Asian Journal of Economics and Finance. **2019**, 1, 1-2

ARF INDIA
Academic Open Access Publishing
www.arfjournals.com

Corporate Governance, Investment Opportunities and Cash Holdings for SEO Firms: A Test of the Shareholder Power Hypothesis

Yu-Chun Wang, Chung-Jung Lee* and Kuo-Cheng Huang

*Department of Finance, Ming Chuang University (Email: *cjlee@mail.mcu.edu.tw)*
Received: 15 October 2018; Revised: 7 December 2018; Accepted 20 January 2019; Publication: 15 May 2019

Abstract: The shareholder power hypothesis suggests that investors will allow managers who are more effectively under shareholders' control to stockpile excess cash. However, little is known about how shareholders' assessment about the governance practices of a firm that consequently determines the levels of cash holdings. We study the cash holdings of SEO firms, in which shareholders play a substantial role in fulfilling the financing needs and adjusting the capital structure. Using a sample of Taiwanese publicly-traded firms, we find that cash holdings for SEO firms increase with the number of independent directors and institutional ownership, and decrease with the pledged shares of the board for bank loans. Our corporate governance index also has a positive and significant relationship with cash holdings of SEO firms. Furthermore, we document a second-order effect of corporate governance and investment opportunities (proxied by market-to-book ratio) on cash holdings by showing that SEO firms with weak governance along with poor investment opportunities have lower cash holdings than do other SEO firms. In particular, this phenomenon is more pronounced in firms without paying dividends, which investors might consider as with few incentives to reduce free cash flow. Overall, our findings support the argument of the shareholder power hypothesis.

Keywords: Cash holdings, Seasoned equity offerings (SEOs), Corporate governance, Shareholder power hypothesis, Investment opportunities

JEL classification: G34, G32

1. Introduction

The prediction of pecking order model suggests that equity is issued only under duress, or when investment so far exceeds earnings that financing with debt would produce excessive leverage (Myers, 1984). However, Fama and French (2005) provide abundant evidence showing that the issues of equity are large and commonplace, implying that such financing activities are not constrained by the asymmetric information problem indicated by Myers and Majluf (1984). Since the asymmetric information problem in corporate financing remains so that the costs of issuing equity is usually higher than those of internal funds and debt financing, investors may be concerned about the possibility of improper use of seasoned equity offerings (SEO) proceeds.

The shareholder power hypothesis suggests that investors will allow managers who are more effectively under shareholders' control to stockpile excess cash. In other words, investors may expect SEO firms with better governance more likely to issue for precautionary motives because the

managers' interests tend to be aligned with theirs. A number of studies argue that the higher need for cash is associated with precautionary motives of a corporate business (Opler *et al*., 1999; Mikkelson and Partch, 2003; Almeida *et al*., 2004; Acharya *et al*., 2007; Han and Qiu, 2007; Haushalter *et al*., 2007, Harford *et al*., 2008; Bates *et al*., 2009; McLean, 2011). Specifically, if an SEO firm is to meet the demand for funds in the future, managers would choose to stockpile the cash from stockholders after stock offering to save for rainy days. Higher strength of issuers' governance may enhance investor confidence in SEOs. Investors are more willing to provide capital to firms with effective corporate governance for potential investment opportunities, which leads to higher cash holdings in these firms (Chen and Chuang, 2009).

By contrast, investors might also concern about the agency costs of managerial discretion that managers in poorly-governed firms have higher incentives to engage in moral hazard activities (Jensen and Meckling, 1976), such as transferring excess cash into private interests or investing in negative net present value (NPV) projects when holding excess cash (Jensen, 1986; Stulz, 1990; Dittmar and Mahrt-Smith, 2007). Participating in SEOs of these firms would suffer from expropriation for minority shareholders. As a result, investors would decline the SEO once they do not find enough shareholder protection in a firm, leading to lower cash holdings. Thus, the relationship between governance mechanism and cash holdings should be different for SEO firms and is critical for external investors.

In this context, investors' expectation about the possibility of misuse of SEO proceeds may be associated with the mechanisms of issuers' governance. However, little attention has been paid on how governance mechanism affects cash holdings in SEO firms, in which shareholders play a substantial role in fulfilling the financing needs and adjusting the capital structure. This paper examines the relationship between corporate governance and cash holdings in SEO firms using a sample of Taiwanese publicly-traded companies.

In addition, this study contends that the relationship between firm-level corporate governance and cash holdings for SEO firms may be correlated to their investment opportunities. Previous studies have shown that firms with valuable investment opportunities have a strong incentive to hold more cash to mitigate the possibility of having to forego high-return projects due to short of funds (Opler *et al*., 1999; Ozkan and Ozkan, 2004; Harford *et al*., 2008). Investors, who are wary of the high cost of raising additional external funds, are also inclined to allow a firm with strong growth opportunities to hold greater amount of cash, enabling to rapidly preempt new profitable projects. Moreover, agency costs of managerial discretion are higher for firms with a low market-to-book ratio than for those with high market-to-book ratios, as argued in Stulz (1990); thus, investors might not allow low market-to-book firms with entrenched management to have high cash holdings. Thus, investors may determine whether they should participate in SEOs

based on the interrelations of corporate governance and investment opportunities.

In an emerging market such as Taiwan, which features family-controlled firms and directors participating in management (Kuan *et al*., 2011), dominant insiders are more likely to take risks in entities where their cash flow rights are low and then siphon out proceeds to entities where their cash flow rights are high. In addition, Taiwan's stock market is composed of high-tech firms, of which the announcement effect of SEOs is positively affected by investment opportunities (Chen *et al*., 2001). Such environment provides a suitable setting for us to empirically examine the issue about corporate governance and invesetment opportunities.

Consistent with the shareholder power hypothesis, the evidence shows that cash holdings of SEO firms increase with the number of independent directors and institutional ownership, and decrease with the pledge ratio (shares pledged by the directors for bank loans). We also construct a corporate governance index based on four governance variables (the above three variables along with controlling shareholders' separation of cash flow rights from voting rights) and find a positive relationship between corporate governance and cash holdings for SEO firms. Furthermore, SEO firms with weak governance and poor investment opportunities (proxied by market-to-book ratio) have lower cash holdings than do the other SEO firms. In particular, this phenomenon is more pronounced in firms without paying dividends, suggesting that investors would not allow SEO firms with weak governance, poor investment opportunities, and low dividend payout to hoard high level of cash due to the free cash flow concerns. These results are supportive of the view that the relationship between corporate governance and cash holdings are associated with investment opportunities.

The rest of this paper is organized into several sections. Section 2 reviews related literature and develops the empirical hypothesis. In Section 3 we describe the research design, variables and data employed in this study. Section 4 presents the empirical results. The final section summarizes the findings and concludes.

