

FOREIGN INSTITUTIONAL OWNERSHIP AND LIQUIDITY: EVIDENCE FROM THAILAND

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Abstract

This paper examines the impact of foreign institutional ownership on stock liquidity in a sample of 950 firm-year observations from 190 companies listed in the Stock Exchange of Thailand (SET), over the period from 2011 to 2015. Multiple regressions were used to examine the relationships between foreign institutional ownership and liquidity measures. Two-stage least squares (2SLS) were also employed to ensure that the regression results were not susceptible to endogeneity problems. After controlling for price, return volatility, and firm size, the results indicated that equity ownership by foreign institutional investors has a negative impact on stock liquidity. The results remain robust even after controlling for endogeneity. The findings of this paper suggest that foreign institutional ownership may increase the degree of information asymmetry between foreign and local investors, and that foreign institutional investors adopt a buy-and-hold strategy following their high ownership in local firms. Both the higher information asymmetry and the inactive trading activity reduce liquidity.

Keywords: Foreign Ownership, Institutional Ownership, Liquidity, Thailand

INTRODUCTION

It is widely accepted that foreign investors are key players in emerging stock markets. Over recent years, the level of ownership and the volume of stock traded by foreign investors, mostly foreign institutions, in emerging markets, has increased dramatically in response to worldwide financial deregulation and the

openness of local stock markets. The participation of foreign institutional investors is expected to bring benefits to domestic markets, with one such benefit being the enhancement of local market liquidity (Rhee & Wang, 2009).

This paper aims to investigate whether higher equity ownership by foreign institutions is associated with better liquidity of firms in an emerging

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market, namely, Thailand. It is interesting to examine the Thai capital market in relation to this issue for the following reasons:

Firstly, the characteristics of the Thai capital market are dramatically different from those of the U.S. and most other developed markets. In particular, the stock market in Thailand is younger, smaller, less sophisticated, more volatile, and substantially less liquid. According to Rhee and Wang (2009), the lack of liquidity is a key determinant for high volatility in emerging markets and can impede stock market development. Bekaert, Harvey, and Lundblad (2007) and Agudelo (2010) have also indicated that investors tend to consider liquidity as a crucial factor when making investments in emerging markets, as their returns can be substantially reduced after accounting for liquidity costs. Despite the importance of stock liquidity for an emerging market such as Thailand, only a limited number of studies have been undertaken in this area (for example, Pavabutr & Sirodom, 2010; Udomsirikul, Jumreornvong, & Jiraporn, 2011; Prommin, Jumreornvong, & Jiraporn, 2014; and Thanatawee, 2016).

Secondly, Thailand is an emerging market where foreign institutional investors have played a pivotal role. Over the period from 2011 to 2015, daily trading by foreign investors accounted for as much as 22 per cent of the total daily trading value in the Stock Exchange of Thailand (SET). Moreover, the average daily trading value of foreign investors has increased substantially from 6.7 billion baht (USD 211 million) to 9.8 billion baht (USD 272 million) over the

same period. Similar to those in other emerging markets, the trading activities of foreign investors in Thailand appear to be dominated by institutional investors who typically have an informational advantage over other types of investors. Due to the increasing roles of foreign institutions in the Thai equity market, an investigation into the link between foreign institutional ownership and liquidity is therefore essential.

The results from this study show that equity ownership by foreign institutions in Thai firms has a negative impact on liquidity. One possible explanation is that the information asymmetry between foreign and local investors increases when foreign institutional investors hold more shares. In an emerging market like Thailand, foreign investors tend to have a large informational advantage over local investors, thereby leading to lower liquidity. Previous studies document that increased foreign ownership is associated with higher information asymmetry and lower liquidity (Brockman & Yan, 2009; Rhee & Wang, 2009; Ng, Wu, Yu, & Zhang, 2016; Vo, 2016). Another possible explanation may be related to the inactive trading by foreign institutional investors. As noted by Rhee and Wang (2009), it is unnecessary for foreign institutional investors to extract more information from trading as they are typically large shareholders, and often become corporate insiders. Accordingly, foreign institutional investors usually adopt a buy-and-hold investment strategy and trade less often, thus decreasing liquidity.

