increasing internal shareholder's shares, they would also reach the target of corporate governance. This study explores the relationship of equity and excess cash between firms in China and Taiwan; we discuss and compare the influence of cash ratio, market value, and the return of assets between firms in the two countries. In Taiwanese corporate governance, the equation adds the variables of managers' ownership rate, directors' ownership rate, and foreign ownership rate. In China's corporate governance, the equation models the variables of government ownership and of the foreign ownership rate.

2. Literature Review

Most studies focus on the agent problem caused by holding excess cash, ineffective management, and shareholders dissatisfaction. Jensen and Meckling (1976) proposed managers should return excess cash to shareholders and raise enough debt to distribute cash dividends. Vermilion (1981) proposed repurchasing stocks to increase shareholders' capital gain. Jensen (1986) proposed the agent problem is caused by excess free cash flow. A firm could hold more cash for financing purposes or distribute excess cash to shareholders to reduce the excess liquidity of cash. Lehn & Poulsen (1989) proposed the merging of debt by using the excess cash to solve the agent problem.

Faulkender & Wang (2006) examined the variation in excess stock returns and found that the marginal value of cash declines with larger cash holdings, higher leverage, better access to capital markets, and firms choosing greater cash distribution via dividends rather than repurchases. Opler *et al.* (2001) studied the determinants of liquid asset holdings by publicly traded U.S. firms and how these holdings change over time. They found that the important determinants of corporate cash holdings are size, risk, and the extent of the firm's investment opportunities, with smaller, riskier, and high-growth firms holding larger amounts of cash as a percentage of total (non-cash) assets.

Pinkowitz *et al.* (2006) found that companies in 35 countries with limited protection for minority shareholders tend to have higher ratios of cash-to-total assets than comparable companies in more protective regimes. Pinkowitz *et al.* (2006)'s findings also support Michael Jensen's "free cash flow" theory – the tendency of corporate managers in mature companies to retain and then waste excess cash on low-return projects. Pinkowitz *et al.* (2006) also suggested that in companies facing significant agency costs of free cash flow, cash holdings should be discounted since they are expected to be spent partly on projects designed to increase the welfare of those who control the firm rather than to maximize the wealth of all investors. Harford (1999) shows that regardless of a firm's level of corporate governance, firms with large cash reserves spend more on acquisitions. Harford, Mansi, and Maxwell (2005) build on this finding and show that poorly governed firms dissipate cash through acquisitions. Both papers focus on the level of cash holdings, rather than the value of cash holdings.

Most corporate governance research focuses on financial statements studies. From financial statements, one can find useful corporate governance information: capital structure, internal governance, the board of directors, the distribution of managers' bonuses, and the debt structure. In researching capital structure, Jensen & Meckling (1976) proposed the convergence of interest hypothesis; it assumed that an optimum level of debt would minimize total agency costs by balancing the agency cost of external equity and debt.

The relationship between capital structure and management ownership depends on the relative size of the agency costs of equity and debt at various levels of management ownership. The higher the management ownership, the more similar interest trends of managers and shareholders; managers have higher incentive to work for companies' interests. Jensen & Ruback (1983) proposed the conflict of interest hypothesis; it assumed that the higher the ownership of managers, the higher the anti-takeover behaviors. It indicated that managers with higher ownership would have more veto power in the board of directors. Managers who tend to keep their own positions, would veto issues of merger, acquisition, or repurchases of stocks.

La Porta *et al.* (1999) and Salacuse (2003) found that the ownership and control structures are significantly concentrated in Asian and European corporations, while the ownership and control structures are more dispersed in American corporations or Anglo-American corporations. From these studies, one would assume that Taiwanese corporations' ownership is more concentrated. In companies that have concentrated ownership, the influence of managers' shareholdings and the supervising ability of the board of directors would be significantly affected. Therefore, the number of external board members would also affect the ability of supervising managers significantly.

Oswald and Jahera (1991) found that the higher the shareholdings of the board members and managers, the better the operating performance of corporations. Core *et al.* (1999) found that the percentage of internal board members correlates positively with the level of corporate governance, and correlates negatively with the compensation levels and overall cost to firms. Dittmar and Mahrt-Smith (2007) examined how corporate governance impacts a firm's value by comparing the firm's value and their use of cash holdings between poorly governed and well-governed firms. They discovered that corporate governance has a substantial impact on firm value through its impact on cash holdings. Poorly governed firms dispel cash quickly, and it eventually reduces operating performance. However, well-governed firms who dispel larger cash holdings eliminate the negative impact on operating performance. This study refers to the above literature, retrieves and selects some corporate governance models and variables with cash holdings for hypothesis testing, it then compares the capital structures between Taiwanese and Chinese firms.

3. Research methodology

This study refers to literature in corporate governance, corporate performance, and cash holdings to develop the research model to test the relationship between excess cash holdings and capital structures. The research hypotheses are as follows:

- H1: Considering risk factors and self-interest, the managers' ownership is positively correlated with the firms' cash holdings; increases in managers' ownership are linked to increases in the cash ratio.
- H2: The board members' ownership is negatively correlated to cash ratio; greater ownership of board members enhances supervision over managers, leading to better utilization of idle cash.
- H3: The shareholdings of foreign investors have a positive relationship to idle cash; information disclosure quality is better with more foreign investor shareholdings.
- H4: The relationship of institutional shareholdings and cash ratio is positive, especially the national government shareholdings in China.

The major research data of various industries of China and Taiwan have been retrieved from the database of the Taiwan Economic Journal (TEJ); some other data are from the Market Observation Post System (MOPS) of the Taiwan Stock Exchange Corporation (TSEC). The data are collected from all industries, excluding the banking industries. The data periods cover the year range of 2002 to 2009. All of the research subjects are normal corporations, and should report the completed information about their board members' shareholdings. Any corporation which does not have above information will be eliminated because the data of the subjects are unbalanced. In total, there are 1,232 subjects of Taiwan corporations, and 1,533 subjects are from China. In the regression models, some criteria will be added for the research testing of different financial positions. For example, this study tests if $ROA > 0$ and excess cash ratio > 1 would affect the capital structure. This study uses E-views 6.0 for related OLS regression analysis and uses Microsoft Excel 2007 for description analysis.

