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Foreign Institutional Ownership and Cash Holdings in Thai Capital Market

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Abstract

This research article examines the relationship between foreign institutional ownership and the cash holdings of nonfinancial firms in Thailand over the period from 2013 to 2016. The result indicates that firms with higher foreign institutional ownership are associated with more cash holdings. This finding suggests that foreign institutional investors in the Thai firms may encourage managers to hold more cash reserves to hedge against unexpected cash flow risks and to increase value-enhancing investment opportunities with the precautionary savings motive. Moreover, this finding warns that firms with greater cash holdings will create agency problems between managers and shareholders, if managers dissipate such holdings for their private benefit and invest in value-decreasing investments. Managers and policy makers should improve corporate governance practices and provide institutions with effective capabilities for management monitoring roles to mitigate those conflicts of interest.

Keywords: Foreign Institutional Investors, Cash Holdings, Precautionary Motive, Agency Problems

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การถือครองหุ้นของนักลงทุนสถาบันต่างชาติและการถือครองเงินสดในตลาดทุนไทย

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บทคัดย่อ

บทความวิจัยนี้ความสัมพันธ์ระหว่างการถือครองหุ้นของนักลงทุนสถาบันต่างชาติ และการถือครองเงินสดของบริษัทที่จดทะเบียนในตลาดหลักทรัพย์แห่งประเทศไทยในช่วงปี ค.ศ. 2013-2016 ซึ่งผลการศึกษาแสดงให้เห็นว่า บริษัทมีการถือครองเงินสดเพิ่มขึ้นเมื่อมีจำนวนหุ้นที่ถือครองโดยนักลงทุนต่างชาติเพิ่มมากขึ้นอย่างมีนัยสำคัญ ดังนั้นผลการศึกษาอาจอธิบายได้ว่ามีผลความสัมพันธ์ในเชิงบวก เนื่องจากนักลงทุนต่างชาติพยายามให้ผู้บริหารถือครองเงินสดเพิ่มขึ้นเพื่อใช้ป้องกันความเสี่ยงต่อความผันผวนของกระแสเงินสด และเพิ่มโอกาสในการลงทุนในโครงการต่าง ๆที่สร้างมูลค่าเพิ่มของบริษัท ซึ่งสอดคล้องกับสมมติฐานการถือครองเงินสดเพื่อป้องกันเงินสดขาดมือและเพื่อสำรองใช้ในยามฉุกเฉิน นอกจากนี้ผลการศึกษายังบ่งชี้ให้เห็นว่าบริษัทที่มีการถือครองเงินสดในปริมาณสูงเหล่านี้มีโอกาสที่อาจเกิดปัญหาต้นทุนที่เกิดจากตัวแทนระหว่างผู้บริหารและนักลงทุน หากผู้บริหารเหล่านี้นำเงินสดไปใช้เพื่อประโยชน์ส่วนตัวและนำไปลงทุนในโครงการที่ไม่เกิดประโยชน์สูงสุดทำให้ลดมูลค่าของกิจการบริษัทลงได้ ข้อค้นพบจากงานวิจัยนี้มีความสำคัญสำหรับผู้กำหนดนโยบายและผู้บริหารต่อการปรับปรุงการกำกับดูแลกิจการให้ดีขึ้น โดยเพิ่มแรงจูงใจและความสามารถของนักลงทุนสถาบันต่างชาติเพื่อเพิ่มประสิทธิผลในการตรวจสอบการดำเนินงานของผู้บริหารเพื่อลดปัญหาความขัดแย้งทางผลประโยชน์ในบริษัท

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1. Introduction (บทนำ)

Firms use cash reserves to run firm business transactions, to maintain day-to-day operations, to repay debt, to sustain customer credits, and to finance investment project opportunities. Moreover, academics (Opler et al., 1999; Ferreira & Vilela, 2004) investigate financial determinants of corporate cash holdings of listed firms in the U.S. and the EMU countries, respectively, the findings indicate that such firms hold greater cash reserves to provide sufficient funds for their investment opportunities and to hedge the future cash flow risk of firms. Horioka and Terada-Hagiwara (2014) explore and examine the determinants of cash holding of firm level cross-country analysis of 11 countries of Asian and including Thailand and the results reveal that firms with greater operating cash flows tend to hold more cash reserves, in addition, firm performance (Tobin’s Q) has positive and significant impact on cash holding decisions.