2. Literature Review and Hypotheses Development

2.1. Corporate Governance and Cash Holdings in SEO firms

Theoretically, firms hold cash primarily for two reasons (Keynes, 1936). First, firms can directly use cash to make payments without having to liquidating assets with large transaction costs. Second, and possibly more important in modern corporate finance, the cash holdings for precautionary motive are to hedge for the risk of cash shortage in the future. Several studies have been made on the inclination of a company to increase the level of cash holdings; consequently, it is found that precautionary motivation induces a firm to hold

excessive cash at hand. How the precautionary motivation is called here mainly refers to the investing chance and high volatility of cash flow. Once investing chance coincides with cash shortfalls, a company has to forego the investment opportunity. For example, Myers and Majluf (1984) argue that raising external financing is more costly than using internally generated funds in the presence of asymmetric information and that it may be optimal for firms to hold a certain level of cash to meet the need for investment expenditures.

In literature, the flexibility and shareholder power hypotheses can both explain the precautionary motive of managers for holding high level of cash, yet with different predictions about the corporate governance variables on cash holdings. The flexibility hypothesis suggests that, for self-interested managers, flexibility outweighs overinvestment due to the disadvantage of costly access to capital markets arising from information asymmetry (Myers and Majluf, 1984) and possible market discipline against managerial discretion (Jensen, 1986; Stulz, 1990). They prefer to retain more cash reserves rather than to invest it all for buffering against adverse cash flows.[1]

For example, Dittmar *et al*. (2003) provide international evidence indicating that firms in countries with less investor protection tend to hold more cash, suggesting that shareholders cannot force managers to return excess cash to them. Kusnadi (2011) examines the relationships between firm-level corporate governance mechanisms and cash holdings in Singapore and Malaysia, and the results show that firms with less effective governance attributes are more inclined to accumulate cash than those with more effective governance. In addition, some evidence documents that the value of cash holdings are lower for firms with poor governance (Dittmar and Mahrt-Smith, 2007; Frésard and Salva, 2010)[2] or when external shareholder protection is weak (Kalcheva and Lins, 2007), demonstrating that such high cash holdings are probably the free cash flow problem.[3] Thus the flexibility hypothesis predicts that firms with less effective governance hold greater cash reserves.

On the other hand, the shareholder power hypothesis suggests that investors will allow managers who are more effectively under their control to stockpile excess cash to avoid giving up positive NPV projects due to cash shortfalls. When the problem of information asymmetry is not severe, shareholders have lower incentives to limit the cash at manager's disposal (Jensen, 1986; Stulz, 1990). Thus, the shareholders power hypothesis predicts that firms with effective governance will hold more cash reserves.[4]

The relationship between governance mechanisms and cash policy has been widely discussed in previous research. However, there is limited evidence on the aforementioned relationship for firms that engage in SEOs. This paper attempts to mitigate this gap and explores the factors affecting the aforementioned relationship. McLaughlin *et al*. (1996) report a decline in profitability for SEO firms that have problems of high free cash flow. Lee (1997) finds that underperformance after SEOs is mostly confined to the firms where

the proceeds are at the discretion of management, and there is much less underperformance in firms where the proceeds go to the selling secondary shares previously held by existing shareholders. Lee suggests that increased free cash flow problems after SEOs are important in explaining the underperformance of issuing firms. These findings imply that a number of SEO firms with self-interest managers undergo an overinvestment problem. Hence, once corporate governance mechanisms of SEO firms do not provide protection for external investors, the proceeds for SEOs could be abused by managers.

When determining the optimal cash levels, the ability to obtain external funds is less of a concern for SEO firms because these firms have shown their ability to conduct the new issue of equity. Therefore, firms with weak governance mechanism may not hoard high levels of cash for flexibility motive. Instead, through the process of equity issues, shareholders can choose whether to participate in the SEO to determine the levels of cash reserves. When investors believe that they have more effective control of the managers, they are more willing to allow managers to maintain sufficient financial slack. Hence, the main objective of this article is to test the shareholder power hypothesis for SEO firms.

2.2. *Corporate Governance, Cash Holdings, and Investment Opportunities in SEO firms*

Investment opportunities also play a role in determining the levels of cash that investors want a firm to hold. One would expect firms with valuable investment opportunities to hold more liquid assets, since the cost of being short of funds is higher. Even for SEO firms, for which outside funds are not prohibitive, investors are more inclined to provide funds to firms with better investment opportunities.

Furthermore, Hutchinson and Gul (2004) show that the interaction of investment opportunity set and corporate governance has positive effect on firm performance. Brailsford and Yeoh (2004) show that firms with poor investment opportunities and high free cash flow exhibit strongest agency problems when announcing capital expenditures. Such findings imply that investors would simultaneously take into account investment opportunities and governance practices when evaluating corporate financing. For example, agency costs of managerial discretion are higher for low market-to-book firms than for high market-to-book firms, as argued in Stulz (1990); thus, investors might not allow low market-to-book firms with entrenched management to have high cash holdings. In addition, Jensen (1986) and Stulz (1990) develop the free cash flow hypothesis, predicting that shareholders will choose to limit managers' access to free cash flow to mitigate agency conflicts over its deployment. To the extent that that agency conflicts are harmful to shareholders' wealth as the governance mechanisms are not effective, investors may not consider it necessary for weakly-governed firms with poor investment opportunities to hold high cash for future needs. By preventing management

from hold high levels of cash, investors can avoid the potential expropriation from entrenched management. Therefore, the shareholder power hypothesis predicts lower cash holdings for SEO firms with poor investment opportunities and weak corporate governance than do other SEO firms.

3. Empirical Design, Variables and Data Description

3.1. Research Design

The main dependent variable is cash holdings measured as cash and cash equivalents divided by total non-cash assets. Following Guney *et al*. (2007) and Harford *et al*. (2008), we employ two-stage least square (2SLS) method to control for endogeneity problems. In the first stage, lagged corporate governance variables are regressed on lagged cash and other concerned variables. Then the fitted corporate governance variable is used as the instrumental variable in the second stage regression.

3.2. Measuring Corporate Governance

3.2.1. Stock Pledge

In Taiwan, the top executive of a company is the chairman of the board who is the legal representative of the company under the Company Act. As in the US, directors are responsible for monitoring the CEOs. Moreover, directors are also involved in policymaking and management of the company in Taiwan.[5] The decision to conduct an SEO is approved by the board of directors, and the characteristics of the board are relevant to how they dispose the SEO proceeds.

While it is usually difficult to evaluate the level of managerial entrenchment with anti-takeover index (Gompers *et al*., 2003) in non-US countries, the unique data of pledged shareholdings from Taiwan help to understand how the board entrench their voting rights in such an unfavorable way. The shares pledged for bank loan reflects the degree to which the executives do leverage, specifically in using less personal funds to fight for operating concessions. When operating concessions change hands due to variation in the structure of stock right, top managers could apply high leverage to buy more stocks and hold operating concessions.[6] Thus, a pledge on stocks is often considered a mechanism of management entrenchment. Moreover, to avoid drop in security price (the value of the pledge), they could engage in riskier operation, and further magnify the volatility of firm-value and worsen the agency problem between the executives concerned and minority stockholders (Chen and Hu, 2007). Some research has investigated the role of pledge on shares in corporate finance and presented empirical findings consistent with this argument. For example, Kao and Chiou (2002) find that the correlation between earning information and stock price decreases when the pledged shareholdings of the board increases. This means that the pledge on shares of boards induces the earning management and worsens the problem of the information asymmetry between management

executives and minority stockholders. Lee and Yeh (2004) find that pledge ratio is an essential attribute of firm-level governance to increase the probability of financial distress, to worsen the agency problem, or even to boost bankruptcy cost. Overall, extant literature shows the higher ratio of pledged shareholdings of the board is more inconsistent with the common interests between executives and minority stockholders.[7] The Company Act in Taiwan requires board of a listed firm to fully disclose its amounts of pledged shareholdings. This provides insight on the behavior of the board and allows investigation of how the divergence of interests between the board and external investors exhibits.[8] Thus, we adopt the data on the pledge ratio (pledged shareholdings divided by total shareholdings held by the board) to measure agency conflicts between external investors and the boards. Since the likelihood of managerial entrenchment increases with the pledge ratio, the shareholder power hypothesis, therefore, predicts a negative relationship between pledge ratio and cash holdings.