This paper contributes to the existing finance literature in several ways. Firstly,

the findings of this paper shed some light on the inconclusive evidence regarding the liquidity impact of foreign institutional ownership by showing that liquidity deteriorates with higher ownership of foreign institutions. Secondly, most previous studies that have considered the effect of foreign institutional ownership on liquidity have been carried out using data from developed markets, while data from emerging markets has rarely been investigated. This study therefore offers better insights into the roles of foreign institutional investors in emerging markets. Particularly, the results of the current paper are consistent with those in other emerging markets such as Rhee and Wang (2009) in Indonesia and Vo (2016) in Vietnam. Thirdly, research regarding the effect of foreign institutional ownership on liquidity in Thailand has hardly been explored. Hence, this study addresses this issue in the Thai stock market.

LITERATURE REVIEW

The presence of foreign institutions in the local stock market is generally believed to help enhance liquidity. However, the existing empirical evidence regarding the relationship between foreign institutional ownership and liquidity remains inconclusive. Theoretically, two competing hypotheses have often been cited to explain the impact of foreign institutional ownership on liquidity: the information asymmetry hypothesis and the trading hypothesis.

The information asymmetry hypothesis predicts a negative relationship

between foreign institutional ownership and liquidity. It proposes that certain types of investors such as insiders, large shareholders, and institutions are better informed regarding firm value than outside retail investors. Knowing that they are at a disadvantage, less informed investors are less willing to trade against better informed investors, leading to a decline in liquidity (Grossman & Stiglitz, 1980; Glosten & Milgrom, 1985; Kyle, 1985; Easley & O'Hara, 1987). In comparison to local investors, foreign investors, who are normally institutional investors, tend to have superior investment skills, more experience in global capital markets, and higher access to large financial databases (Kalev, Nguyen, & Oh, 2008; Vo, 2016). These advantages increase the information asymmetry between foreign institutional investors and local investors, thereby impairing liquidity.

The information asymmetry hypothesis is supported by several prior studies. For example, Rubin (2007) and Brockman and Yan (2009) found that larger institutional ownership is associated with a higher probability of informed trading. Similarly, Bushee and Goodman (2007) found that changes in institutional holdings were associated with trading of private information. In a related study, Rhee and Wang (2009) showed that foreign institutional shareholdings have a negative impact on the future liquidity of firms listed in the Indonesian stock market. Likewise, a study by Vo (2016) documents a negative relationship between foreign ownership and the liquidity of firms in Vietnam.

Examining a large sample of 27,828 firms from thirty-nine countries worldwide, Ng et al. (2016) found that foreign ownership is negatively associated with stock liquidity.

The trading hypothesis, on the other hand, predicts a positive relationship between foreign institutional ownership and liquidity. It proposes that higher turnover of portfolios can help reduce transaction costs and thus enhance liquidity (Demsetz, 1968; Kothare & Laux, 1995; Domowitz, Glen, & Madhavan, 2001). According to Zheng and Li (2008), market makers have an incentive to quote narrower spreads and larger depths, as doing so increases the number of traders and thus lowers the probability of informed trading, leading to higher liquidity. When the ownership is highly concentrated, however, there are fewer trades due to the lower number of shareholders, thereby decreasing liquidity (Heflin & Shaw, 2000; Rubin, 2007; Jacoby & Zheng, 2010).