3.1 Research Variables and Research Models

This research adopts the cash model of Opler *et al.* (1999) to study the relationship between capital structure and excess cash holdings. It also adopts multivariate regression models to test market value of net assets, market value growth and excess assets return. The four regression models are expressed below:

3.1.1. Model One: Normal Cash Model

This model is based on the model in Opler *et al.* (1999), with added in capital structure variables. It compares the difference of China and Taiwan corporations.

$$CASH_{i,t} = \beta_0 + \beta_1 MTB_{i,t} + \beta_2 SIZE_{i,t} + \beta_3 CF_{i,t} + \beta_4 NWC_{i,t} + \beta_5 CAPEX_{i,t} + \beta_6 LEVERAGE_{i,t} + \beta_7 DIVDUM_{i,t} + \beta_8 X(1)_{i,t} + \beta_9 X(2)_{i,t} + \beta_{10} X(3)_{i,t} + YFE + FFE + \epsilon_{i,t} \quad (1)$$

Definition of variables

CASH = $\ln[(\text{cash})/(\text{Total Assets} - \text{cash} - \text{marketable securities})]$; cash and cash equivalent from TEJ. Marketable securities: short term equity securities in TEJ.

MTB = Ratio of market value of net assets to Book value of net assets

SIZE = Company size; = $\ln(\text{Total assets} / 100)$

CF = Ratio of Cash flow to net assets; Cash flow = Earnings before interest and tax plus depreciation; net assets = total assets – cash and cash equivalent – marketable securities.

NWC = Ratio of Net Operating Working Capital to Net asset; Net operating working capital = current assets – current liabilities – cash and cash equivalent – marketable equity securities; net assets = total assets – cash and cash equivalent – marketable equity securities.

CAPEX = Ratio of Capital expenditure to Net assets. Capital expenditure is the purchase of fixed assets in TEJ. :

LEVERAGE = Ratio of debt to net assets (the financial leverage); debt = total liabilities in TEJ.

DIVDUM = a dummy variable of dividend distribution; “zero” indicated no dividend distributed during the year; “one” indicated dividend have been distributed.

SHAREHOLDERS = Dividend payout ratio; which equals to cash dividend divided by current net income. This variable will replace DIVDUM to test the effect of dividend payout ratio.

X(1) = ratio of managers shareholdings

X(2) = ratio of board members’ shareholdings.

X(3) = ratio of foreign shareholdings.

YFE = Yearly fixed effects

FFE = Individual firms’ fixed effects.

3.1.2. Model Two: Market value of net assets to book value of net assets

This model is based on the model of Fama and French (1998) and Dittmar and Mahrt-Smith (2007), with addition in the capital structure variables. This model also covers data from cross sections.

$$MB_{i,t} = \beta_0 + \beta_1 (E_{i,t}/NA_{i,t}) + \beta_2 (dE_{i,t}/NA_{i,t}) + \beta_3 (dE_{i,t+1}/NA_{i,t}) + \beta_4 (Div_{i,t}/NA_{i,t}) + \beta_5 (dDiv_{i,t}/NA_{i,t}) + \beta_6 (dDiv_{i,t+1}/NA_{i,t}) + \beta_7 (I_{i,t}/NA_{i,t}) + \beta_8 (dI_{i,t}/NA_{i,t}) + \beta_9 (dI_{i,t+1}/NA_{i,t}) + \beta_{10} (dNA_{i,t}/NA_{i,t}) + \beta_{11} (dNA_{i,t+1}/NA_{i,t}) + \beta_{12} (XCash_{i,t}) + \beta_{13} (X_{i,t}) + \beta_{14} (X_{i,t} * XCash_{i,t}) + YFE + FFE + \epsilon_{i,t} \quad (2)$$

In equation 2, term t-1 is the base period, term t is the current period, and t +1 is the next period; d(variables_{i,t}) is a certain variable’s value at the current period value minus its value from the base period; d(variables_{i,t+1}) is the next period’s value minus current period’s value. The reason for including (variables_{i,t+1}) in the model is that the market value normally contains stockholders’ forecast of stock price. In the current period, a firm normally has to set up the next year’s investment plan and operating targets, the forecast effect of stock price by stockholders would be included in the next period’s variables. For example, electronics companies normally receive purchase orders six months in advance. Purchase orders received by the end of this year will affect the next year’s operating profit, which affects this period’s stock price.

Variable definitions:

MB = Ratio of firm’s market value to net assets; Firm’s market value = Market Value from TEJ times 1,000 to have the same monetary unit.

E = operating profit, EBIT, earnings before interest and tax.

Div = Common stock dividends.

NA = Net assets; = from TEJ’s total assets – cash and cash equivalent – short term equity securities.

I = interest expense.

XCASH = Excess cash ratio = the residual value of regression one from model one. Model one contains major variables of operating decisions. The residual of cash that excluded from the operating expense would be treated as the basis for estimation of excess cash ratio.

X = capital structure variable, could be managers shareholdings, or board members’ shareholdings, or foreign investors’ shareholdings.

YFE = Yearly fixed effects

FFE = Individual firms’ fixed effects.

3.1.3. Model Three: Market Value Return Model

This model is based on the model of Faulkender and Wang (2006), with additions in the capital structure variables. This model also covers cross-period effects. $d(\text{variable}_{i,t})$ is the current (variable) minus its base period (variable), this difference is also added into the regression model.

$$\begin{aligned} (\text{ME}_{i,t} - \text{ME}_{i,t-1}) / \text{ME}_{i,t-1} = & \beta_0 + \beta_1(\text{XCash}_{i,t-1} / \text{ME}_{i,t-1}) + \beta_2(d\text{E}_{i,t} / \text{ME}_{i,t-1}) + \beta_3(d\text{NA}_{i,t} / \text{ME}_{i,t-1}) + \beta_4(d\text{I}_{i,t} / \text{ME}_{i,t-1}) \\ & + \beta_5(d\text{Div}_{i,t} / \text{ME}_{i,t-1}) + \beta_6(\text{XCash}_{i,t-1} / \text{ME}_{i,t-1}) + \beta_7 * \text{L}_{i,t} + \beta_9(\text{NF}_{i,t} / \text{ME}_{i,t-1}) + \beta_8(\text{XCash}_{i,t-1} * d\text{XCash}_{i,t}) \\ & + \beta_9(\text{L}_{i,t} * d\text{XCash}_{i,t}) + \beta_{10}(\text{X}_{i,t} * d\text{XCash}_{i,t}) + \beta_{11} \text{X}_{i,t} + \text{YEF} + \text{FFE} + \varepsilon_{i,t}(3) \end{aligned}$$

Definition of variables

ME = Market value of equity. Retrieved from TEJ's market value times 1,000, for the same measurement unit.