3.2.2. Board Independence

The second governance measure, board independence, is indicative of good corporate governance. In the finance literature, board independence is usually considered as one of the most important board quality measure. For example, outside-dominated boards are more likely to replace CEOs in response to poor performance (Weisbach, 1988) and to alleviate CEO over-compensation (Core *et al*., 1999). Thus, well governed firms are expected to have healthier board of directors who would monitor the executives for the proper use of cash. In this paper, board independence is the ratio of independent directors to the board size. Hence, based on shareholder power hypothesis, cash holdings for SEO firms are expected to be higher in firms with greater board independence.

3.2.3. Institutional Ownership

Institutional investors can force CEO turnover through activism, for example, by influencing the decision by the board of directors to oust the CEO, and by voicing their dissatisfaction over bad firm performance (Gillan and Starks, 2003; Aggarwal *et al*., 2011). Thus, institutional ownership usually represents the governance from outside investors. Bhojaraj and Sengupta (2003) determine that a higher institutional ownership and a larger fraction of the board composed of non-officers are associated with lower bond yields and higher credit ratings, suggesting that better governance practices could help to reduce costs of debt financing. Aggarwal *et al*. (2011) shows that changes in institutional ownership over time positively affect subsequent changes in firm-level governance and improvements in valuation. Thus, institutional ownership is expected to be positively associated with cash holdings for SEO firms.

3.2.4. Separation of Controlling Shareholders' Control Rights and Cash Flow Rights

Our last measure for corporate governance is the separation of controlling shareholders' cash flow rights from control rights (Separation), which is

defined as the difference between the voting rights and cash flow rights of controlling shareholders.[9] Separation represents the extent to which the controlling shareholder may expropriate minority shareholders (Claessens *et al*., 2000; Yeh and Woidtke, 2005). Concentrated ownerships may lead to another type of agency conflict problem: when large shareholders enjoy the power over designating and monitoring managers, they may become entrenched and pursue personal interests by expropriating minority shareholders. Therefore, we proxy this expropriating effect with the Separation variable. The expropriation effects are more severe as the separation ratio is high. In the sense that poorly governed firms tend to have managers who pursue personal interests by spending cash proceeds on risky projects at the expense of shareholders, the shareholder power hypothesis predicts that Separation is negatively with cash holdings for SEO firms.

3.2.5. Corporate Governance Index

To account for the firm-level governance practice as a whole, we also construct a corporate governance index based on the aforementioned four governance variables. We divide the sample into quartiles according to each of the governance variables and assign a value of four (one) if a firm is in the top (bottom) quartile of a governance variable when the higher value indicated better governance. Then we sum the four scores into a single index to proxy for corporate governance and then examine the role of this index in cash holdings for SEO firms.

3.3. Measuring Investment Opportunities

Following Smith and Watts (1992) and Jung *et al*. (1996), we use the market-to-book ratio, measured as firm market value (defined as the market value of equity plus the book value of total assets minus the book value of equity) divided by the book value of assets, as a proxy for investment opportunities. An increase in the number of profitable investment opportunities means that, if faced with a cash shortage, the firm has to give up positive NPV projects. Thus, high market-to-book firms are usually cash rich firms. Consistent with this notion, previous studies observed that investment opportunities are positively correlated to cash holdings (e.g., Opler *et al*., 1999; Guney *et al*., 2007; Harford *et al*., 2008).

3.4. Other Control Variables

Leverage is the ratio of total debt to total assets. Literature suggests that firms can use borrowing as an alternative for holding cash, and thus leverage can act as a proxy for the ability of firms to issue debt (John, 1993). It is also suggested that the cost of funds used to invest in liquidity increases with the ratio of debt financing (Baskin, 1987), which would imply a reduction in cash

holdings with increased debt in capital structure. A negative relationship between leverage and cash holdings in line with this contention is also empirically shown by prior research (Opler *et al*., 1999; Ozkan and Ozkan, 2004; Harford *et al*., 2008).

Size is the natural logarithm of total assets. Net Working Capital/Assets is the ratio of current assets net of cash minus current liabilities divided by total assets. It is reasonable to assume that the cost of converting non-cash liquid assets into cash is much lower as compared with other assets. Firms with sufficient liquid assets may not have to use the capital markets to raise funds when they have a shortage of cash. Thus, non-cash net working capital is expected to be negatively associated with cash holdings.

Cash Flow/Assets is measured as earnings after interest, dividend, and taxes, but before depreciation, divided by total assets. Cash Flow Volatility is the standard deviation of the cash flow ratio of the past five years. The greater the firm's cash flow variability, the greater the number of states of nature in which the firm will be short of liquid assets. As noted earlier, it may be costly to pass up positive NPV projects due to shortfalls of cash. Thus, for precautionary motives, firms with more volatile cash flows are expected to hold more cash in an attempt to mitigate the adverse effects of financial constraints (Han and Qiu, 2007).

R&D/Sales denotes a ratio of R&D expanse to sales, as a proxy for financial distress costs. CapEx/Assets is a ratio of capital expenditures to total assets, indicating whether managers attempt to increase the scale of their firms. Dividend/(Dividend plus Cash) is the cash dividends divided by cash dividends plus cash. We include the dividend payout ratio in our regressions to control for the potential impact of the firm's dividend policy on its cash holdings. To the extent that firms that pay dividends can gather funds more easily by declining their dividends, dividend may have a negative relationship with cash holdings (Opler *et al*., 1999). However, it is possible that dividend-paying firms can also hold more cash than non-dividend paying firms because they have to avoid a situation in which they are short of cash to fulfill the needs of dividend payments. In such case, a positive relation is expected.

3.5. Data

The sample of SEOs consists of non-financial companies listed in the Taiwan Stock Exchange (TWSE) and GreTai Securities Market.[10] The SEO events that took place between 1997 and 2011 are collected from *Taiwan Economic Journal* (TEJ), a privately owned data vendor company. TEJ started to provide data on board shareholdings at the end of 1996; thus the sample period for this study starts from 1997. A total of 1,250 observations are gathered. Other firm characteristics for the sample period are collected also from TEJ.