The point of view of corporate governance and cash holding issues, the conflicts of interests (agency costs) between managers and shareholders may arise from firms with large cash holdings when self-interested managers have a misuse of cash reserves for their private benefits (i.e., invested NPV projects, increased executive compensations) rather than contribute it to shareholders; therefore, minority shareholders in firms with weak corporate governance are more likely to expropriate from those managers (Jensen, 1986; Ozkan & Ozkan, 2004).

Additionally, managers are more likely to misuse corporate cash holdings because they can convert it with low-cost conversions (Myers & Rajan, 1998), and hence such firms may have raised greater agency conflicts of cash holdings. Consequently, there is an increased interest in the literature regarding corporate governance mechanisms and cash holdings due to the agency costs of free cash flow, especially from firms with greater cash reserves when managers are required to hoard more cash reserves to maintain the benefits of investment opportunities, however, the self-interested managers may squander excess cash for their private benefits (Dittmar et al., 2003; Harford et al., 2008; Guizani, 2017), while shareholders have an incentive to achieve better corporate governance practices for mitigating the agency costs of cash holdings (Kuan et al., 2011; Lee & Park, 2016).

In particular, firms in the Asian markets including Thailand are controlled by supreme-control rights of family-controlled ownership and founder ownership so that these controlling shareholders are more likely to expropriate minority shareholder rights (Wiwattanakantang, 2001; Connelly et al., 2012). Furthermore, the prior works argue that firms in emerging markets have poorer corporate governance and weak investor protections; thus, larger shareholders also have more controlling power over the assets of firms and may consume them for their private benefit (Claessens et al., 2000; La Porta et al., 2000).

The corporate governance literature suggests that firms with greater foreign institutional ownership are able to benefit from active monitoring and thus mitigate agency conflicts. If firms have poor growth opportunities, then those investors would force managers to disgorge cash reserves and contribute them to shareholders; this governance mechanism is consistent with the monitoring hypothesis (Kuan et al., 2012; Belghitar & Khan, 2013). Alternatively, foreign institutional investors may push managers to hoard more cash reserves to finance a firm's' investment opportunities and to defend unexpected cash-flow volatilities during economic recession period; thus, the alternative hypothesis is subject to the precautionary motive for cash holdings (Vo, 2018).

Most prior studies of corporate cash holding policy of Asian firms have focused on the domestic with cross-country data analyses, however, there is a rarely investigations of firm-level data analysis of Thai stock market, in particular, we emphasize the investigation of the role of foreign institutional investors and financial determinants of cash holdings of Thai listed firms.

The contributions of this paper to the existing literature are as follows: First, this study aims to shed some light on the inconclusive evidence regarding the association between foreign institutional ownership and cash holdings. Second, there are few investigating the effect of foreign institutional investors on cash holding policy in Thailand, meanwhile, those investors are used for an important factor of corporate governance mechanisms. Indeed, there are few studies of this issue were available for the study of the emerging economies; therefore, it is important to examine the effect of foreign institutional ownership on the cash-holding policy of Thai firms, located in an emerging country with weak corporate governance that would fill a research gap.

The remainder of this paper is organized as follow. Section 2 presents the research objectives. Section 3 reviews theory of cash holdings, prior studies and testing hypotheses. Section 4 describes the data and methodology. Section 5 presents the results and discussions. Section 6 contains the conclusions.

2. Research Objectives (วัตถุประสงค์ของงานวิจัย)

2.1 To examine how and whether foreign institutional ownership influences the cash-holding decisions of Thai listed companies under the context of an emerging market.