Several prior studies document a positive effect of institutional ownership on liquidity, which is consistent with the trading hypothesis. Jennings, Schnatterly, and Seguin (2002) found that higher institutional ownership leads to narrower spreads of stocks traded on NASDAQ. Examining firms listed on NYSE, AMEX, and NASDAQ, Bennett, Sias, and Starks (2003) found that an increase in institutional ownership forecasts higher turnover. Likewise, Rubin (2007) reported that the level of institutional ownership is positively correlated to the liquidity of firms on NYSE, suggesting that institutional investors trade more

often than other investors. Similarly, a recent study by Ajina, Lakhali, and Sougné, (2015) revealed that institutional investors have a positive and significant effect on the liquidity of listed companies in France. The authors argue that frequent trading by institutional investors helps lower trading costs and enhance liquidity.

Given the competing hypotheses and the mixed empirical evidence as discussed above, the prediction regarding the impact of foreign institutional ownership on liquidity in Thailand is therefore ambiguous. Accordingly, the following hypotheses were formulated:

- H₁: Consistent with the information asymmetry hypothesis, there is a negative relationship between foreign institutional ownership and liquidity.
- H₂: Consistent with the trading hypothesis, there is a positive relationship between foreign institutional ownership and liquidity.

METHODOLOGY

Data

This study analyses a sample of companies listed in the Stock Exchange of Thailand (SET) over the period from 2011 to 2015. The data for liquidity, foreign institutional ownership and control variables were obtained from SETSMART, the database provided by the SET. The initial sample consisted of 1,290 firm-year observations. After deleting outliers and firms with missing trading data, the final sample consisted of

950 firm-year observations from 190 firms.

Model Specification

The relationship between foreign institutional ownership and stock liquidity was estimated as follows:

$$LIQ_{i,t} = \alpha + \beta_1 * FINST_{i,t} + \beta_2 * PRICE_{i,t} + \beta_3 * VOLAT_{i,t} + \beta_4 * MCAP_{i,t} + \varepsilon_{i,t} \quad (1)$$

where all variables are described below. The relationship of the variables in equation (1) was first estimated by the panel least squares method. It was then analysed using both fixed effects and random effects panel estimators. Furthermore, a two-stage least square (2SLS) was employed to ensure that the results were not susceptible to endogeneity problems.

Definitions of Variables

Dependent Variable

The dependent variable is stock liquidity ($LIQ_{i,t}$), measured by three alternative dimensions: relative spread (RSPREAD), Amihud's illiquidity ratio (ILLIQ), and the liquidity ratio (LR).

Relative Spread

Relative spread (RSPREAD) is calculated as the difference between the *ask price* and the *bid price* at the end of the day¹, divided by the average of the two prices. This liquidity measure is used by prior studies such as Ginglinger and Hamon (2007), Rhee and Wang (2009), and Jacoby and Zheng (2010). Relative spread is a measure of illiquidity since wider bid-ask spread reduces the probability of trades.

$$RSPREAD_{i,d} = \frac{(Ask_{i,d} - Bid_{i,d})}{(Ask_{i,d} + Bid_{i,d})/2} \quad (2)$$

where $Ask_{i,d}$ and $Bid_{i,d}$ are the best ask and best bid prices of stock i , respectively, at the end of trading day d .

Amihud's Illiquidity Ratio

Amihud's illiquidity ratio (ILLIQ) is calculated as the daily absolute return over the daily trading value. This illiquidity ratio was initially developed by Amihud (2002) and later widely employed by many other researchers such as Rubin (2007), Jiang, Kim, and Zhou (2011), Udomsirikul et al. (2011), and Prommin, Jumreornvong, Jiraporn, and Tong (2016).

$$ILLIQ_{i,d} = |R_{i,d}|/V_{i,d} \quad (3)$$

¹ This paper measures bid-ask spreads at the end of the day because there is no intraday data available from SETSMART. This approach was employed by Gorkittisunthorn, Jumreornvong, and Limpaphayom (2006). Rhee and Wang (2009) also measured the bid-ask spreads at the end of the day for the Indonesian stock market.

where $|R_{i,d}|$ is the absolute return of stock i on day d , and $V_{i,d}$ is the trading value of stock i on day d (million Baht).