4. Empirical Results

4.1. Basic Statistics

Table 1 presents the descriptive statistics for the full sample. Cash holdings for SEO firms are about 15.8% during our sample period. Pledge ratio in the sample has a mean of 9.5%. The average ratio of independent directors to total board size is 11.6%, and institutions hold about 31.1% of the shares. The Separation has a mean of 5.6% and the governance index constructed in this study has a mean and a median of about eight. The market-to-book ratio, our proxy for

Table 1: Summary Statistics

This table presents the summary statistics of the variables used in this study. Cash Holdings is cash and cash equivalents divided by total non-cash assets. Pledge is the pledge ratio of the board (pledged shareholdings divided by total shareholdings of the board). Board Independence is the number of independent directors divided by the board size. Institutional Ownership is the percentage of the company's common stock held by institutions. Separation is the separation of controlling shareholders' cash flow rights from control rights as in La Porta *et al*. (1999) and Claessens *et al*. (2000). Governance index is constructed based on the quartiles of Pledge, Board Independence, Institutional Ownership, and Separation; and the higher value of the index indicates better governance. For the details of the construction, see the text. Market-to-Book is the market value of equity plus the book value of total assets minus the book value of equity divided by the book value of assets. Leverage is the ratio of total debt to total assets. Size is the natural logarithm of total assets. Net Working Capital/Assets is the ratio of current assets net of cash minus current liabilities divided by total assets. Cash Flow/Assets is measured as earnings after interest, dividend, and taxes, but before depreciation, divided by total assets. Cash Flow Volatility is the standard deviation of the cash flow ratio of the past five years. R&D/Sales denotes a ratio of R&D expanse to sales. CapEx/Assets is a ratio of capital expenditures to total assets. Dividend/(Dividend plus Cash) is the cash dividends divided by cash dividends plus cash. A total of 1,250 SEO observations during 1997-2011 is gathered is gathered from the Taiwan stock market.

N=1,250	*Mean*	*Stdev.*	*25th*	*Median*	*75th*
Cash Holdings	0.158	0.289	0.034	0.084	0.176
Pledge	0.095	0.190	0.000	0.000	0.098
Board Independence	0.116	0.157	0.000	0.000	0.286
Institutional Ownership	0.311	0.215	0.143	0.273	0.443
Separation	0.056	0.096	0.003	0.016	0.061
Governance index	8.03	1.65	7.00	8.00	9.00
Market-to-Book	1.59	0.90	1.04	1.34	1.82
Leverage	0.401	0.181	0.276	0.394	0.505
Size	15.18	1.43	14.27	15.00	16.00
Net Working Capital/Assets	0.093	0.188	-0.019	0.089	0.213
Cash Flow/Assets	0.049	0.164	0.013	0.076	0.127
Cash Flow Volatility	0.077	0.095	0.027	0.051	0.088
R&D/Sales	0.052	0.330	0.000	0.014	0.036
CapEx/Assets	0.025	0.105	0.001	0.010	0.049
Dividend/(Dividend plus Cash)	0.112	0.192	0.000	0.000	0.169

investment opportunities is about 1.59. As for other financial characteristics, leverage ratio is about 40%, non-cash net working capital ratio is about 9.3%, cash flow ratio is about 4.9%, cash flow volatility is about 7.7%, R&D to sales ratio is about 5.2%, capital expenditure ratio is about 2.5%, and dividend ratio is about 11.2%.

Table 2 reports the correlation coefficients of the variables. Basically, the relationships between cash holdings and explanatory variables are consistent with previous findings. For example, firms with high pledge ratio and Separation have lower cash holdings, whereas firms with more independent directors and institutional ownership hold more cash. Market-to-book ratio and cash flow volatility have positive effects on firms' cash holdings. High levered firms, firms with high non-cash net working capital and dividend-paying firms hold lower levels of cash. Overall, all of the correlation coefficients are not highly correlated and thus the problem of multicollinearity is less of a concern.

4.2. Regression Analysis

4.2.1. Main Results

Table 3 presents the 2SLS regression results of cash holdings on corporate governance.[11] In the first column, four corporate governance variables are included to investigate the relationships with cash holdings. As expected, SEO firms with high pledge ratio and high Separation hold lower levels of cash, whereas those with more independent directors and institutional ownership are allowed to hold more cash. All of these variables show expected directions in affecting cash holdings, while three of four coefficients are statistically significant. This evidence is supportive of the shareholder power hypothesis which suggests that better governed firms are inclined to hold more cash.

In the second column, corporate governance is proxied by an index that simultaneously accounts for the four dimensions of the above governance variables. The estimation reports that the governance index is significantly positive. Thus, the shareholder power hypothesis is still supported as corporate governance is positively associated with cash holdings for SEO firms. Allowing firms to retain more cash for investment opportunities can yield higher returns to shareholders. Thus, shareholders would accept more cash holdings when corporate governance can protect their interests. Table 3 also documents empirical results consistent with previous studies showing that market-to-book ratio is positive correlated with cash holdings, and that cash holdings decrease with leverage, non-cash net working capital, and dividend ratio.

However, little is known about the motives that investors determine the cash holdings for SEO firms. We examine whether agency problem plays a role in the process of determining cash holdings by examining the interaction of corporate governance and investment opportunities in affecting cash

Table 2: Pearson Correlation Coefficient Matrix

This table presents the correlation coefficients of the variables used in this study. Cash Holdings is cash and cash equivalents divided by total non-cash assets. Pledge is the pledge ratio of the board (pledged shareholdings divided by total shareholdings of the board). Board Independence is the number of independent directors divided by the board size. Institutional Ownership is the percentage of the company's common stock held by institutions. Separation is the separation of controlling shareholders' cash flow rights from control rights as in La Porta *et al.* (1999) and Claessens *et al.* (2000). Market-to-Book is the market value of equity plus the book value of total assets minus the book value of equity divided by the book value of assets. Leverage is the ratio of total debt to total assets. Size is the natural logarithm of total assets. Net Working Capital/Assets is the ratio of current assets net of cash minus current liabilities divided by total assets. Cash Flow/Assets is measured as earnings after interest, dividend, and taxes, but before depreciation, divided by total assets. Cash Flow Volatility is the standard deviation of the cash flow ratio of the past five years. R&D/Sales denotes a ratio of R&D expanse to sales. CapEx/Assets is a ratio of capital expenditures to total assets. Dividend/(Dividend plus Cash) is the cash dividends divided by cash dividends plus cash. A total of 1,250 SEO observations during 1997-2011 is gathered is gathered from the Taiwan stock market. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

0	*[1]*	*[2]*	*[3]*	*[4]*	*[5]*	*[6]*	*[7]*	*[8]*	*[9]*	*[10]*	*[11]*	*[12]*	*[13]*
Cash Holdings [1]	1												
Pledge [2]	-0.13***	1											
Board Independence [3]	0.13***	-0.2***	1										
Institutional Ownership [4]	0.02	-0.05	0.07***	1									
Separation [5]	-0.01	-0.08***	-0.05***	0.38***	1								
Market-to-Book [6]	0.3***	-0.12***	0.05	0.03	-0.01								
Leverage [7]	-0.28***	0.09***	-0.02	0.06***	0.06***	-0.25***	1						
Size [8]	-0.11***	0.18***	-0.16***	0.33***	0.19***	-0.05***	0.07***	1					
Net Working Capital/Assets [9]	-0.02	-0.12***	0.05***	-0.07***	-0.11***	0.14***	-0.39***	-0.09***	1				
Cash Flow/Assets [10]	0.03	-0.02	-0.07***	0.11***	0.03	0.1***	-0.25***	0.38***	0.22***	1			
Cash Flow Volatility [11]	0.08***	-0.06***	0.1***	-0.06***	-0.02	0.09***	0.14***	-0.34***	-0.12***	-0.55***	1		
R&D/Sales [12]	0.08***	-0.04	0.05***	-0.03	0.04	0.08***	-0.13***	-0.08***	0.03	-0.1***	0.06***	1	
CapEx/Assets [13]	-0.01	-0.04	0	0.11***	0.1***	0.09***	-0.09***	0.31***	-0.02	0.3***	-0.17***	-0.01	1
Dividend/(Dividend plus Cash) [14]	-0.12***	-0.03	0.18***	0.19***	-0.02	0.01	-0.05***	0.2***	0.13***	0.23***	-0.2***	-0.05***	0.06***