2.2 To investigate the inconclusive evidence of the association between foreign institutional ownership and cash holdings in the emerging country, and to determine which of the two competing hypotheses — the monitoring hypothesis or the precautionary motive hypothesis — may explain the relationship between foreign institutional ownership and the cash-holding decisions of companies in the Thai stock market.

3. Literature Review (ทบทวนวรรณกรรม)

3.1. Corporate Cash Holdings: Theories and Hypotheses

Prior studies recommend that there are three theoretical frameworks of corporate cash holdings: the trade-off theory (the transaction costs and the precautionary motives), the pecking- order theory, and the agency cost of free cash-flow theory. Firstly, the trade-off theory postulates that firms set their optimal cash holding level to reduce the risk of firm financial distress and to maintain firms' investment opportunities even if firms have greater opportunity costs of holding liquid assets and/or have higher costs of external funds (Myers, 1977; Belghitar & Khan, 2013). In addition, the transaction-cost motive suggests that firms hold more cash reserves to run businesses when firms encounter higher costs of external funds. Furthermore, firms stockpile cash to finance the positive NPV investment opportunities and to maintain sufficient cash levels to prevent cash shortfalls in the future with the precautionary motive (Keynes, 1936; Kuan et al., 2012).

Secondly, the pecking-order theory suggests that firms need to reduce the costs of information asymmetry and costs of external financing first with the use of cash reserves of internal funding, next with issued bonds and debt, and lastly with issued equities (Myers & Majluf, 1984).

Moreover, managers intent to reduce the costs of external financing of capital markets by hold larger cash reserves, especially for firms facing financial constrained (Kuan et al., 2012).

Lastly, the agency cost of free cash-flow theory posits that firms with larger cash stockpiles are more likely to face the agency conflicts of cash flow between managers and shareholders because managers may pursue these cash reserves to maintain their discretionary power and to benefit their private interests at the expense of shareholders (Jensen, 1986). Opler et al. (1999) and Ozkan & Ozkan (2004) argue that firms with greater of agency costs of managerial discretions are more likely to hold large cash reserves for their private benefits, especially firms with poor shareholder rights and lack of corporate governance mechanisms.

3.2. Foreign Institutional Ownership and Cash Holdings

Shleifer & Vishny (1986) posit the primary agency theory whether firms with high concentration ownership would have more incentives to monitor corporate management, consequently such firms have less managerial opportunisms that can mitigate the agency problems between managers and shareholders. In the same vein, the literature of corporate governance suggests that the large shareholder, such as institutional ownership have more preference to invest in firms with good corporate governance as well as these institutional investors seem to adopt and provide active monitoring and disciplining firms' management, consequently, shareholder interests will be more well-aligned and will be protected in firms with good governance practices (Gillan & Starks, 2002; Lemmon & Lins, 2003).

Al-Najjar (2015) extend the literature of the impact of corporate governance mechanisms on cash holdings of the SMEs firms in the U.K. The findings show that there is no significant evidence that corporate governance index influence cash reserves, suggesting that these firms may have weakness governance mechanisms. Regarding to the firm-specifics, in addition, firm size, leverage, and liquid assets have negatively associations with cash holdings, meanwhile, cash flow risk has positive relationship with cash reserves. Guizani (2017) have also enlarged the literature on financial determinants of cash holdings of the emerging market with the investigation of firms in the Kingdom of Saudi Arabia. The results reveal that firms with higher leverage, larger firm size, greater capital expenditures, and firms have large portion of liquid assets tend to hold less cash holdings.

Likewise, previous studies of corporate governance mechanisms in the emerging markets suggest that firms with higher percentages of share that is being held by institutional investors, consequently, these ownerships can provide active monitoring role of firms' management activities to certify that managers make decisions of financial policy and make effective uses of financial resources to maximize firm value and shareholder wealth (Belghitar & Khan, 2013; Ward et al., 2018).