XCASH = Excess cash ratio = the residual value of regression one from Model one.

E = operating profit; retrieved from TEJ's earnings before interest and tax.

I = interest expense

Div = Common stock dividends NA = Net assets; = from TEJ's total assets – cash and cash equivalent – short term equity securities.

L = level of leverage; total liabilities from TEJ

NF = New financing resource = New equity capital + new debt capital; New equity capital = current equity minus base period's equity; new debt capital = current long term liabilities minus base period's long term liabilities.

X = capital structure variable, could be managers shareholdings, or board members' shareholdings, or foreign investors' shareholdings.

YFE = Yearly fixed effects

FFE = Individual firms' fixed effects.

3.2. Regression Analysis Results

3.2.1. Model One – Taiwan data regression analysis results

Table 1 shows the regression result of cash holding ratio and capital structure. The adjusted R-Square is 0.218738 for this regression model. The p-values for each year's "yearly effect" are all significantly less than 1%. Compared to the 2002 base year, cash holding ratios from year 2003 to 2009 are positively increased. The coefficient of year 2003 is 0.082594 and the coefficient of year 2009 is 1.896033, indicating cash holding is doubled.

Table 1: Model One Regression - Cash Ratio Analysis – Taiwan Data

Independent Variables	Yearly Effects	[1]	[2]	[3]	Director/ shareholders (x1)	Board Member/ shareholders(x2)	Design shareholders(x3)	df shareholdings
SIZE	-	-0.097116** (0.04390)	-0.125755** (0.04985)	-0.072698** (0.03340)	-0.132325** (0.05177)	-0.134122*** (0.05173)	-0.136747*** (0.05170)	-0.13766*** (0.05176)
MTB	-	0.089302*** (0.01736)	0.085347*** (0.01695)	0.085415*** (0.01680)	0.081861*** (0.01650)	0.0819*** (0.01651)	0.081695*** (0.01643)	0.081493*** (0.01646)
CF	-	0.458454*** (0.11681)	0.493703*** (0.14630)	0.417931*** (0.12917)	0.479464*** (0.14960)	0.484559*** (0.14913)	0.480984*** (0.14950)	0.487801*** (0.14918)
NWC	-	-0.804672*** (0.12414)	-0.703376*** (0.12089)	-0.747191*** (0.11943)	-0.722902*** (0.12564)	-0.719851*** (0.12537)	-0.715537*** (0.12546)	-0.712168*** (0.12537)
LEVERAGE	-	-	0.165257 (0.17959)	0.012135 (0.12845)	0.131903 (0.18458)	0.137029 (0.18393)	0.142199 (0.18446)	0.149506 (0.18374)
CAPEX	-	-	0.704311*** (0.26567)	0.494382** (0.22305)	0.692281** (0.28102)	0.690969** (0.28142)	0.687688** (0.28110)	0.692226** (0.28159)
DIVIDUM	-	-	0.121569*** (0.02893)	-	0.122903** (0.02928)	0.12427*** (0.02920)	0.119663*** (0.02919)	0.123844*** (0.02919)
SHAREHOLDERS	-	-	-	0.001419 (0.00095)	-	-	-	-
[x](1)	-	-	-	-	-0.652926 (0.71926)	-	-	-0.565763 (0.72719)
[x](2)	-	-	-	-	-	-0.187395 (0.16545)	-	-0.190515 (0.16671)
[x](3)	-	-	-	-	-	-	0.319607** (0.14993)	0.337281** (0.15072)
NUM2003	0.082594*** (0.03044)	-	-	-	-	-	-	-
NUM2004	0.217224*** (0.03208)	-	-	-	-	-	-	-
NUM2005	0.439836*** (0.03384)	-	-	-	-	-	-	-
NUM2006	1.034769*** (0.04276)	-	-	-	-	-	-	-
NUM2007	1.724639*** (0.04389)	-	-	-	-	-	-	-
NUM2008	1.799656*** (0.04424)	-	-	-	-	-	-	-
NUM2009	1.896033*** (0.04271)	-	-	-	-	-	-	-
C	-2.681563*** (0.03959)	-0.818002*** (0.45858)	-0.645871 (0.46662)	-1.02917*** (0.34006)	-0.518449 (0.48550)	-0.466981 (0.48423)	-0.504034 (0.48551)	-0.45033 (0.48462)
R-squared	0.219289	0.760917	0.762181	0.772906	0.769945	0.770004	0.770017	0.770114
Adjusted R-squared	0.218738	0.724862	0.726291	0.737195	0.73363	0.733702	0.733737	0.733779
Sample Size	9927	9723	9717	9303	9353	9354	9351	9350

Note: *** indicates 1 % significant level; ** indicates 5% significant level; * indicates significant level. Numbers in () are standard deviations of coefficients. All regression equations have White’s heteroscedasticity consistent standard errors.

The second column of Table 1 refers to the relationship of excess cash holdings ratio with firm size (SIZE), firm's market value to book value (MTB), cash flow ratio (CF), and net working capital (NWC). The residual value represents the excess cash ratio and it is the residual cash flow from operating expenses in the regression model. The regression model of the third column [2] and the fourth column [3] are comparing the effects of the dummy variable and the dividend payout ratio. The results show that the dummy variable has reached the 1% significant level, but the dividend payout ratio does not have significant effect on excess cash. Thus, this indicates that a firm's dividend policy does have a positive relationship with cash holdings, but the dollar amounts of dividends have no relationship with cash holdings.

Column five to column eight of Table 1 show the results of relationship between cash holdings and capital structure variables – managers' shareholding, board members' shareholdings, and foreign holdings. The analysis results indicate that only the foreign investor's shareholdings have a positive relationship at the 5% significant level with a coefficient of 0.319607. Each additional unit of foreign investor's shareholding would increase 0.319607 cash holdings ratio. Managers' shareholdings and board members' shareholdings have no relationship with cash holdings. Column eight takes all of the three capital structure variables into account in the regression model; the results indicate that only foreign shareholdings have a positive relationship with cash holdings at 5% level with a coefficient of 0.337281.