Liquidity Ratio

The liquidity ratio (LR) is computed as the daily trading volume over the absolute stock return. According to Prommin et al. (2014), the liquidity ratio can be used as a measure of the ability of a stock to absorb a large amount of trading volume without a significant price change. It is employed by several studies as a proxy for stock liquidity (for example, Amihud, Mendelson, & Lauterbach, 1997; Berkman & Eleswarapu, 1998; Prommin et al., 2014).

$$LR_{i,t} = \sum_t \{VOL_{i,d}\} / \sum_t \{|R_{i,d}|\} \quad (4)$$

where $VOL_{i,d}$ is the trading volume of stock i on day d , and $|R_{i,d}|$ is the absolute return of stock i on day d .

Independent Variables

The main independent variable is foreign institutional ownership (FINST), the proportion of shares held by foreign institutional investors. This paper includes three control variables that have been regularly employed in prior studies (for example, Ginglinger & Hamon, 2007; Rhee & Wang, 2009; Jacoby & Zheng, 2010). These variables are share price (PRICE), return volatility

(VOLAT), and market capitalisation (MCAP). Share price is used to capture the extent to which a higher share price tends to have wider bid-ask spreads. Return volatility, the standard deviation of daily returns over the year, is included as more volatile stock tends to have wider bid-ask spreads and a higher price impact. Market capitalisation is included to control for the effect of firm size on liquidity, since larger firms tend to have higher stock liquidity than smaller ones. In addition, year dummies and industry dummies² are included to control for macroeconomic variations and possible industry effects, respectively.

RESULTS AND DISCUSSION

Descriptive Statistics

Table 1 presents the descriptive statistics of the sample. It shows that the stock liquidity measured by relative spread (RSPREAD), Amihud's illiquidity ratio (ILLIQ), and liquidity ratio (LR), which take the average values of 1.08 per cent, 14.6634, and 2.2418, respectively. The average level of foreign institutional ownership (FINST) is 21.28 per cent. Regarding the control variables, the mean values of the daily closing share price (PRICE), return volatility (VOLAT), and market capitalisation (MCAP) are 33.7460 Baht, 2.1435, and 24,338 million Baht, respectively.

² There are eight industries as classified by the SET, that is, agriculture and food, consumer products, financials, industrials, property and construction, resources, services, and technology.

Table 1: Descriptive Statistics

Variable	Mean	Median	Minimum	Maximum	Std. Dev.
RSPREAD	0.0108	0.0084	0.0031	0.0626	0.0075
ILLIQ	14.6634	0.4543	0.0009	317.9858	41.4668
LR	2.2418	0.7501	0.0003	26.8598	3.6181
FINST	21.2808	14.2800	0.0000	97.1200	21.3143
PRICE	33.7460	15.1100	0.6900	380.3400	50.0129
VOLAT	2.1435	1.9800	0.4500	6.6700	0.8269
MCAP	24,338	6,373	69.3400	405,625	52,124

Notes: RSPREAD is the difference between the *ask price* and the *bid price*, divided by the average of the two prices (%). ILLIQ is the ratio of the daily absolute return to the daily trading value in million Baht. LR is the ratio of the total daily trading volume to the total absolute value of stock returns. FINST is the percentage of shares held by foreign institutional investors. PRICE is the daily closing share price (Baht). VOLAT is the standard deviation of daily returns over the year. MCAP is the daily market capitalisation of stock (million Baht).

Table 2 presents the level of foreign institutional ownership ranked by the market capitalisation quintile. It is notable that the average ownership by foreign institutions in Thai firms over the sample period increases substantially from 15.45 per cent in the bottom quintile to 27.08 per cent in the top quintile. Additionally, in each particular year from 2011 to 2015, the data displays a sizable increase in foreign institutional ownership from the bottom quintile to the top quintile. These results suggest that foreign institutional

investors prefer to hold shares in larger firms.