3.2.1. The Monitoring Hypothesis

The recommendations of previous studies (e.g., Shleifer & Vishny, 1986; Pound, 1988; Harford et al., 2008) are that institutional ownership can provide effective monitoring functions of firms to maximize firm value and shareholder wealth. Ameer (2010) suggests that institutional investors have a crucial role of specialized monitoring abilities in the emerging market. Previous study reveals the positive relationship between institutional ownership and firm performance of Thai listed firms, suggesting that institutional investors are able to provide rigid discipline managers and effective monitoring role, as a result firms have greater operating performance (Thanatawee, 2014).

Consistently, prior works suggest that firms with higher institutional ownership can provide an effective monitoring role and can mitigate the agency costs of cash holdings between managers of Taiwanese firms, respectively, as a result, firms with lower investment opportunities tend to hold less cash reserves to reduce the agency problems (Kuan et al., 2011). Furthermore, the empirical study of Kuan et al. (2012) indicate that firms with higher more foreign institutional shareholders can force the managers of managers disgorge excess cash holdings for firms with poor of investment and growth opportunities to disgorge excess cash holdings.

Ozkan and Ozkan (2004) argue that financial institutional investors are able to serve as effective monitoring role and are more likely to restrict the managerial opportunisms for misuse of cash reserves, however, there is no evidence of the financial institutional ownership affect cash holding decisions in the U.K. firms.

Following these arguments, this paper predicts a negative relationship between foreign institutional ownership and cash holdings.

H1a: There is a negative relationship between foreign institutional ownership and cash holdings.

3.2.2. The Precautionary Motive Hypothesis

Han and Qiu (2007) investigate the financial determinants of cash holdings of the U.S. listed firms from 1977 to 2002 and the findings reveal that constrained firms hold more cash reserves to hedge greater cash flow risks with the precautionary saving motive. Moreover, Lins et al.

(2010) also extend the literature of cash holdings for both public and private firms in 29 countries. The finding suggests that firms hoard more cash reserves to guard against future cash flow risk, which is consistent with a precautionary motive of cash holdings.

Song and Lee (2012) investigate the motive of cash holdings of firms from eight East Asian market countries including Thailand and with the result indicating that these firms hold greater cash reserves for a reduction of cash-flow volatility in the post-crisis period. This finding is consistent with the precautionary motive. Consistent with this, Kusnadi et al. (2015) suggest that firms with greater foreign institutional ownership can enhance the corporate governance of Chinese firms so that shareholders have more confidences in shareholder rights. Therefore, they allow managers to stockpile cash largely to finance profitable investment projects when firms have greater investment opportunities, which is supportive of the precautionary motive.

In the same vein, Belghitar and Khan (2013) who find the positive relationship between institutional ownership and cash holdings as well as investigate financial determinants of cash holdings of the UK SMEs and suggest that these firms hold cash reserves for the precautionary motives and reducing of their transaction costs. Furthermore, Vo (2018) finds a positive and significant association between foreign institutional ownership and cash holdings and suggests that foreign investors push firm managers in the Vietnam stock market to hold more cash reserves to reduce their capital frictions from higher external sources of funding. Following these arguments this paper predicts the alternative hypothesis as follows:

H1b: There is a positive relationship between foreign institutional ownership and cash holdings.

3.3. Control Variables

Following the previous studies of financial determinants of cash holdings (e.g., Opler et al., 1999; Belghitar & Khan, 2013; Al-Najjar, 2015; Guizani, 2017) so that in this study, we employ control variables to control for firm-specifics effects in the cash holding model that previous studies of the determinants of cash holdings found the significant impact of those factors on cash holding decisions in both developed and emerging markets.

3.3.1. Growth opportunities

Based on the trade-off theory, Chen & Chuang (2009) and Guizani (2017) argue that firms with higher growth opportunities intend to accumulate more cash reserves to keep their potential investment opportunities and to prevent a losing of project investments in the future. Moreover, Opler et al. (1999) suggest that firms with greater growth opportunities require to hold more cash reserves than those of firms with smaller growth opportunities, because their opportunity costs of project investments are higher than the smaller one. Supportive of previous studies find a positive and significant relationship between operating cash holdings (Al-Najjar, 2015; Guizani, 2017). Following the previous arguments, we hypothesize that:

H2: There is a positive relationship between growth opportunities and cash holdings.