Table 1 also indicates at the 1% significant level that the related variables with cash holdings are: company size (SIZE), the ratio of market value to book value (MTB), ratio of cash flow to net assets (CF), and the dummy variable of dividend distribution (DIVDUM). At the 5% significant level, the related variables are: ratio of net working capital (NWC) and the ratio of capital expenditure to net assets (CAPEX). The results indicate that the variables of SIZE, MTB, CF, and CAPEX have the same signs as previous literatures' findings. There are two variables which have different signs compared to previous literatures. The two variables are ratio of net working capital (NWC) and the dummy variable of dividend distribution (DIVDUM); both of them have positive signs and indicate a positive relationship with cash holdings. The adjusted R-square of model one regression is from 0.724862 to 0.733779 for including all different variables.

3.2.2. Model 2 – Taiwan data regression analysis results

In model two, the dependent variable is the ratio of market value of net assets to the book value of net assets; it is very similar to market to book value ratio concept. The first column of Table 2 is comparing the yearly effects. The results show that compared to the base year of 2002, only 2008's yearly effect is not significant. Coefficients of these yearly effects are positive, indicating positive relationships of yearly effects to the ratio of market value to book value; these coefficients are gradually increasing, except for year 2008. For 2009, the yearly effect has the highest coefficient of 1.000972.

Table 2: Model Two Regression: Market value to book value of net assets – Taiwan Data

Independent Variables	Yearly Effects	Managers Shareholdings [x]		Board Members Shareholdings [x]		Foreign Shareholdings [x]	
EARNING_ASSETS	-	3.218289***	3.269182***	3.217303***	3.243047***	3.184532***	3.237213***
		(0.45507)	(0.87772)	(0.46147)	(0.87829)	(0.45711)	(0.87614)
Δ(EARNING_ASSETS)	-	-0.051718	-0.027125	-0.053245	-0.027575	-0.048198	-0.022662
		(0.06621)	(0.04689)	(0.06691)	(0.04721)	(0.06488)	(0.04699)
Δ(EARNING_ASSETS(1))	-	0.554914*	0.673581*	0.556377*	0.662988*	0.548516	0.667918*
		(0.33401)	(0.37541)	(0.33744)	(0.37703)	(0.33520)	(0.37438)
SHAREHOLDERS	-	0.037957***	0.028224	0.03644***	0.029327	0.038562***	0.027545
		(0.01324)	(0.02328)	(0.01282)	(0.02341)	(0.01326)	(0.02308)
Δ(SHAREHOLDERS)	-	-0.031757**	-0.028184**	-0.030189**	-0.02837**	-0.032155**	-0.027395**
		(0.01256)	(0.01392)	(0.01211)	(0.01379)	(0.01254)	(0.01350)
Δ(SHAREHOLDERS(1))	-	0.003513**	-0.004011	0.003539**	-0.003196	0.003619**	-0.004116
		(0.00176)	(0.01559)	(0.00176)	(0.01568)	(0.00180)	(0.01570)
INTEREST_ASSET	-	-11.00138**	0.189636	-11.61054**	0.152064	-11.13904**	-0.123972
		(4.62393)	(8.95328)	(4.57916)	(8.90603)	(4.60383)	(8.88970)
Δ(INTEREST_ASSET)	-	-0.140947	2.5275	-0.125468	2.720489	-0.23954	2.854671
		(3.39818)	(4.76306)	(3.42181)	(4.86181)	(3.39451)	(4.79277)
Δ(INTEREST_ASSET(1))	-	-5.631041	-5.011904	-6.091793	-5.353202	-6.165361	-5.6445
		(4.86037)	(6.68412)	(4.94077)	(6.67416)	(4.93277)	(6.70036)
Δ(NET_ASSET/NET_ASSET	-	-0.640823***	-0.534373***	-0.646981***	-0.537088***	-0.638833***	-0.533813***
		(0.14659)	(0.16768)	(0.14705)	(0.16755)	(0.14665)	(0.16730)
Δ(NET_ASSET(1))/NET_ASSET	-	0.061019	0.043276	0.061542	0.044112	0.061592	0.04397
		(0.03858)	(0.03161)	(0.03789)	(0.03201)	(0.03909)	(0.03209)
XCASH	-	-0.054531*	-0.029669	-0.106514	0.057116	-0.041979	-0.012831
		(0.02973)	(0.06098)	(0.04146)	(0.10285)	(0.03348)	(0.06338)
[x]	-	-2.759219**	-3.594426	-0.47034	0.142767	0.537221	0.754808
		(1.36900)	(2.68327)	(0.22845)	(0.50297)	(0.35902)	(0.68904)
XCASH*[x]	-	0.877174	0.815968	0.244562	-0.302702	-0.035946	-0.155668
		(1.08293)	(2.98691)	(0.11375)	(0.43515)	(0.24301)	(0.49158)
NUM2003	0.182587***	-	-	-	-	-	-
	(0.04891)						
NUM2004	0.08273**	-	-	-	-	-	-
	(0.04707)						
NUM2005	0.286845***	-	-	-	-	-	-
	(0.04853)						
NUM2006	0.60808***	-	-	-	-	-	-
	(0.05456)						
NUM2007	0.668296***	-	-	-	-	-	-
	(0.05472)						
NUM2008	0.032614	-	-	-	-	-	-
	(0.04269)						
NUM2009	1.000372***	-	-	-	-	-	-
	(0.07585)						
C	0.681265	0.912912***	0.844692***	0.997762***	0.764846***	0.844***	0.753194***
	(0.03747)	(0.05888)	(0.11226)	(0.07189)	(0.15821)	(0.06106)	(0.11414)
R-squared	0.476375	0.610618	0.706039	0.610738	0.705442	0.61026	0.70574
Adjusted R-squared	0.398295	0.525353	0.553586	0.5255	0.55268	0.524916	0.553133
Sample Size	9788	6759	3509	6759	3509	6759	3509

Note: *** indicates 1% significant level; ** indicates 5% significant level; * indicates 10% significant level. Numbers in () are standard deviations of coefficients. Capital structure variables have two subsets, the left one have constraints of Net Asset>0 ; The right one have constraints of Net Asset>0 and Xcash>0. Each regression contains White's heteroscedasticity consistent standard errors

From column two to column four, each variable has two subsets; the left subset has net asset > 0 , the right subset has net assets > 0 and Xcash > 0 . Xcash is the excess cash ratio and is the residual value from the first regression equation of Model One. Because the dependent variable - cash ratio is a natural logarithm, the residual value - Xcash of regression is also a natural logarithm. When Xcash > 0 , companies who have excess cash ratio > 1 will be kept in the regression model; companies with Xcash < 0 will be eliminated. While including individual capital structure variables into the regression, only the manager's shareholdings are significant at Net Asset > 0 ; p-value is at 5% significant level with a coefficient of -2.759219. The p-value of excess cash ratio (Xcash) is at 10% significant level with a coefficient of -0.054531. The adjusted R-square for this regression (Column 2 – left) is 0.525353.