Table 3: The Impact of Corporate Governance on Cash Holdings

This table presents two-stage least square regression results of corporate governance on cash holdings. Cash Holdings is cash and cash equivalents divided by total non-cash assets. Pledge is the pledge ratio of the board (pledged shareholdings divided by total shareholdings of the board). Board Independence is the number of independent directors divided by the board size. Institutional Ownership is the percentage of the company's common stock held by institutions. Separation is the separation of controlling shareholders' cash flow rights from control rights as in La Porta *et al*. (1999) and Claessens *et al*. (2000). Governance index is constructed based on the quartiles of Pledge, Board Independence, Institutional Ownership, and Separation; and the higher value of the index indicates better governance. For the details of the construction, see the text. Market-to-Book is the market value of equity plus the book value of total assets minus the book value of equity divided by the book value of assets. Leverage is the ratio of total debt to total assets. Size is the natural logarithm of total assets. Net Working Capital/Assets is the ratio of current assets net of cash minus current liabilities divided by total assets. Cash Flow/Assets is measured as earnings after interest, dividend, and taxes, but before depreciation, divided by total assets. Cash Flow Volatility is the standard deviation of the cash flow ratio of the past five years. R&D/Sales denotes a ratio of R&D expanse to sales. CapEx/Assets is a ratio of capital expenditures to total assets. Dividend/(Dividend plus Cash) is the cash dividends divided by cash dividends plus cash. All explanatory variables are lagged values to mitigate endogeneity. A total of 1,250 SEO observations during 1997-2011 is gathered from the Taiwan stock market. *t*-statistics adjusted for heteroskedasticity and clustering at the firm, year, and industry levels are provided in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Variable	*[1]*	*[2]*
Cash Holdings (t-1)	0.708*** (3.732)	0.715*** (3.826)
Pledge	-0.065*** (-3.071)	
Board Independence	0.073** (2.233)	
Institutional Ownership	0.077** (2.055)	
Separation	-0.034 (-0.601)	
Governance index		0.011** (2.347)
Market-to-Book	0.025** (2.054)	0.026** (2.169)
Leverage	-0.254*** (-6.418)	-0.253*** (-6.472)
Size	-0.009* (-1.811)	-0.009** (-2.291)
Net Working Capital/Assets	-0.143*** (-4.912)	-0.143** (-4.952)
Cash Flow/Assets	0.03 (0.569)	0.032 (0.601)
Cash Flow Volatility	0.07 (0.679)	0.074 (0.714)
R&D/Sales	0.019 (0.416)	0.022 (0.492)
CapEx/Assets	-0.099* (-1.958)	-0.082 (-1.63)
Dividend/(Dividend plus Cash)	-0.161*** (-7.902)	-0.144*** (-7.847)
Constant	0.268*** (3.602)	0.194*** (2.709)
R^2	0.48	0.48 0

holdings. To address this question, we divide the sample into quartiles based on governance index and market-to-book ratio, respectively. We construct the following indicator variables to capture both the governance and investment opportunity effects on cash holdings. Good_Govern is an indicator that equals

one if a firm's governance index is in the highest quartile, and zero otherwise. Weak_Govern is an indicator that equals one if a firm's governance index is in the lowest quartile, and zero otherwise. High_MB is an indicator that equals one if a firm's market-to-book ratio is in the highest quartile, and zero otherwise. Low_MB is and indicator that equals one if a firm's market-to-book ratio is in the lowest quartile, and zero otherwise. We include the four variables in the cash holding regression to account for the governance and investment opportunity effects.[12] Table 4 presents the results. The first column shows that the coefficients of Good_Govern and High_MB are positive and statistically significant, whereas those of Weak_Govern and Low_MB are negative but not significant. This demonstrates that cash holdings for SEO firms increase with governance practices and investment opportunities, as presented in previous results.

In column 2, an interaction term, Weak_Govern*Low_MB, is included in the regression. If an SEO firm is weakly governed and has looming investment opportunities, investors would consider the management more likely to spending perquisites and thus the coefficient of the interaction term represents the free cash flow problem and is expected to be negative. The results show that its coefficient estimate is -0.035 and is statistically significant, suggesting that SEO firms with weak governance and poor investment opportunities hold fewer cash holdings than do other SEO firms. This is consistent with the suggestion of the shareholder power hypothesis.

We also account for the effect of the effects of good governance interacted with investment opportunities, and the results are provided in the third column. It is found that the coefficient of Good_Govern*High_MB is positive but not significant, indicating that SEO firms which are well governed and have good investment opportunities only have slightly higher cash holdings than do other SEO firms. Thus, the evidence herein lends support to the prediction that shareholders wish firms with weak governance and poor investment opportunities to hold fewer cash in the context of free cash flow.

4.2.2. Subsample Analysis: The Role of Dividend Payout in Free Cash Flow

Earlier results demonstrate that weak governance and poor investment opportunities in SEO firms could lead to shareholders' concern about free cash flow Easterbrook (1984), Jensen (1986), and other researchers suggest that equity-holders can minimize the cash that management controls by increasing payout. Removing unnecessary cash from the firm could reduce the opportunity for management to go on consuming perquisites or undertake negative NPV projects. In this sense, firms without paying dividends are those with managers more likely to abuse cash at the expense of minority shareholders. Thus, we expect that the managerial discretion of weak corporate governance and poor investment opportunities in SEO firms is more pronounced in non-dividend paying firms.

