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Do Institutional Investors Aggravate or Attenuate Stock Return Volatility? Evidence from Thailand

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Abstract

This study investigates whether institutional investors increase or decrease the volatility of stock returns in the Thai stock market. For the purpose we used the data from SETSMART, a database provided by the Stock Exchange of Thailand (SET). Our sample is a balanced panel data covering 3,160 firm-year observations from 316 nonfinancial firms listed on the SET from 2011 to 2020. We analyze the link between institutional holdings and the volatility of stock returns by the pooled Ordinary Least Squares (OLS) model, the fixed effects model, and the random-effects model. In particular, we regress the stock return volatility on institutional ownership while controlling for firm size, financial leverage, growth opportunities, and stock turnover and accounting for industry effects and year effects. Our results indicate institutional investors' positive and significant influence on the volatility of the stock returns. Additionally, we performed the dynamic Generalized Method of Moment (GMM) estimator to alleviate concerns of possible endogeneity. The result still shows a positive impact of institutional investors on the volatility in stock returns. Overall, the findings of this study suggest that an increase in the volatility of stock returns in the Thai stock market may stem from a higher proportion of equity held by the institutional investors.

Keywords: Volatility, Stock Return, Institutional Investor, Institutional Ownership, Thailand

JEL Classification Code: G10, G20, G23, G30, G32

1. Introduction

Institutional investors are widely regarded as crucial participants who provide liquidity and improve firm performance in global stock markets. Over recent years, their presence has increased steadily in established markets and emerging ones. Prior studies (for example, Li et al., 2011; Vo, 2016; & Masum et al., 2020) show that institutional investors benefit stock markets by increasing market efficiency, escalating information disclosure, improving corporate governance, enhancing liquidity, and stabilizing stock returns. However, many authors are concerned about institutional investors' investment practices, which they believe may bring about stock prices to diverge from their

fair values. For example, institutional investors frequently trade stocks in lockstep, destabilizing stock prices and increasing the volatility in stock returns (Choi & Skiba, 2015). According to Froot et al. (1992), managers are concerned about excessive stock return volatility since it might increase a firm's perceived riskiness, thus increasing the cost of capital. Moreover, Naufa et al. (2019) find a solid association between the volatility of stock markets and the 1997 Asian financial crisis and the 2007–2008 global economic crisis.

Research into the impact of institutional investors on the stock return volatility has yielded incongruent results from a previously conducted research. On the one hand, several papers have found a negative association between institutional ownership and the volatility of stock returns, indicating a stabilizing effect of institutional investors on stock prices (Cohen et al., 2002; Bohl et al., 2009; Vo, 2016; Boon & White, 2015; Dumrongwong, 2020). On the other hand, numerous papers have documented a positive link between institutional holdings and the volatility of stock returns, implying that institutions aggravate the stock return volatility through their investments (Potter, 1992; Sias, 1996; Bushee & Noe, 2000; Chen et al., 2013). Until now, it has

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been ambiguous whether institutional investors exacerbate or attenuate the volatility of stock returns, and it is still the subject of heated debate. As a result, additional empirical evidence is required to shed light on this issue.

While most of the existing studies are replete with results from developed countries, little is known about the influence of institutional investors on the volatility of stock returns in emerging markets. This paper contributes to the literature by analyzing non-financial firms listed on the Stock Exchange of Thailand (SET). The Thai stock market is a riveting place to research this topic for various reasons. To begin, Thailand is the world's leading emerging market (Khanthavit, 2020). At the end of the first quarter of 2021, it was one of 27 countries included in the MSCI Emerging Market Index (Investopedia, 2021). In addition, Thailand's capital market characteristics contrast sharply with developed countries. Like most emerging markets, the SET is characterized by high instability and significant volatility easily influenced by various uncertainties, including a political or financial crisis. Finally, the current data of this study show that the level of equity ownership held by institutions in nonfinancial companies listed on the SET from 2011 to 2020 has been substantial between 31.45 percent and 43.59 percent. Despite this high level of institutional ownership, research into the link between institutional holdings and the volatility of stock returns in Thailand is still limited.

Considering the consequential level of equity held by institutions in the Thai capital market, we investigate the connection between institutional holdings and the volatility of stock returns using a sample of 316 nonfinancial companies listed on the SET from 2011 to 2020. Controlling company size, financial leverage, growth opportunities, and stock liquidity, as well as considering the likelihood of endogeneity, we document that the volatility of stock returns increases when institutional investors hold more shares. Hence, our finding implies that institutional investors aggravate the volatility of stock returns in the Thai stock market.