3.3.2. Firm size

Previous studies (e.g., Miller & Orr, 1966; Al-Najjar & Belghitar, 2011; Al-Najjar, 2015) suggest that one important factor influence corporate cash holding decision is firm size, because larger firms have more diversified business and face less financial distress are compared with smaller ones, consequently, larger firms are more likely to able to hold lower cash reserves than smaller ones. Moreover, Kim et al. (1988) and Belghitar & Khan (2013) contend that larger firms have lower information asymmetry of external funding sources than smaller firms, therefore, the larger firms tend to hold less cash reserves. Supportive of prior works find a negative and significant relationship between firm size and cash holdings, and this evidence is consistent with the trade-off theory (Opler et al., 1999; Ozkan & Ozkan, 2004; Al-Najjar & Belghitar, 2011). Based on the empirical findings and these arguments, therefore, this paper hypothesizes that:

H3: There is a negative relationship between firm size and cash holdings.

3.3.3. Leverage

Several studies (e.g., Opler et al., 1999; Ozkan & Ozkan, 2004; Al-Najjar, 2015) argue that firms with higher debt are more likely to hold less cash reserves to reduce a financial distress and bankruptcy situations by firstly repay debt with cash reserves, hence higher leveraged firms tend to hoard less cash stockpiles. Supportive prior studies find a negative and significant association between firm size and cash holdings (Dang et al., 2015; Al-Najjar & Clark, 2017; Maheshwari & Rao, 2017). Consistent with these arguments and the evidence is in line with the framework of the pecking order theory, hence this paper hypothesizes that:

H4: there is a negative relationship between leverage and cash holdings.

3.3.4. Liquid assets

Ozkan and Ozkan (2004) argue that networking capital is used as a proxy for firms' liquidity because firms with highly liquid assets can be easily converted into cash as well as these firms can have lower costs of conversion than other assets, therefore, these firms are able to hold less cash reserves. Furthermore, Al-Najjar (2015) suggest that firms can use liquid assets are substitute for cash when firms face to cash shortfall situations, consistently, the empirical results of previous studies find that firms with highly liquid assets hold less cash reserves (Ferreira & Vilela, 2004; Ozkan & Ozkan, 2004; Al-Najjar & Belghitar, 2011). Based on trade-off theory and previous empirical explanation of liquid assets and cash holdings, this paper hypothesizes that:

H5: there is a negative relationship between liquid assets and cash holdings.

3.3.5. Capital expenditures

Previous studies (e.g., Opler et al., 1999; Guizani, 2017) posit that firms with greater investment expenses tend to have more likelihood of firms' cash deficit and may have lack of internal financial resources, hence these firms tend to hold less cash reserves. Moreover, firms' capital expenditures can be used as collateral to enhance borrowing capability from external sources of funding, therefore, these firms are able to hold less cash reserves (Bates et al., 2009). There are supportive evidences report that firms with higher capital expenditures tend to hold less cash reserves and this result is consistent with the framework of the pecking order theory (Anderson & Hamdi, 2016; Jiang & Lie, 2016). Thus, based on these arguments, we hypothesize that:

H6: there is a negative relationship between capital expenditures and cash holdings.

3.3.6. Operating cash flows

In the U.S. and U.K. contexts, Opler et al. (1999) and Ozkan & Ozkan (2004) suggest that firms with greater operating cash flow hoard more cash reserves to finance project investments in the future. Supportive previous studies (Tong, 2014; Lee & Park, 2016) find a negatively association between operating cash flows and cash holdings. Based on the pecking order theory and the following these arguments, this paper predicts a positive relationship between operating cash flows and cash holdings.

H7: there is a positive relationship between operating cash flows and cash holdings.