Table 4: The Impact of Investment Opportunity on the Relationship between Corporate Governance and Cash Holdings

This table presents two-stage least square regression results of corporate governance interacted with investment opportunities on cash holdings. Cash Holdings is cash and cash equivalents divided by total non-cash assets. Good_Govern is an indicator that equals one if a firm's governance index is in the highest quartile, and zero otherwise. Weak_Govern is an indicator that equals one if a firm's governance index is in the lowest quartile, and zero otherwise. Governance index is constructed based on the quartiles of Pledge, Board Independence, Institutional Ownership, and Separation; and the higher value of the index indicates better governance. For the details of the construction, see the text. High_MB is an indicator that equals one if a firm's market-to-book ratio is in the highest quartile, and zero otherwise. Low_MB is and indicator that equals one if a firm's market-to-book ratio is in the lowest quartile, and zero otherwise. Market-to-book ratio is the market value of equity plus the book value of total assets minus the book value of equity divided by the book value of assets. Leverage is the ratio of total debt to total assets. Size is the natural logarithm of total assets. Net Working Capital/Assets is the ratio of current assets net of cash minus current liabilities divided by total assets. Cash Flow/Assets is measured as earnings after interest, dividend, and taxes, but before depreciation, divided by total assets. Cash Flow Volatility is the standard deviation of the cash flow ratio of the past five years. R&D/Sales denotes a ratio of R&D expanse to sales. CapEx/Assets is a ratio of capital expenditures to total assets. Dividend/(Dividend plus Cash) is the cash dividends divided by cash dividends plus cash. All explanatory variables are lagged values to mitigate endogeneity. A total of 1,250 SEO observations during 1997-2011 is gathered from the Taiwan stock market. *t*-statistics adjusted for heteroskedasticity and clustering at the firm, year, and industry levels are provided in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Variable	*[1]*		*[2]*		*[3]*	
Cash Holdings (t-1)	0.731***	(4.048)	0.731***	(4.052)	0.73***	(4.063)
Good_Govern	0.025*	(1.802)	0.025*	(1.852)	0.012	(0.941)
Weak_Govern	-0.005	(-0.441)	0.004	(0.34)	-0.005	(-0.424)
High_MB	0.056***	(3.717)	0.056***	(3.715)	0.036*	(1.732)
Low_MB	-0.009	(-0.853)	0.005	(0.429)	-0.009	(-0.914)
Weak_Govern*Low_MB			-0.035*	(-1.674)		
Good_Govern*High_MB					0.049	(1.159)
Leverage	-0.242***	(-6.034)	-0.244***	(-6.086)	-0.241***	(-5.985)
Size	-0.008**	(-2.176)	-0.008**	(-2.137)	-0.008**	(-2.218)
Net Working Capital/Assets	-0.141***	(-4.881)	-0.143***	(-4.919)	-0.141***	(-4.842)
Cash Flow/Assets	0.025	(0.427)	0.023	(0.391)	0.031	(0.557)
Cash Flow Volatility	0.087	(0.818)	0.086	(0.812)	0.088	(0.832)
R&D/Sales	0.019	(0.418)	0.018	(0.402)	0.02	(0.453)
CapEx/Assets	-0.078	(-1.538)	-0.077	(-1.528)	-0.076	(-1.506)
Dividend/(Dividend plus Cash)	-0.137***	(-7.61)	-0.136***	(-7.597)	-0.139***	(-7.588)
Constant	0.291***	(4.698)	0.287***	(4.635)	0.298***	(4.865)
R^2	0.47		0.48	0	0.48	0

To address this issue, we divide the sample into two groups, dividend-paying firms and non-dividend paying firms, which results in an observation that almost 60% (746/1,250) of the sample firms do not pay cash dividends in the year prior to SEO. We carry out regression analysis based on the subsamples and the results are provided in Table 5. Basically, governance and investment opportunities have the expected signs in the cash holding regression. As for the interaction term Weak_Govern*Low_MB, both of its coefficients in the two subsamples are negative but only significant in the SEO firms without paying dividends, indicating that non-dividend paying SEO firms with weak

Table 5: The Impact of Investment Opportunity on the Relationship between Corporate Governance and Cash Holdings in Dividend-paying and Non-dividend Paying Firms

This table presents two-stage least square regression results of corporate governance interacted with investment opportunities on cash holdings. Cash Holdings is cash and cash equivalents divided by total non-cash assets. Good_Govern is an indicator that equals one if a firm's governance index is in the highest quartile, and zero otherwise. Weak_Govern is an indicator that equals one if a firm's governance index is in the lowest quartile, and zero otherwise. Governance index is constructed based on the quartiles of Pledge, Board Independence, Institutional Ownership, and Separation; and the higher value of the index indicates better governance. For the details of the construction, see the text. High_MB is an indicator that equals one if a firm's market-to-book ratio is in the highest quartile, and zero otherwise. Low_MB is and indicator that equals one if a firm's market-to-book ratio is in the lowest quartile, and zero otherwise. Market-to-book ratio is the market value of equity plus the book value of total assets minus the book value of equity divided by the book value of assets. Leverage is the ratio of total debt to total assets. Size is the natural logarithm of total assets. Net Working Capital/Assets is the ratio of current assets net of cash minus current liabilities divided by total assets. Cash Flow/Assets is measured as earnings after interest, dividend, and taxes, but before depreciation, divided by total assets. Cash Flow Volatility is the standard deviation of the cash flow ratio of the past five years. R&D/Sales denotes a ratio of R&D expanse to sales. CapEx/Assets is a ratio of capital expenditures to total assets. All explanatory variables are lagged values to mitigate endogeneity. A total of 1,250 SEO observations during 1997-2011 is gathered from the Taiwan stock market. *t*-statistics adjusted for heteroskedasticity and clustering at the firm, year, and industry levels are provided in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels, respectively.

Variable	*Non-dividend Paying Firms*		*Dividend Paying Firms*	
Cash Holdings (t-1)	0.93***	(2.908)	0.537***	(9.401)
Good_Govern	0.026	(1.169)	0.011	(0.702)
Weak_Govern	0.024	(1.222)	-0.03**	(-1.982)
High_MB	0.068***	(2.745)	0.04**	(2.241)
Low_MB	0.024	(1.384)	-0.006	(-0.369)
Weak_Govern*Low_MB	-0.054*	(-1.807)	-0.015	(-0.61)
Leverage	-0.246***	(-4.269)	-0.261***	(-4.196)
Size	-0.013***	(-2.745)	-0.002	(-0.316)

contd. table 5

Variable	*Non-dividend Paying Firms*		*Dividend Paying Firms*	
Net Working Capital/Assets	-0.204***	(-4.759)	-0.056	(-1.331)
Cash Flow/Assets	0.046	(0.816)	-0.008	(-0.048)
Cash Flow Volatility	0.083	(0.608)	0.046	(0.226)
R&D/Sales	0.017	(0.383)	0.05	(0.338)
CapEx/Assets	-0.107	(-1.438)	-0.075	(-1.123)
Constant	0.333***	(3.813)	0.21***	(2.508)
R^2	0.47		0.61	
N	746		504	

governance and poor investment opportunities are limited to hold lower cash holdings. This is in line with our conjecture that shareholders perceive that the free cash flow problem (weak governance along with poor investment opportunities) is more severe in SEO firms without paying dividends. Thus, the evidence in this paper provides a more complete picture about the shareholder power hypothesis with regard to the motives that shareholders determine cash holdings for SEO firms.

5. Conclusion

Cash is the most basic liquidity reserve for a corporate business. Because cash is liquid and easy to manipulate, firm-level governance is highly associated with the use of cash as far as an executive manager is concerned. The board's disposal of the proceeds from SEOs is central to agency problems for minority stockholders. The use of proceeds from SEOs is important because, unlike creditors, investors have less ability to monitor the cash flow of firms. The lack of monitoring mechanisms makes it difficult for investors to prevent activities of moral hazard.