Univariate Test of Liquidity Differences

Table 3 reports the differences in liquidity when the sample is subdivided into high and low groups by the mean values of the independent variables. The results show that the ILLIQ for firms with higher FINST is significantly higher than that for firms with lower FINST. This finding reveals that firms with higher

Table 2: Foreign Institutional Ownership Ranked by Market Capitalisation

	2011	2012	2013	2014	2015	Average
Bottom quintile	17.56	16.37	16.53	13.57	13.23	15.45
Quintile 2	14.17	17.06	15.85	17.44	17.49	16.40
Quintile 3	20.76	24.13	24.44	24.48	23.18	23.40
Quintile 4	26.69	23.43	24.31	22.96	22.96	24.07
Top quintile	27.49	28.04	26.66	25.76	27.47	27.08
Average	21.33	21.80	21.56	20.84	20.87	21.28

Table 3: Univariate Tests of Liquidity Differences

Independent variables	RSPREAD			ILLIQ			LR		
	High	Low	Diff.	High	Low	Diff.	High	Low	Diff.
FINST	0.0111	0.0103	0.0008 (1.551)	16.7397	11.3306	5.4091** (2.098)	2.0906	2.3547	-0.2641 (-1.097)
PRICE	0.0121	0.0103	0.0178*** (2.775)	16.1502	10.8877	5.2624** (2.374)	1.3269	2.6329	-1.3059*** (-5.468)
VOLAT	0.0129	0.0099	0.0021*** (3.945)	20.6516	10.1975	10.4541*** (3.552)	1.8753	2.7647	-0.8894*** (-3.636)
MCAP	0.0065	0.0119	-0.0054*** (-17.389)	0.1243	18.4000	-18.2757*** (-10.923)	4.2841	1.7187	2.5654*** (7.161)

Notes: The sample is divided into high and low groups using the mean values of the independent variables. RSPREAD is the difference between the *ask price* and the *bid price*, divided by the average of the two prices (%). ILLIQ is the ratio of the daily absolute return to the daily trading value in million Baht. LR is the ratio of the total daily trading volume to the total absolute value of stock returns. FINST is the percentage of shares held by foreign institutional investors. PRICE is the daily closing share price (Baht). VOLAT is the standard deviation of daily returns over the year. MCAP is the daily market capitalisation of stock (million Baht). *t*-statistics are reported in parentheses. ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

foreign institutional ownership have lower stock liquidity. In addition, the results indicate that firms with a higher stock price (PRICE) have lower liquidity, as they have significantly higher RSPREAD, higher ILLIQ and lower LR. Similar findings are obtained for firms with a higher return volatility (VOLAT). Furthermore, the evidence indicates that larger firms (higher MCAP) have higher liquidity, as shown by a significantly lower RSPREAD, lower ILLIQ, and higher LR.

Correlation Matrix

Table 4 provides the correlation matrix of variables used in this study. It shows that FINST has a positive and

significant correlation with RSPREAD, suggesting that liquidity deteriorates as the number of shares held by foreign institutional investors increases. PRICE is found to be positively correlated with ILLIQ but negatively correlated with LR. This suggests that higher stock prices are associated with lower liquidity. A positive correlation coefficient between VOLAT and RSPREAD indicates that a higher return volatility is associated with lower liquidity. However, a positive correlation between VOLAT and LR seems to contradict the general expectation that higher return volatility should be related to a lower liquidity ratio. Nevertheless, it might be possible that stock with a higher trading volume has higher return

volatility.³ Furthermore, the results indicate that larger firms tend to have higher liquidity, as shown by a negative correlation between MCAP and RSPREAD, a negative correlation between MCAP and ILLIQ, and a positive correlation between MCAP and LR. Finally, it can be seen that the correlations between any pair of independent variables lie between -0.7 and 0.7. According to Lind, Marchal, and Wathen (2010), a correlation coefficient ranging between -0.7 and 0.7, for any pair of independent variables, indicates that there is no collinearity problem in the regression analysis.