Other significant variables in this regression are: operating profits are positively related to the ratio of market to book value at 1% significant level with coefficients around 3.2 for all three different capital structure variables. Dividend payout ratios are significant at Net Assets > 0 , and are positively related with the ratio of market to book value for a coefficient around 0.037. The changes of dividend payout ratio (the difference between current to the base year) are related at p-value of 5% and coefficients are between -0.027 to -0.032. This indicates that the greater the difference between the current and the base years' payout ratio, the more it would negatively impact the ratios of corporations' market value to book value. Comparing the difference between next period's payout ratio with current payout ratio using samples with Net Asset > 0 shows that the p-values are at 5% significant level with positive coefficients. This indicates that the ratio of market value to book value is positively impacted by current dividend payout ratio. If the greater the difference between current payout ratio and the base year's, the ratio of market value to book value would be negatively impacted. However, if the difference between next period's and the current payout ratios are larger, the ratio of market value to book value would be positively impacted. Interest expense ratios are negatively related at p-value of 5% significant level, if Net Asset > 0 . The growth of net assets is negatively related at p-value of 5% significant level with negative coefficients. The adjusted R-Square for Model two are from 0.52 to 0.55.

3.2.3. Model Three – Taiwan data regression analysis results

The dependent variable of Model Three is the growth rate of market value. The first column of Table 3 is the yearly effect, and it shows that 2005 and 2008 have positive relationship with the growth rate of market value at 1% significant level. The other years are negatively related at 1% significant level. The adjusted R-square is 0.360415. Again, each column from column two to column four has two subsets. The constraints of the left subset are $ME(t-1) \& ME(t) > 0$; the constraints of the right subset are $ME(t-1) \& ME(t) > 0$ and Xcash > 0 . Xcash is the residual value of excess cash ratios from the first regression of Model One.

Table 3: Model Three Regression: The Growth Rate of Market Value

Independent Variables	Yearly Effect	Managers Shareholdings [x]	Boad Members Shareholdings [x]	Foreign Shareholdings [x]			
XCASH-XCASH(t-1)	-	-0.102093*	-0.167766*	-0.106729	-0.337089***	-0.091057*	-0.182706**
		(0.05267)	(0.08694)	(0.09227)	(0.12056)	(0.05492)	(0.09190)
Δ (EARNING)/ME	-	0.113908	0.036257	0.111984	0.029323	0.112727	0.037884
		(0.08928)	(0.08472)	(0.08957)	(0.08216)	(0.08929)	(0.08521)
Δ (NET_ASSET)/ME	-	-0.072931	-0.023587	-0.071389	-0.0165	-0.072338	-0.022746
		(0.05953)	(0.01705)	(0.06036)	(0.01764)	(0.05953)	(0.01724)
Δ (INTEREST_ASSET)/ME	-	0.086427*	0.062239***	0.08563*	0.059734***	0.086563**	0.062584***
		(0.04537)	(0.02229)	(0.04571)	(0.02293)	(0.04534)	(0.02245)
Δ (SHAREHOLDERS)	-	-0.001063***	-0.008342	-0.001054***	-0.004194	-0.00109***	-0.008141
		(0.00031)	(0.01513)	(0.00032)	(0.01476)	(0.00032)	(0.01517)
LEVERAGE	-	-0.144736	-0.244379	-0.147367	-0.270046	-0.151691	-0.256109
		(0.18958)	(0.21727)	(0.18951)	(0.21653)	(0.18906)	(0.21671)
NF/ME	-	0.00026	0.0000229	0.000253	-0.0000321	0.000258	0.0000159
		(0.00028)	(0.00018)	(0.00027)	(0.00018)	(0.00028)	(0.00018)
XCASH* Δ (XCASH)	-	0.000506	0.047316	0.00168	0.046119	0.001276	0.049092
		(0.02376)	(0.05024)	(0.02421)	(0.04038)	(0.02366)	(0.04823)
LEVERAGE* Δ (XCASH)	-	0.199733*	0.212577	0.202966*	0.224416	0.198379*	0.217437
		(0.11512)	(0.17488)	(0.11432)	(0.16658)	(0.11471)	(0.17568)
[x]* Δ (XCASH)	-	0.122002	-0.174607	0.024598	0.733974***	-0.103414	0.184555
		(0.55853)	(0.92720)	(0.27658)	(0.27753)	(0.17978)	(0.22650)
[x]	-	1.291458	3.275005	0.754975*	1.570738**	-0.703096***	-0.605504
		(1.16889)	(2.17830)	(0.39633)	(0.68755)	(0.22642)	(0.45946)
NUM2003	-0.376989***	-	-	-	-	-	-
	(0.03690)						
NUM2004	-0.20486***	-	-	-	-	-	-
	(0.03645)						
NUM2005	0.222417***	-	-	-	-	-	-
	(0.05753)						
NUM2006	-0.278247***	-	-	-	-	-	-
	(0.03578)						
NUM2007	-0.872961***	-	-	-	-	-	-
	(0.03256)						
NUM2008	1.209369***	-	-	-	-	-	-
	(0.05062)						
C	0.39904***	0.606436***	0.625724***	0.444705***	0.312187*	0.674718***	0.709739*
	(0.02650)	(0.08067)	(0.12407)	(0.12550)	(0.18801)	(0.08238)	(0.12339)
R-squared	0.466633	0.455506	0.677911	0.456212	0.682296	0.455987	0.677707
Adjusted R-squared	0.360415	0.339454	0.530261	0.34033	0.536655	0.340057	0.529963
Sample Size	7299	6797	3666	6798	3666	6798	3666

Note: ***indicates 1% significant level; **indicates 5% significant level; *indicates 10% significant level. Numbers in () are the standard deviations of coefficients.

Each capital structure variable has two subsets. The left one contains the constraints of $ME(t-1) \& ME(t) > 0$; The right one contains constraints of $ME(t-1) \& ME(t) > 0$ and $Xcash > 0$. Each regression includes White's heteroscedasticity consistent standard errors.