This research article adds to the current body of knowledge in the following ways: First, it reconciles contradictory findings of institutional investors' impact on the stock return volatility by demonstrating that the volatility of stock returns increases as institutional investors acquire more shares. Second, the paper gives insight into how institutions influence the volatility of stock returns in an emerging market such as Thailand, where this research topic is absent. Third, the study is a jumping-off point for future research exploring the role of institutional investors in other emerging countries.

2. Literature Review

The empirical results regarding the impact of institutional investors on the volatility of stock returns are inconclusive.

On the one hand, many papers have reported that the volatility of stock returns increases as institutional investors hold more shares, implying that institutional investors exacerbate stock return volatility. Among other things, Potter (1992) demonstrates that equity ownership of institutions is positively related to the volatility of stock returns on the days following the earnings announcement. Additionally, Sias (1996) finds that an increase in institutional holdings leads to higher stock return volatility, even when market capitalization is considered. On the other hand, according to the findings of Bushee and Noe (2000), the volatility of stock returns increases as transient institutions obtain more shares. Chen et al. (2013) investigated a sample of 1,458 listed companies in the Chinese stock markets from 1998 to 2008. They find that the volatility of stock returns has a positive relation with equity held by both foreign and domestic institutional investors even after considering ownership structure, firm size, financial leverage, stock turnover, and control for possible endogeneity issues.

On the other hand, numerous papers have found a negative association between institutional ownership and the volatility of stock returns, indicating a stabilizing effect of institutional investors on the stock market. For example, Gompers and Metrick (2001) demonstrate that the volatility of stock returns declines as institutional investors acquire additional shares. In a similar vein, Cohen et al. (2002) present empirical evidence that the volatility of stock returns in the United States drops as the ownership of institutions increase, demonstrating a stabilizing effect of institutional investors on the stock market. Additionally, according to Brzeszczyński and Wilfling (2006), domestic institutional investors reduce the stock return volatility and stabilize the stock price. During the pension system reform in Poland in 1999, Bohl et al. (2009) discovered that an increase in institutional ownership caused by pension fund investment activities resulted in a temporary change in the volatility of stock returns. However, there is no evidence that institutional investors have destabilized stock prices but rather a stabilizing impact of institutions on the stock return index.

Vo (2016) examines data from 268 listed companies in Vietnam from 2006 to 2012 and finds that the volatility of stock returns decreases as institutions' equity ownership increases. Che (2018) investigates the impact of several types of investors on the volatility of stock returns in the Oslo stock market from 1992 to 2007. The volatility of stock returns significantly decreases as domestic institutional investors hold more shares. Similarly, Aloui and Jarboui (2019) find a negative and statistically significant link between domestic institutional holdings and the volatility of stock returns in a sample of 89 companies listed on the French stock market over the period 2006–2013, implying a stabilizing benefit provided by domestic institutional investors to the stock

market. In a recent study, Dumrongwong (2020) examines a sample of 179 initial public offerings (IPOs) listed on the SET from 2001 to 2019 and discovers that equity ownership of institutional investors has a significant and negative relationship with the volatility of stock returns of IPOs. This research paper thus provides evidence of a stabilizing effect provided by institutional investors in the Thai stock market. Finally, recent research by Chaudhary (2021) examines a dataset of 320 companies listed on India's National Stock Exchange (NSE) between 2011 and 2019. The author reports that the stock return volatility is negatively influenced by institutional investors, particularly pressure-insensitive (PI) institutions. Hence, the results suggest that institutional investors lessen the volatility of stock returns in the Indian stock market. This paper also shows a nonlinear impact of institutional investors on the volatility of stock returns, which has previously been overlooked. The relation between institutional holdings and the volatility of stock returns is significantly negative when the level of equity held by institutions is low but significantly positive when the level of equity held by institutions is high.