Foreign Institutional Ownership and Liquidity

The relationship between foreign institutional ownership and liquidity was first estimated using the panel least squares method. The results from Models (1) and (2) in Table 5 indicate that FINST has positive and significant relationships with RSPEAR and ILLIQ. These findings reveal that higher foreign institutional ownership leads to wider spread and a higher illiquidity ratio, thus lower stock liquidity.

Table 4: Correlation Matrix

Variable	RSPREAD	ILLIQ	LR	FINST	PRICE	VOLAT	MCAP
RSPREAD	1						
ILLIQ	0.837***	1					
LR	-0.742***	-0.758***	1				
FINST	0.068**	-0.049	-0.003	1			
PRICE	0.002	0.136***	-0.479***	0.088***	1		
VOLAT	0.200***	0.031	0.125***	0.005	-0.163***	1	
MCAP	-0.619***	-0.779***	0.473***	0.197***	0.393***	-0.137***	1

Notes: RSPREAD is the difference between the *ask price* and the *bid price*, divided by the average of the two prices (%). ILLIQ is the ratio of the daily absolute return to the daily trading value in million Baht. LR is the ratio of the total daily trading volume to the total absolute value of stock returns. FINST is the percentage of shares held by foreign institutional investors. PRICE is the daily closing share price (Baht). VOLAT is the standard deviation of daily returns over the year. MCAP is the daily market capitalisation of stock (million Baht). ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

³ As noted by Prommin et al. (2016), the correlation results should be interpreted cautiously as they do not control for several factors that influence liquidity.

Table 5: Regression Results between Foreign Institutional Ownership and Liquidity

Dependent variable	Panel least squares			Panel fixed effects		
	RSPREAD	ILLIQ	LR	RSPREAD	ILLIQ	LR
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	-3.4251*** (-37.1626)	11.8921*** (25.9214)	-7.5611*** (-25.2275)	-3.0727*** (-13.2697)	13.1477*** (12.7415)	-7.5278*** (-11.4229)
FINST	0.0015*** (2.7489)	0.0169*** (6.1061)	-0.0123*** (-6.8117)	0.0044*** (3.0014)	0.0349*** 5.3846	-0.0244*** (-5.8943)
Ln(PRICE)	0.0947*** (9.8626)	0.3365*** (7.0417)	-1.3498*** (-43.2300)	-0.0625*** (-2.7808)	-0.3318*** (-3.3124)	-0.8744*** (-13.6688)
Ln(VOLAT)	0.2120*** (6.7033)	-0.4619*** (-2.9337)	0.7592*** (7.3805)	0.1409*** (5.3619)	-0.0174 (-0.1487)	0.5674*** (7.5884)
Ln(MCAP)	-0.2103*** (-22.8641)	-1.6156*** (-35.2890)	1.2078*** (40.3800)	-0.1798*** (-6.2469)	-1.5039*** (-11.1253)	1.0293*** (12.5656)
Industry dummies	Yes	Yes	Yes	No	No	No
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R ²	51.89%	68.10%	79.42%	82.86%	90.89%	83.86%
N	950	950	950	950	950	950

Notes: RSPREAD is the difference between the *ask price* and the *bid price*, divided by the average of the two prices (%). ILLIQ is the ratio of the daily absolute return to the daily trading value in million Baht. LR is the ratio of the total daily trading volume to the total absolute value of stock return. FINST is the percentage of shares held by foreign institutional investors. PRICE is the daily closing share price (Baht). VOLAT is the standard deviation of daily returns over the year. MCAP is the daily market capitalisation of stock (million Baht). All liquidity variables were transformed by taking the natural logarithm. *t*-statistics are reported in parentheses. ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

In addition, the results from Model (3) show that FINST is negatively and significantly related to LR. This finding indicates that higher foreign institutional ownership is associated with a lower ability of stock to absorb a larger trading volume. Therefore, the results from the panel least squares show that foreign institutional ownership has a negative

impact on stock liquidity, thereby supporting the information asymmetry hypothesis as proposed in H₁.