Table 3 also shows the regression results of three capital structure variables with respect to the growth rate of market value. The shareholdings of board members are at 10% significant level if $ME(t-1) \& ME(t) > 0$; it is at 5% significant level if $ME(t-1) > 0$, $ME(t) > 0$ and $Xcash > 0$. The interactive item of the board members and the change of excess cash ($[x] * \Delta(Xcash)$) is significant at 1% level with positive coefficient. This indicates that the greater the board members shareholdings, the stronger the supervising powers, the better corporate performance, and thus better to promote the corporation's market value. The positive impact would be released by the excess cash holdings. The impact of foreign shareholdings in this study is negative. In corporations with $ME(t-1) \& ME(t) > 0$, the greater the foreign ownership, the lower the growth rate of market value is at 1% significant level. Foreign investors in Taiwan normally buy and sell huge amounts of securities in short term for profits; they do not intend to hold securities for long-term capital gains. This behavior indicates that the higher the foreign shareholdings are, the lower the growth of market value is.

The regression analysis of other variables in Model Three are: Excess cash has a negative impact to the growth of market value; interest rate changes have a positive impact on the growth of market value. Under $ME(t-1) \& ME(t) > 0$, the changes of payout ratios have negative impacts on the growth of market value. Under $ME(t-1) \& ME(t) > 0$, the interactive item of leverage and the excess cash ($LEVERAGE * \Delta(Xcash)$) has a positive impact on the growth of market value. The adjusted R-Squared is from 0.33 to 0.53 for Model Three.

3.2.4. Model One – China data regression analysis results

Table 4 shows the regression results of cash holding ratio and capital structure variables. The adjusted R-Square is 0.529784 for the yearly effects. The p-values of yearly effects of 2003, 2006 and 2007 are significantly less than 1%; p-value of yearly effect of 2005 is significantly less than 10%. The impact of yearly effect of 2003 is negative; the impacts of yearly effects of 2005, 2006 and 2007 are positive. This implies the cash ratio declined in 2003, but increased from 2005 to 2007.

Table 4: Model One Regression: Cash Ratio – China data

Independent Variables	Yearly Effects	[1]	[2]	[3]	State Shares $x_j(1)$	Foreign Shares $x_j(2)$	Common
SIZE	-	0.168782*** (0.031569)	0.142167*** (0.031396)	0.156495*** (0.031481)	0.121813*** (0.037053)	0.11962*** (0.038117)	0.126199*** (0.039536)
MTB	-	0.000353 (0.000732)	0.00035 (0.000724)	0.000347 (0.000727)	-0.000795 (0.001391)	0.000643 (0.000925)	-0.000792 (0.001417)
CF	-	0.111528 (0.076028)	0.122927* (0.073493)	0.131326* (0.075065)	0.636644*** (0.119991)	0.64025*** (0.122101)	0.617761*** (0.124073)
NWC	-	-0.049507* (0.028664)	-0.114558*** (0.042451)	-0.118693*** (0.043566)	-0.542618*** (0.090355)	-0.54822*** (0.091768)	-0.529404*** (0.093626)
LEVERAGE	-	-	-0.060119** (0.028101)	-0.060757** (0.028577)	-0.291044*** (0.047301)	-0.293815*** (0.047912)	-0.284787*** (0.048991)
CAPEX	-	-	-1.016427*** (0.146601)	-1.089849*** (0.147029)	-1.016418*** (0.180002)	-1.048577*** (0.182467)	-1.080155*** (0.187244)
DIVIDUM	-	-	0.184018*** (0.020033)	-	0.191077*** (0.026631)	0.188975*** (0.026539)	0.193928*** (0.028156)
SHAREHOLDERS	-	-	-	0.000545 (0.000367)	-	-	-
$x_j(1)$	-	-	-	-	-0.023369 (0.082367)	-	0.28726 (0.267901)
$x_j(2)$	-	-	-	-	-	0.419241* (0.226247)	-0.004804 (0.085821)
NUM2003	-0.665663*** (0.175764)	-	-	-	-	-	-
NUM2004	0.581641 (0.483166)	-	-	-	-	-	-
NUM2005	0.870202* (0.497321)	-	-	-	-	-	-
NUM2006	1.606334*** (0.581228)	-	-	-	-	-	-
NUM2007	1.871005*** (0.605622)	-	-	-	-	-	-
NUM2008	0.832288 (0.760437)	-	-	-	-	-	-
NUM2009	-0.66442* (0.781435)	-	-	-	-	-	-
C	-2.515245*** (0.458207)	-3.608486*** (0.311563)	-3.50038*** (0.308633)	-3.546974*** (0.310296)	-3.166096*** (0.363062)	-3.169047*** (0.376406)	-3.240558*** (0.388457)
R-squared	0.597779	0.674793	0.682229	0.680775	0.70409	0.704323	0.704333
Adjusted R-squared	0.529784	0.611491	0.620086	0.618052	0.602282	0.602728	0.59556
Sample Size	12096	9655	9636	9598	6146	6152	5820

Note: *** indicates 1% significant level; ** indicates 5% significant level; * indicates 10% significant level. Numbers in () are the standard deviations of coefficients. Each regression includes White's heteroscedasticity consistent standard errors.

Column two of Table 4 includes the following variables in the regression model: company size (SIZE), company market to book value (MTB), cash flow ratio (CF), and net operating working capital (NWC). The residual value of operating expenses is the excess cash ratio. Column three and column four include the variables of dividend dummy variable and dividend payout ratio in the regression.

The results indicate that using dividend dummy variable (DIVDUM) is significant at 1% level and positively related to the cash ratio, the same as Taiwan's result (Table 1).

Column five to column seven of Table 1 is testing the relationship of capital structures and the cash ratio. The results indicate only foreign shareholdings is significant at 10% level with coefficient of 0.419241. This implies that if foreign shareholding increases one unit, the cash ratio would increase by 0.419241 units. The results of Model One of China data are the same as Taiwan, only the foreign shareholdings has a positive relationship with cash ratio, while the state shareholdings has no impact. If we merge both capital structure variables, the state and the foreign shareholdings into the regression, there will not be relations. The adjusted R-squared for Model One by using China data is from 0.59 to 0.62.

3.2.5. Model 2 – China data regression analysis results

Table 5 shows the regression results of Model Two by using China data. The only significant yearly effect is in 2009 at 10% level, other years are not significant. Column two and three are divided into two subsets, the left subset contains the constraints of Net Assets > 0; the right subset contains the constraints of Net Assets > 0 and Xcash > 0. Xcash is the residual values of Model One, the excess cash ratio. The results of Model Two indicate that foreign shareholdings under Net Asset > 0 have a positive coefficient of 1.129183 at 10% significant level. Excess cash ratio (XCASH) is significant at 1% level under the constraints of Net Asset > 0 with coefficient of 0.276283 (state shareholdings) and 0.308242 (foreign shareholdings). The adjusted R-squared is from 0.75 to 0.82.