4. Data and Methodology (ข้อมูลและวิธีการวิจัย)

The sample included all nonfinancial firms from 2013 to 2016. The foreign institutional ownership and firm-specific characteristics were obtained from SETSMART, the database of the Stock Exchange of Thailand (SET). After we removing the outliers and incomplete data, the dataset of the balanced panel model consisted of 366 firms and 1,464 firm-year observations. We employ the balanced panel data model to estimate the relationship between foreign institutional ownership and cash holdings. Moreover, we include control variables to control the effects of firm-specific characteristics, which the model of which is presented as follows:

$$\begin{aligned}\mathrm{CASH}_{i,t} = \beta_0 + \beta_1\mathrm{FROWN}_{i,t} + \beta_2\mathrm{MTB}_{i,t} + \beta_3\mathrm{SIZE}_{i,t} + \beta_4\mathrm{LEV}_{i,t} \\ +\beta_5\mathrm{NWCR}_{i,t}+\beta_6\mathrm{CAPEX}_{i,t}+\beta_7\mathrm{OCFW}_{i,t} +\varepsilon_{i,t}\end{aligned} \quad (1)$$

where *i* indexes observational firms, t indexes time, and $\varepsilon_{i,t}$ is an error term. This study includes control variables that are employed in both developed and emerging markets to control for firm-specifics effects and are presented in Table 1.

Table 1: Definitions of Variables (คำจำกัดความของตัวแปร)

Variables	Definitions
Dependent variable	
CASH	Cash ratio is cash and cash equivalents divided by total assets.
Main independent variable	
FROWN	Foreign institutional ownership is the percentage of shares held by foreign institutions (including financial institutions, banks, insurance companies, pension funds, mutual funds, and unit and investment trusts).
Control variables (Firm specific characteristics)	
MTB	Market-to-book (growth opportunities) is the ratio of the book value of equity plus the book value of liabilities over total assets.
SIZE	Firm size is the natural logarithm of total assets.
LEV	Financial leverage is the ratio of total debt over total assets.
NWCR	Liquid assets are current assets minus current liabilities and cash and cash equivalents over total assets.
CAPEX	Capital expenditures is the investment in fixed assets over total assets.
OCFW	Operating cash flow is the ratio of operating cash flows over total assets.

5. The results and discussions (ผลการวิจัยและการอภิปรายผล)

Table 2 presents the descriptive statistics for the variables in the analysis: cash holdings, foreign institutional ownership, and firm- specific factors of 1,464 firm-year observations over the period 2013-2016. The results indicate that the average cash holding ratio (CASH) in this sample is approximately 6.80%. The mean of foreign institutional ownership is 5.20% of total shares outstanding. For the financial determinants of cash holdings, we find their means of them as follows: that for growth opportunities (MTB) is 1.52, and that for firm size (SIZE) is 8.69. The mean value of leverage (LEV) is 44.0%., liquidity assets (NWCR) are 11.3%., Capital expenditures over total assets (CAPEX) are 5.70%. Lastly, the mean of operating cash flow (OCFW) is 7.20%.

Table 2: Descriptive Statistics (สถิติพรรณนา)

Variable	Observation	Mean	Median	Minimum	Maximum	Std. Dev.
CASH	1464	0.068	0.044	0.000	0.688	0.076
FROWN	1464	0.052	0.010	0.000	0.748	0.091
MTB	1464	1.522	1.211	0.281	9.222	0.969
SIZE	1464	8.693	8.477	5.716	14.619	1.513
LEV	1464	0.440	0.452	0.003	0.995	0.212
NWCR	1464	0.113	0.091	-0.608	0.862	0.226
CAPEX	1464	0.057	0.036	0.000	0.689	0.067
OCFW	1464	0.072	0.071	-0.660	0.596	0.108

Note: Definitions of the variables are given in Table 1.

Table 3 indicates a positive and significant correlation between cash holdings and foreign institutional ownership. For the control variables, it indicates that cash holding is positively and significantly correlated with growth opportunities, liquid assets, and operating cash flow. On the other hand, cash holding is negatively and significantly correlated with firm size, and leverage. Furthermore, cash ratio is negatively correlated with capital expenditures but not significantly. In summary, the correlation coefficients between any pair of explanatory variables are between -0.7 and 0.7, thus, the model has less potential for multicollinearity problems.