This paper examines the relationship between cash holdings and firm-level governance attribute for SEO firms, in which shareholders play a substantial role in fulfilling the financing needs and adjusting the capital structure. Also, the transactions cost motives and the ability to financing play a less important role in determining cash holdings. Thus, investors might pay more attention on how the firms are governed (Dittmar *et al*., 2003). Using a sample of Taiwanese publicly-traded firms that conduct SEOs, we find that cash holdings are positively associated with corporate governance, namely, increase with the number of independent directors and institutional ownership and decrease with pledged stocks of the board for bank loans. The results using a governance index constructed with four dimensions of variables are also consistent with the shareholder power hypothesis.

Furthermore, we document a second-order effect of corporate governance and investment opportunities on cash holdings by showing that weak governance along with poor investment opportunities (proxied by market-to-book ratio) mitigate the incentives of investors allowing high cash holdings

for SEO firms. In particular, this phenomenon is more pronounced in firms without paying dividends, which investors might consider as with few incentives to reduce free cash flow. Overall, our findings support the argument of the shareholder power hypothesis and shed light on a trace through which investors determine the cash holdings of SEO firms in an attempt to deal with agency problems of cash disposal.

Notes

1. However, excess cash does not guarantee higher profitability. For example, Simutin (2010) points out a positive relationship between corporate excess cash holdings and its abnormal returns. Firms with more excess cash have higher market betas and invest considerably more in the future, but do not experience future profitability that is stronger than that of their peers with low cash.
2. Pinkowitz *et al*. (2006) find that the relationship between cash holdings and firm value is weaker in countries with poor investor protection. Frésard and Salva (2010) discuss whether or not the value that investors attach to excess cash reserves for foreign firms listed on U.S. exchanges and over the counter significantly differs with that for their domestic peers. They show that this excess-cash premium stems not only from the strength of U.S. legal rules and disclosure requirements, but also from greater informal monitoring pressure that comes with a U.S. listing. It also means that external monitoring significantly constrains inefficient allocation of corporate cash reserves by insiders. Kusnadi and Wei (2011) show that firms in countries with strong legal protection for minority shareholders are more likely to decrease cash holdings in response to an increase in cash flow.
3. Many studies also discuss the similar issues. Drobetz *et al*. (2010) apply the information asymmetry into the value of cash reserves, and they find that the value of corporate cash holdings is lower in states with a higher degree of information asymmetry, measured by the dispersion of forecasts on earnings per share by analysts, and the empirical evidence agrees with the free cash flow theory. Tong (2010) investigates the relation of CEO risk incentives with corporate cash holdings based on stock options. This study finds that firms with higher CEO risk incentives have less cash holdings; conversely, the value of cash holdings is higher in firms with higher CEO risk incentives. Liu and Mauer (2011) report opposite conclusions compared to Tong (2010) while their study is based on total compensation.
4. Similar to the prediction of the shareholder power hypothesis, Harford *et al*. (2008) find that when a poorly governed firm hoards smaller cash reserves, its managers quickly spend cash on capital expenditures and acquisitions. However, profitability of the firm and wealth of its stockholders do not improve.
5. See the Article 202 of the Company Act in Taiwan: "*Business operations of a company shall be executed pursuant to the resolutions to be adopted by the board of directors, except for the matters the execution of which shall be effected pursuant the resolutions of the shareholders' meeting as required by this Act or the Articles of Incorporation of the company*."
6. For example, Stulz (1988) shows that an increase in the fraction of voting rights controlled by management decreases the probability of a successful tender offer

and increases the premium offered if a tender offer is made. He also suggests that management can change the fraction of the votes they control through capital structure changes. See Shleifer and Vishny (1989) for a model that describes how managers can reduce the probability of being replaced, extract higher wages, and larger perquisites from shareholders, and obtain more latitude in determining corporate strategy by making manager-specific investments.

7. Chen and Kao (2011) show that financially constrained directors who hold high turnover stocks prefer to pledge their stocks at private banks for loans. Chen and Hu (2007) report a positive relationship between pledge ratio and firm risk proxied by the standard deviation of annualized monthly stock returns. They also indicate that the more pledged shares of boards are associated with worse performance.
8. The competent authority of Taiwanese listed firms requires the firms to fully disclose the amount of pledged shareholdings for bank loan under the Article 197–1 of the Company Act: "*Upon creation or cancellation of a pledge on the company's shares held by a director, a notice of such action shall be given to the company, and the company shall, in turn and within 15 days after such pledge creation/ cancellation date, have the change of pledge over such shares reported to the competent authority and declared in a public notice….*" It seems that regulators attempted to mitigate the information asymmetry on insiders' personal leverage and they considered that this behavior is potentially harmful for outside investors. In addition, there are initiatives by regulators aimed at reducing the managerial entrenchment of pledged shares when the authors are conducting the present research.
9. Control rights is also called "voting rights," which measures the ratio of voting rights under the controlling shareholder's control through the direct or indirect shareholdings to total voting rights. The calculation follows the methodology introduce in La Porta *et al*. (1999), Claessens *et al*. (2000), Yeh and Woidtke (2005), as well as Yeh *et al*. (2008). Cash flow rights is the controlling shareholder's percentage ownership of the profits/losses and dividends of a firm.
10. Both exchanges are centralized trading markets for listed stocks in Taiwan, while the firm sizes in GreTai Securities Market are usually smaller than those in the TWSE.
11. Throughout this paper, *t*-statistics are adjusted for clustering at firm, year, and industry levels.
12. Such method of participation is similar to that in the study of Brailsford and Yeoh (2004) investigating how cash flow and growth opportunities affect the market response to announcements of capital expenditure.

References

Aggarwal, R., Erel, I., Ferreira, M., Matos, P., 2011. Does governance travel around the world? Evidence from institutional investors. *Journal of Financial Economics* 100, 154-181.

Almeida, H., Campello, M., Weisbach, M.S., 2004. The cash flow sensitivity of cash. *Journal of Finance* 59, 1777-1804.

Baskin, J., 1987. Corporate liquidity in games of monopoly power. *Review of Economics and Statistics* 69, 312-319.

Bates, T.W., Kahle, K.M., Stulz, R.M., 2009. Why do US firms hold so much more cash than they used to? *Journal of Finance* 64, 1985-2021.

Bhojraj, S., Sengupta, P., 2003. Effect of corporate governance on bond ratings and yields: The role of institutional investors and outside directors. *Journal of Business* 76, 455-475.

Brailsford, T.J., Yeoh, D., 2004. Agency problems and capital expenditure announcements. *Journal of Business* 77, 223-256.

Chen, A., Kao, L., 2011. Effect of collateral characteristics on bank performance: Evidence from collateralized stocks in Taiwan. *Journal of Banking & Finance* 35, 300-309.

Chen, A., Li, W.-L., Chen, R. C.Y, 2001. The announcement effect of seasoned equity offerings with respect to the growth potential and insider trading. *Journal of Financial Studies* 9, 1-25.

Chen, Y., Hu, S.-Y., 2007. The controlling shareholder's personal leverage and firm performance. *Applied Economics* 39, 1059-1075.

Chen, Y.-R., Chuang, W.-T., 2009. Alignment or entrenchment? Corporate governance and cash holdings in growing firms. *Journal of Business Research* 62, 1200-1206.