Table 5: Model Two Regression - Market value to book value of net assets – China data

Independent Variables	Yearly Effects	State Shareholdings[x]		Foreign shareholdings[x]	
EARNING_ASSETS	-	1.642513***	1.635334	1.679117***	1.946511
		(0.529853)	(1.609810)	(0.516527)	(1.683226)
Δ (EARNING_ASSETS)	-	-0.349455	0.143253	-0.301221	0.079187
		(0.278879)	(0.191084)	(0.260429)	(0.139154)
Δ (EARNING_ASSETS(1))	-	0.380013**	0.866376	0.432357**	0.896602
		(0.185884)	(0.591947)	(0.194862)	(0.590685)
SHAREHOLDERS	-	0.043032***	0.028989	0.042037**	0.050343***
		(0.017701)	(0.025291)	(0.017749)	(0.012232)
Δ (SHAREHOLDERS)	-	-0.000271	0.000304	-0.000251	0.000498
		(0.000772)	(0.000967)	(0.000776)	(0.000646)
Δ (SHAREHOLDERS(1))	-	0.042684**	0.030008	0.041693**	0.05129***
		(0.017608)	(0.025380)	(0.017664)	(0.012297)
INTEREST_ASSET	-	6.807133	-7.490507	7.759104*	-4.435469
		(4.224837)	(9.836283)	(4.504833)	(9.722631)
Δ (INTEREST_ASSET)	-	-4.915367	-4.601277	-6.882175	-2.370157
		(4.905607)	(5.442953)	(5.237388)	(5.217974)
Δ (INTEREST_ASSET(1))	-	-3.385649	-2.638893	-3.359388	-6.416357
		(2.287383)	(7.931048)	(2.380945)	(11.419060)
Δ (NET_ASSET)/NET_ASSET	-	-0.725212***	-0.594609	-0.743662***	-0.552125
		(0.161490)	(0.383447)	(0.168774)	(0.423731)
Δ (NET_ASSET(1))/NET_ASSET	-	0.252013***	0.17264*	0.241935***	0.14962
		(0.073163)	(0.094838)	(0.076377)	(0.107935)
XCASH	-	0.276283***	0.62255	0.308242***	0.537511
		(0.104294)	(0.530868)	(0.057536)	(0.374221)
[x]	-	0.358453	0.619534	1.129183*	0.383521
		(0.252182)	(0.817719)	(0.648308)	(1.407146)
XCASH*[x]	-	0.004697	-0.639875	-0.589224	-2.401696
		(0.224270)	(0.935521)	(0.501806)	(3.180367)
NUM2003	-0.457745	-	-	-	-
	(0.599452)				
NUM2004	0.149581	-	-	-	-
	(0.861588)				
NUM2005	0.13356	-	-	-	-
	(1.142604)				
NUM2006	0.169497	-	-	-	-
	(1.170957)				
NUM2007	0.374074	-	-	-	-
	(1.188008)				
NUM2008	-1.100161	-	-	-	-
	(1.954297)				
NUM2009	-3.525837*	-	-	-	-
	(1.984257)				
C	16.43107	1.224927***	1.378293***	1.393068***	1.563631***
	(10.491110)	(0.116507)	(0.284999)	(0.091025)	(0.192171)
R-squared	0.499944	0.874711	0.947672	0.867486	0.947947
Adjusted R-squared	0.403272	0.770872	0.816354	0.758592	0.825751
Sample Size	9686	3024	1475	3016	1494

Note: *** indicates 1% significant level; ** indicates 5% significant level; * indicates 10% significant level. Numbers in () are standard deviations of coefficients. Capital structure variables have two subsets, the left one have constraints of Net Asset>0 ; The right one have constraints of Net Asset>0 and Xcash>0. Each regression contains White's heteroscedasticity consistent standard errors

The capital structure variables in Table 5 are different from Table 2. Taiwan data regression results show that managers shareholdings with constraints of Net Asset > 0 have a negative (-0.054531) relationship with the ratio of market to book value. China data regression results show positive relationships of state shareholdings and foreign share holdings (0.0276283 & 0.308242 respectively). The possible explanation is that Mainland Chinese investors neither prioritize the efficiency of utilization of excess cash management, nor do they concern about the basic analysis. Instead, they just follow others. Therefore, the bubble effect of high price-earnings ratio in China is more serious than it is in Taiwan. Foreign shareholdings in Taiwan are not significant, but China data shows a positive and significant relationship with the ratio of market to book value. Referring to the results of Model Three, the possible explanation is “hot money get into Mainland Chinese stock market.” From Model Three, foreign shareholders do not have significant impact, only the interactive item of foreign shareholdings and excess cash is significant and positively related to the growth rate of market value. This implies that foreign hot money pours into the Mainland Chinese stock market and raises the market value; however, it does not help the future development of companies.

The results of other variables in Model Two indicate that when Net Asset > 0, with p-value at 1 % significant level are: current operating profits with coefficient of 1.67, dividend payout ratio with coefficient of 0.042. When Net Asset > 0, the changes of dividend payout ratio (the difference between next period's and current period's payout ratio) will have a positive impact of p-value at 5% significant level. This implies that if companies distribute dividends, they would increase the growth rate of market value. When Net Asset > 0, the growth rates of net assets have p-values of 1% significant level with negative coefficients of -0.725212 and -0.743662. The adjusted R-squared for Model Two is from 0.75 to 0.82.

3.2.6. Model Three – China data regression analysis results

Table 6 shows the regression results from Model Three regression, the dependent variable is the growth of market value. The first column is the yearly effect. Only year 2003 is not significant, from 2004 to 2008. Each yearly effect is positively related with 1% significant level. The coefficient is increasing each year from 1.76 to 7.61. The R-squared is 0.094435.