The data was further analysed using both fixed effects and random effects panel estimators. The fixed effects model was estimated to account for heterogeneity within the firms. The random effects model was estimated to

capture heterogeneity between firms. For the random effects estimator to be unbiased in a large sample, however, the effects must be uncorrelated with the explanatory variables, an assumption that is often violated (Hill, Griffiths, & Lim, 2012). In this regard, Hausman tests can be carried out to test the null hypothesis of no correlation between random effects and explanatory variables. In the present dataset, the Hausman test results suggested a preference for the fixed effects estimation. Thus, to conserve space, the results for the random effects estimations were not reported.

The results for fixed effects estimations are shown in Models (4), (5), and (6). The results indicate that the coefficient for FINST is significant and positive in Models (4) and (5) and significant but negative in Model (6). These findings reveal that the relative spread is wider, illiquidity ratio is higher, and the liquidity ratio is lower when foreign institutional investors hold more shares. Consistent with the results from the panel least squares estimations, the results from the fixed effects estimations confirm that foreign institutional ownership has a negative effect on liquidity.

Overall, the regression results of the panel data estimations reported in Table 5 indicate that liquidity deteriorates when foreign institutional investors increase their equity ownership in Thai firms. These findings are consistent with the information asymmetry hypothesis and support the results of studies in other emerging markets such as Rhee and Wang's (2009) study in the Indonesian

stock market and Vo's (2016) study in the Vietnam stock market. In addition, the findings are consistent with the negative liquidity impact of institutional investors in developed markets (Heflin & Shaw, 2000, Rubin, 2007), and are also in line with several studies showing that institutional investors are likely to trade on informational advantage (Ali, Durtschi, Lev, & Trombley, 2004; Bushee & Goodman, 2007; Yan & Zhang, 2009).

The negative liquidity impact of foreign institutional ownership in the Thai stock market may also be explained by the inactive trading of foreign institutions. As pointed out by Rhee and Wang (2009), foreign institutional investors are typically large shareholders in emerging markets and their high ownership often makes them corporate insiders, leading to a large informational advantage over outside investors. Accordingly, foreign institutions have no need to trade frequently for price discovery and tend to adopt a buy-and-hold strategy, leading to inactive trading which reduces stock market liquidity.

Possible Endogeneity

In this section, a two-stage least square (2SLS) was estimated to ensure that the regression results obtained in the previous section were not susceptible to an endogeneity problem. This paper employs two instrumental variables, similar to those used in the study of Prommin et al. (2016). The first instrument predicted was FINST. It was constructed by making a linear projection from each firm's foreign institutional ownership in 2011 to the average foreign

institutional ownership of the sample in 2015. The second instrument was the industry-median FINST. The reason for using this variable as an instrument is that the industry-level of foreign institutional

ownership should be highly correlated with the firm-level foreign institutional ownership, while firm-level liquidity is unlikely to be affected by industry-level foreign institutional ownership.

Table 6: 2SLS Regressions between Foreign Institutional Ownership and Liquidity

Dependent variable	First stage		Second stage	
	FINST	RSPREAD	ILLIQ	LR
	(1)	(2)	(3)	(4)
Intercept	10.6584 (1.6956)	-3.7511*** (-10.0550)	11.0276*** (7.5076)	-6.5522*** (-7.4941)
Predicted FINST	0.0995*** (3.7091)			
Industry-median FINST	0.4339*** (3.1574)			
FINST		0.0393*** (3.5571)	0.1442*** (3.3101)	-0.0747*** (-2.8804)
Ln(PRICE)	-0.8234 (-1.4896)	0.9649*** (31.0470)	-0.2445*** (-1.9981)	-0.9146*** (-12.5558)
Ln(VOLAT)	0.2515 (0.3871)	0.1227*** (3.4699)	-0.0751 (-0.5397)	0.5939*** (7.1699)
Ln(MCAP)	0.4631 (0.6444)	-0.1921*** (-5.0028)	-1.5426*** (-10.2028)	1.0741*** (11.6349)
Industry dummies	No	No	No	No
Year dummies	Yes	Yes	Yes	Yes
Adjusted R ²	94.69%	96.37%	87.47%	93.29%
Sargan statistic		2.5023	0.8831	2.4654
p-value		0.1137	0.3473	0.1164
N	950	950	950	950