Table 4 reports the pooled OLS, the panel fixed effects and the panel random effects regression results. In all models in which the fixed-effects and random effects results are very similar to the pooled OLS result, we find that the coefficient for FROWN is positive and significant in describing cash holdings and thus supports H1b. The evidence is consistent with the precautionary motive hypothesis and supportive of the finding of (Vo, 2018).

The result of a positive association between foreign institutional ownership and cash holdings may suggest that foreign institutional investors provide beneficial monitoring functions. They then push managers to accumulate cash reserves to hedge against corporate cash-flow volatility and to prevent the opportunity cost of forgoing the profitable investment projects from firms' cash shortfalls during economic fluctuations, (Kuan et al., 2012; Vo, 2018). In addition, this result may suggest that the agency problems will arise from firms hoarding more cash reserves if firms experience a misuse of cash stockpiles by self-interested managers (Kuan et al., 2011).

For firm-specific characteristics, the relationship results of growth opportunities (MTB) and cash holdings are inconclusive. As larger firms hold fewer cash reserves than smaller firms, there is a negative association between firm size (SIZE) and cash holdings. This result suggests that larger firms have less of a likelihood of bankruptcy issues and have lower costs of external financing than other firms. Therefore, this finding is supportive of the previous findings (Belghitar & Khan, 2013).

Furthermore, leverage is significantly negatively associated with cash holdings, suggesting that more highly leveraged firms tend to hold less cash reserves to repay debt-primarily to prevent unexpected financial distress situations. This finding supports the results of (Al-Najjar & Clark, 2017; Maheshwari & Rao, 2017). A significantly negative coefficient on NWCR in panel fixed and random effects models show that firms with higher liquid assets hold less cash reserves because firms can use these liquid assets as cash substitutes. This result supports the findings of (Guizani, 2017; Maheshwari & Rao, 2017). Similarly, a negative and significant coefficient on CAPEX indicates that firms with higher capital expenditures (greater collateral) are able to increase borrowing capacity so that these firms hold less cash reserves. This result support the findings of Uyar and Kuzey (2014) and Guizani (2017). Moreover, there is a positive and significant coefficient on OCF, suggesting that firms with greater cash flow hoard higher cash reserves to finance NPV investment projects in the future. This result supports the findings of prior works (Kusnadi et al., 2015; Al-Najjar, 2015).

Table 3: Correlation Matrix (เมททริกสหสัมพันธ์)

	CASH	FROWN	MTB	SIZE	LEV	NWCR	CAPEX	OCFW
CASH	1.000							
FROWN	0.173[a]	1.000						
MTB	0.121[a]	0.099[a]	1.000					
SIZE	-0.110[a]	0.391[a]	0.017	1.000				
LEV	-0.284[a]	0.099[a]	-0.018	0.433[a]	1.000			
NWCR	0.082[a]	-0.046	-0.143[a]	-0.231[a]	-0.502[a]	1.000		
CAPEX	-0.005	-0.007	0.278[a]	0.032	0.079[a]	-0.304[a]	1.000	
OCFW	0.157[a]	0.101[a]	0.332[a]	0.053[b]	-0.109[a]	-0.105[a]	0.218[a]	1.000

Note: Definitions of the variables are given in Table 1. a, b, and c indicate significance at 1%, 5%, and 10%, respectively.