Table 6: Model Three Regression - The Growth Rate of Market Value – China data

Independent Variables	Yearly Effects	State Shareholdings [x]		Foreign Shareholdings [x]	
XCASH-XCASH(t-1)	-	0.079132***	0.094221	0.064911***	-0.023154
		(0.024393)	(0.057736)	(0.018017)	(0.066739)
Δ (EARNING)/ME	-	0.014276***	0.036715	0.0141***	0.04365*
		(0.005188)	(0.025144)	(0.005382)	(0.025803)
Δ (NET_ASSET)/ME	-	0.00382	0.024515*	0.003679	0.020897
		(0.006875)	(0.013630)	(0.007549)	(0.018838)
Δ (INTEREST_ASSET)/ME	-	0.007934***	0.009559*	0.008***	-0.001794
		(0.002352)	(0.005575)	(0.002577)	(0.008940)
Δ (SHAREHOLDERS)	-	0.0000235	0.0000674	0.000022	-0.0000142
		(0.000074)	(0.000212)	(0.000075)	(0.000158)
LEVERAGE	-	0.035978	-0.009113	0.077128	0.168834
		(0.044430)	(0.157333)	(0.062086)	(0.211670)
NF/ME	-	-0.012719	-0.045798**	-0.012084	-0.036161*
		(0.008941)	(0.020074)	(0.009429)	(0.019044)
XCASH* Δ (XCASH)	-	0.033942*	0.132059	0.039559**	0.165896*
		(0.018719)	(0.086280)	(0.017184)	(0.091413)
LEVERAGE* Δ (XCASH)	-	-0.013141	-0.074722*	-0.021502	-0.102871**
		(0.009863)	(0.038597)	(0.013462)	(0.052230)
[x]* Δ (XCASH)	-	-0.071098	-0.386807**	-0.011507	1.116603*
		(0.066178)	(0.159193)	(0.218479)	(0.638415)
[x]	-	-0.016416	0.190927	-0.302474	-0.420423
		(0.100515)	(0.258043)	(0.314038)	(0.638577)
NUM2003	0.685023	-	-	-	-
	(0.470069)				
NUM2004	1.763275***	-	-	-	-
	(0.636292)				
NUM2005	3.533589***	-	-	-	-
	(0.636292)				
NUM2006	3.971841***	-	-	-	-
	(0.744210)				
NUM2007	4.909552***	-	-	-	-
	(0.814459)				
NUM2008	7.614954***	-	-	-	-
	(1.648013)				
C	-2.544966***	0.113977***	0.124406***	0.176464***	0.140267
	(0.538969)	(0.040950)	(0.131358)	(0.041850)	(0.138113)
R-squared	0.094435	0.818043	0.88842	0.76676	0.794656
Adjusted R-squared	-0.116591	0.713067	0.718908	0.632493	0.502298
Sample Size	7795	3773	1772	3781	1797

Note: ***indicates 1% significant level; **indicates 5% significant level; *indicates 10% significant level. Numbers in () are the standard deviations of coefficients. Each capital structure variable has two subsets.

The left one contains the constraints of $ME(t-1) \& ME(t) > 0$; The right one contains constraints of $ME(t-1) \& ME(t) > 0$ and $X_{cash} > 0$. Each regression includes White's heteroscedasticity consistent standard errors

Column two and three are divided into two subsets. The left subset contains constraints of $ME(t-1) \& ME(t) > 0$; the right subset contains constraints of $ME(t-1) \& ME(t) > 0$ and $XCASH > 0$. $XCASH$ is the excess cash ratio, and is the residual values from Model One Regression. The capital structure $[x]$ is not significant; only the interactive item of capital structure and excess cash ($[x] * \Delta(XCASH)$) under $ME(t-1) \& ME(t) > 0$ and $XCASH > 0$ are significant. The coefficient is -0.386807 for the state shareholdings at 1% significant level, and the coefficient is 1.116603 for the foreign shareholdings at 10% significant level.

Other variables in the model show that the change of excess cash ($XCASH - XCASH(t-1)$) is positively related to the growth of market value at 1% significant level. The interest change ratio also has a positive relationship at 1% significant level. The interactive item of leverage and excess cash ($leverage * \Delta(XCASH)$) is negatively related to the growth rate of market value. The adjusted R-squared is from 0.50 to 0.72.

4. Conclusion

From the regression analysis of Model One, the managers' shareholdings do not have a significant relationship with cash holdings ratios; therefore, the findings do not support H1 - Considering risk factors and self-interest, the managers' ownership is positively correlated with the firms' cash holdings; increases in managers' ownership are linked to increases in the cash ratio. Compared to the proposition of Jensen & Ruback (1983)—the conflict of interest hypothesized that the higher the managers' shareholdings, the worse the corporate performance, which also cannot be supported by this study's analysis. From the Taiwan data, managers' shareholdings and board members' shareholdings do not correlate with cash holdings. This result also does not support H2. (H2 - The board members' ownership is negatively correlated to cash ratio; greater ownership of board members enhances supervision over managers, leading to better utilization of idle cash.)

From regression analysis of Model Two, only the manager's shareholdings are significant when Net Asset > 0 at 5% significant level. Operating profits are positively related to the ratio of market to book value at 1% significant level, coefficients are around 3.2 with all three different capital structure variables.

H3 is supported by the analysis results from Model One, which indicate that the foreign investor's shareholdings have a positive relationship at the 5% significant level. The results support H3 which indicate that only foreign shareholdings have a positive relationship with cash holdings at 5% significant level. H3 is also supported when we merge all three capital structure variables into the regression Model One, information disclosure quality is better with more foreign investor shareholdings. (H3 - The shareholdings of foreign investors have a positive relationship to idle cash; information disclosure quality is better with more foreign investor shareholdings.)

The foreign shareholdings of Taiwanese data in Model Three indicate a negative relationship at the 1% level with the growth rate of market value. The foreign shareholdings of China data in Model Two indicate a positive relationship with the ratio of market value to book value of net assets at 10% significant level. These results indicate that foreign shareholdings have different impacts on Taiwanese and Mainland Chinese stock markets. Relatively speaking, foreign investor's hot money would get into the Mainland Chinese stock market more often than the Taiwanese stock market, thus greatly impacting the Mainland Chinese stock market. However, these effects indicate that foreign shareholdings have a negative impact on the growth rate of market value. The negative coefficients from Model Three indicate that the foreign shareholdings have a negative impact on the corporation performance and manager's decision making in the long term.

H4—the relationship of institutional shareholdings and cash ratio is positive, especially the national government shareholdings in China—is not supported by the regression results of China data in Model One, Two and Three, which indicate that the state shareholdings are not significant. The results can not imply that the excess cash is related to the national government shareholdings. In Model Three, the interactive item of the state shareholdings and excess cash indicate a significant negative impact. This model implies that the supervising power of government shareholdings in Taiwan is better than it is in China.

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