Notes: RSPREAD is the difference between the *ask price* and the *bid price*, divided by the average of the two prices (%). ILLIQ is the ratio of the daily absolute return to the daily trading value in million Baht. LR is the ratio of the total daily trading volume to the total absolute value of stock returns. FINST is the percentage of shares held by foreign institutional investors. PRICE is the daily closing share price (Baht). VOLAT is the standard deviation of daily returns over the year. MCAP is the daily market capitalisation of stock (million Baht). All liquidity variables are transformed by taking the natural logarithm. *t*-statistics are reported in parentheses. ***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

Table 6 presents the 2SLS results. In the first stage, the dependent variable is FINST. The results from Model (1) show that both instrumental variables are highly significant at the 1 per cent level, indicating that the instruments are not weak. In the second stage, the results show that the coefficients on FINST are negative and significant in Models (2) and (3) with RSPREAD and ILLIQ as the dependent variables, and that the coefficient on FINST is positive and significant in Model (4) with LR as the dependent variable. Consistent with the regression results, the 2SLS results demonstrate that higher foreign institutional ownership is associated with lower liquidity. To check the validity of the instrumental variables, the Sargan test of over-identifying restrictions was performed. Since the Sargan statistics were insignificant, both instruments were identified as acceptable. Overall, the 2SLS results are in line with the regression results in Table 5, suggesting that the endogeneity problem is not likely to be a serious issue in this study.

CONCLUSION

Foreign institutions have dramatically increased their investments in emerging markets over recent years. An increased participation of foreign institutional investors is normally expected to enhance local market liquidity. This paper tests whether this expectation materializes in an emerging market like Thailand, by employing a dataset containing firms listed on the Stock Exchange of Thailand (SET) over

the period from 2011 to 2015. After controlling for stock characteristics and correcting for potential problems of endogeneity, the evidence indicates that higher foreign institutional ownership is associated with lower liquidity. The findings are robust to different liquidity measures.

One possible reason explaining the negative impact of foreign institutional ownership on the liquidity of Thai firms, is that foreign institutional ownership exacerbates the information asymmetry between foreign and local investors. Another possibility is that the high equity ownership by foreign institutions makes them corporate insiders. With a great informational advantage, foreign institutional investors do not need to trade often for price discovery and tend to adopt a buy-and-hold strategy, which leads to inactive trading and also contributes to lower liquidity. Additionally, high foreign institutional ownership may result in ownership concentration, which also impairs liquidity.

The findings have implications from both managerial and academic points of view regarding the link between foreign institutional ownership and liquidity in Thailand. For policymakers and managers, attempts should be made to reduce information asymmetry by closely monitoring foreign institutional shareholding and adopting measures to reduce ownership concentration (for example, increasing the free float). In addition, liquidity can be enhanced through better corporate governance mechanisms. For investors, the information regarding the liquidity impact

of foreign institutional ownership can help them to make better decisions on investments in the Thai stock market.

Since the findings of this study may be applicable only to listed companies in Thailand, future research should try to extend the analysis to other emerging markets. Future studies may be required, to examine the liquidity impact of other factors, such as domestic institutional ownership, ownership dispersion, and insider trading. It would also be interesting to investigate the impact of foreign institutional ownership on stock return volatility.

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