Table 4: Regression results (ผลการทดสอบของสมการถดถอย)

Dependent variable: CASH	(I) Pooled OLS		(II) Fixed Effects		(III) Random Effects	
	Coeff.	*p*-value	Coeff.	*p*-value	Coeff.	*p*-value
Independent variables						
Constant	0.123[a]	0.000	0.321[a]	0.000	0.169[a]	0.000
	(8.69)		(5.91)		(7.96)	
FROWN	0.181[a]	0.000	0.175[a]	0.001	0.194[a]	0.000
	(8.33)		(3.46)		(6.39)	
MTB	0.005[b]	0.016	-0.002	0.378	0.001	0.733
	(2.41)		(-0.88)		(0.34)	
SIZE	-0.005[a]	0.001	-0.018[a]	0.007	-0.007[a]	0.003
	(-3.23)		(-2.69)		(-2.94)	
LEV	-0.105[a]	0.000	-0.185[a]	0.000	-0.141[a]	0.000
	(-9.26)		(-8.36)		(-9.48)	
NWCR	-0.014	0.182	-0.142[a]	0.000	-0.077[a]	0.000
	(-1.34)		(-8.48)		(-6.19)	
CAPEX	-0.061[b]	0.039	-0.132[a]	0.000	-0.118[a]	0.000
	(-2.06)		(-4.96)		(-4.72)	
OCFW	0.048[a]	0.009	0.058[a]	0.001	0.066[a]	0.000
	(2.62)		(3.46)		(4.24)	
Industry dummies	Yes		No		Yes	
Year dummies	Yes		Yes		Yes	

Number of observations	1464	1464	1464
R-squared	0.188	0.169	
Hausman test (χ^2)			49.53
Hausman test (*p*-value)			0.000

Note: Definitions of the variables are given in Table 1. t-statistics are reported in parentheses. a, b, and c indicate significance at 1%, 5%, and 10%, respectively. The result of the Hausman test is to reject the null hypothesis, suggesting that the fixed-effects model may be the preferred specification for these data (Hausman, 1978).

6. Conclusions (บทสรุป)

This study contributes to the literature investigating the relationship between foreign institutional ownership and cash holdings for firms in Thailand, using balanced panel data for the period 2013-2016. The result indicates that greater foreign institutional ownership is associated with higher cash holdings even after controlling for growth opportunities, firm size, leverage, liquid assets, capital expenditures, and operating cash flows.

This finding suggests that foreign institutional ownership has an important impact on the corporate cash-holding decisions of Thai firms. Moreover, they seem to encourage managers to hold sufficient cash reserves to finance investment expenditures, to mitigate the opportunity costs of forgoing valuable investment projects, and to cover the risk of cash shortfalls in the future, all of which are in line with the precautionary saving motive, and this finding is also documented by Vo (2018). Otherwise, firms with greater cash reserves should provide effective institutional capabilities for management monitoring to mitigate agency costs of cash holdings and to prevent the managerial opportunism of excess cash. So, this finding proposes the importance of improving governance practices for managers and policy makers in the Thai stock market.

Furthermore, this paper has crucial implications for regulators and policy makers need to promote long-term investment by foreign institutional investors (i.e., Reviewing investment regulatory and restrictions of foreign institutional investors; Mitigating degree of information asymmetry in equity home bias; Reviewing evaluations of the extractive industries transparency initiative) to get attractive from foreign institutional investment in Thai stock market to improve monitoring role of managements' performance, to enforce corporate governance standards, and to develop governance mechanisms in Thai capital market. In addition, this study explores the financial determinants of cash holdings, such as firm size, leverage, liquid assets, capital expenditures, and operating cash flows in which such factors are able to explain to cash holding decisions in Thai public firms.

Due to this study examines the relationship between foreign institutional ownership and cash holdings and including firm characteristics during 2012 to 2016 that do not cover long-term duration of the post financial crisis period that may have effect on cash holding decisions, therefore, the future research may include this crisis duration, similarly the previous study of the cash holding motive of the ASIAN stock market (e.g., Lian et al., 2011; Song & Lee, 2012).

According to previous empirical works argue that the internal governance factors and ownership structures, for example, board governance characteristics, managerial ownership that have significant impact on cash holding policy in the emerging market (e.g., Kuan et al., 2011; Lee & Park, 2016; Al-Najjar & Clark, 2017) so that the future research should investigate these factors to extend the investigations of corporate governance mechanisms that such factors could more explain the corporate cash policy in Thai stock market.

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