Claessens, S., Djankov, S., Lang, L.H.P., 2000. The separation of ownership and control in East Asian corporations. *Journal of Financial Economics* 58, 81-112.

Core, J.E., Holthausen, R.W., Larcker, D.F., 1999. Corporate governance, chief executive officer compensation, and firm performance. *Journal of Financial Economics* 51, 371-406.

DeAngelo, H., DeAngelo, L., Stulz, R.M., 2010. Seasoned equity offerings, market timing, and the corporate lifecycle. *Journal of Financial Economics* 95, 275-295.

Dittmar, A., Mahrt-Smith, J., 2007. Corporate governance and the value of cash holdings. *Journal of Financial Economics* 83, 599-634.

Dittmar, A., Mahrt-Smith, J., Servaes, H., 2003. International corporate governance and corporate cash holdings. *Journal of Financial and Quantitative Analysis* 38, 111-133.

Drobetz, W., Gruninger, M.C., Hirschvogl, S., 2010. Information asymmetry and the value of cash. *Journal of Banking & Finance* 34, 2168-2184.

Easterbrook, F.H., 1984. Two agency-cost explanations of dividends. *American Economic Review* 74, 650-659.

Fama, E.F., French, K.R., 2005. Financing decisions: Who issues stock? *Journal of Financial Economics* 76, 549-582.

Frésard, L., Salva, C., 2010. The value of excess cash and corporate governance: Evidence from US cross-listings. *Journal of Financial Economics* 98, 359-384.

Gillan, S., Starks, L.T., 2003. Corporate governance, corporate ownership, and the role of institutional investors: A global perspective. *Journal of Applied Finance* 13, 4-22.

Gompers, P., Ishii, J., Metrick, A., 2003. Corporate governance and equity prices. *Quarterly Journal of Economics* 118, 107-156.

Guney, Y., Ozkan, A., Ozkan, N., 2007. International evidence on the non-linear impact of leverage on corporate cash holdings. *Journal of Multinational Financial Management* 17, 45-60.

Han, S.J., Qiu, H.P., 2007. Corporate precautionary cash holdings. *Journal of Corporate Finance* 13, 43-57.

Harford, J., Mansi, S.A., Maxwell, W.F., 2008. Corporate governance and firm cash holdings in the US. *Journal of Financial Economics* 87, 535-555.

Haushalter, D., Klasa, S., Maxwell, W.F., 2007. The influence of product market dynamics on a firm's cash holdings and hedging behavior. *Journal of Financial Economics* 84, 797-825.

Hutchinson, M., Gul, F.A., 2004. Investment opportunity set, corporate governance practices and firm performance. *Journal of Corporate Finance* 10, 595-614.

Jensen, M.C., 1986. Agency costs of free cash flow, corporate finance, and takeovers. *American Economic Review* 76, 323-329.

Jensen, M.C., Meckling, W.H., 1976. Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics* 3, 305-360.

John, T.A., 1993. Accounting measures of corporate liquidity, leverage, and costs of financial distress. *Financial Management* 22, 91-100.

Jung, K., Kim, Y.-C., Stulz, R., 1996. Timing, investment opportunities, managerial discretion, and the security issue decision. *Journal of Financial Economics* 42, 159-186.

Kalcheva, I., Lins, K.V., 2007. International evidence on cash holdings and expected managerial agency problems. *Review of Financial Studies* 20, 1087-1112.

Kao, L.-F., Chiou, J.-R., 2002. The effect of collateralized shares on informativeness of accounting earnings. *NTU Management Review* 13, 127-162.

Keynes, J.M., 1936. The general theory of employment, interest and money. McMillan, London.

Kuan, T.-H., Li, C.-S., Chu, S.-H., 2011. Cash holdings and corporate governance in family-controlled firms. *Journal of Business Research* 64, 757-764.

Kusnadi, Y., 2011. Do corporate governance mechanisms matter for cash holdings and firm value? *Pacific-Basin Finance Journal,* forthcoming.

Kusnadi, Y., Wei, K.C.J., 2011. The determinants of corporate cash management policies: Evidence from around the world. *Journal of Corporate Finance* 17, 725-740.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A., 1999. Corporate ownership around the world. *Journal of Finance* 54, 471-517.

Lee, I., 1997. Do firms knowingly sell overvalued equity? *Journal of Finance* 52, 1439-1466.

Lee, T.S., Yeh, Y.H., 2004. Corporate governance and financial distress: Evidence from Taiwan. *Corporate Governance-an International Review* 12, 378-388.

Liu, Y., Mauer, D.C., 2011. Corporate cash holdings and CEO compensation incentives. *Journal of Financial Economics* 102, 183-198.

Mclaughlin, R., Safieddine, A., Vasudevan, G.K., 1996. The operating performance of seasoned equity issuers: Free cash flow and post-issue performance. *Financial Management* 25, 41-53.

Mclean, R.D., 2011. Share issuance and cash savings. *Journal of Financial Economics* 99, 693-715.

Mikkelson, W.H., Partch, M.M., 2003. Do persistent large cash reserves hinder performance? *Journal of Financial and Quantitative Analysis* 38, 275-294.

Myers, S.C., 1984. The capital structure puzzle. *Journal of Finance* 39, 575–592.

Myers, S.C., Majluf, N.S., 1984. Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics* 13, 187-221.

Opler, T., Pinkowitz, L., Stulz, R., Williamson, R., 1999. The determinants and implications of corporate cash holdings. *Journal of Financial Economics* 52, 3-46.

Ozkan, A., Ozkan, N., 2004. Corporate cash holdings: An empirical investigation of uk companies. *Journal of Banking & Finance* 28, 2103-2134.

Pinkowitz, L., Stulz, R., Williamson, R., 2006. Does the contribution of corporate cash holdings and dividends to firm value depend on governance? A cross-country analysis. *Journal of Finance* 61, 2725-2751.

Shleifer, A., Vishny, R.W., 1989. Management entrenchment: The case of manager-specific investments. *Journal of Financial Economics* 25, 123-139.

Simutin, M., 2010. Excess cash and stock returns. Financial Management 39, 1197-1222.

Smith Jr, C.W., Watts, R.L., 1992. The investment opportunity set and corporate financing, dividend, and compensation policies. *Journal of Financial Economics* 32, 263-292.

Stulz, R., 1988. Managerial control of voting rights: Financing policies and the market for corporate control. *Journal of Financial Economics* 20, 25-54.

Stulz, R., 1990. Managerial discretion and optimal financing policies. *Journal of Financial Economics* 26, 3-27.

Tong, Z.X., 2010. CEO risk incentives and corporate cash holdings. *Journal of Business Finance & Accounting* 37, 1248-1280.

Weisbach, M.S., 1988. Outside directors and CEO turnover. *Journal of Financial Economics* 20, 431-460.

Yeh, Y.-H., Shu, P.-G., Guo, R.-J., 2008. Ownership structure and IPO valuation—evidence from Taiwan. *Financial Management* 37, 141-161.

Yeh, Y.-H., Woidtke, T., 2005. Commitment or entrenchment?: Controlling shareholders and board composition. *Journal of Banking & Finance* 29, 1857-1885.