Several hypotheses have been advanced to describe the still-unresolved influence of institutional investors on the volatility of stock returns. The information asymmetry hypothesis is one of the most frequently cited arguments. In comparison to other types of investors, institutional investors are better informed about the value of a company. In addition, they have superior investment skills and expertise in global capital markets and greater access to vast financial databases. Accordingly, institutional investors tend to pay more for an excellent deal to reap the benefits of these advantages. As a result, institutions' willingness to raise prices leads to higher volatility of stock returns (Lin et al., 2007). Hence, the information asymmetry hypothesis predicts a positive link between institutional holdings and the volatility of stock returns. Nonetheless, some authors argue that greater institutional ownership leads to increased data collection, higher data quality, and fewer information assessment errors (Boone & White, 2015; Vo, 2016; Parwar et al., 2021). This argument backs up the theory that higher institutional holdings lead to narrower information asymmetry and attenuated volatility of stock returns. As a result, the information asymmetry hypothesis also predicts a negative link between institutional holdings and the volatility of stock returns.

Similarly, the buy-and-hold hypothesis could explain why equity ownership of institutions has a negative and significant impact on the volatility of stock returns. Since institutional investors have higher access to more extensive databases and better assess the fair value of stocks than other investors, they do not need to trade frequently to obtain additional information about stocks. Furthermore,

institutional investors typically use a buy-and-hold strategy, which reduces stock return volatility (Vo, 2016).

The institutional turnover hypothesis is another common argument used to explain institutional investors' volatility impact. That is, institutional investors may rebalance their portfolios more frequently than other investors because they have cheaper transaction costs and higher access to better sources of information. Consequently, institutional investors' excessive portfolio turnover and frequent trading exacerbate stock return volatility (Karpoff, 1987). Therefore, the turnover hypothesis predicts that higher institutional holdings result in higher volatility of stock returns. Additionally, the institutional herding hypothesis, which states that institutional investors follow each other when buying and selling stocks, could explain why the volatility of stock returns increases as institutions hold more shares. Institutional investors may engage in excessive trading due to this herding behavior, thus increasing the volatility of stock returns. Several papers support the institutional herding hypothesis, including Dennis and Strickland (2002) and Choi and Skiba (2015).

According to the above discussions, it is unclear whether institutional investors aggravate or attenuate stock return volatility. We, therefore, propose the following competing hypotheses:

H1: Institutional investors aggravate the volatility of stock returns.

H2: Institutional investors attenuate the volatility of stock returns.

3. Research Methodology

3.1. Data and Sample

We obtain the volatility of stock returns, institutional ownership, and firm characteristics from www.setsmart.com, an official website provided by the Stock Exchange of Thailand (SET). Our sample includes nonfinancial firms listed on the SET from 2011 to 2020. We exclude banks, financial institutions, and insurance companies from our analysis because their operating activities and financial statements are distinct from those of listed companies in other industries. Additionally, the sample firms must be listed and continue to be listed on the SET for the entire sample period. Initially, 3,300 firm-year observations are included in the sample. To mitigate the impact of outliers, we winsorize the data at the 1 percent boundary. After deleting firms with missing data and eliminating outliers, our final sample comprises a balanced panel data set with 3,160 firm-year observations from 316 nonfinancial firms collected over a period of 10 years.

3.2. Model Specification

The model used in this study closely resembles Vo (2016). The following specification approximates the relationship between institutional ownership and the volatility of stock returns:

$$\begin{aligned} \text{VOL}_{i,t} = & \alpha + \beta_1 * \text{INST}_{i,t} + \beta_2 * \text{SIZE}_{i,t} \\ & + \beta_3 * \text{LEV}_{i,t} + \beta_4 * \text{MTB}_{i,t} \\ & + \beta_5 * \text{TOVER}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

The dependent variable is the annual volatility of stock returns ($\text{VOL}_{i,t}$), which is calculated as the standard deviation of daily stock return over a year:

$$\text{VOL}_{i,t} = \sqrt{\frac{1}{n-1} \sum_{k=1}^n (\text{return}_{i,k} - \text{MEAN}_{i,t})^2} \quad (2)$$

Where $\text{return}_{i,k}$ is the daily return of stock i in day k ; n is the number of trading days of stock i in a year; $\text{MEAN}_{i,t}$ is the annual average of stock returns of firm i in year t .

Institutional ownership (INST) is the primary independent variable, indicating the proportion of equity held by institutional investors. Some firm characteristics that have been shown to affect the stock return volatility in previous literature are employed as control variables. These firm characteristics include (1) firm size (SIZE) is the natural logarithm of the company's total assets. According to Sias (1996), it is critical to account for firm size because the regression result may be erroneous if the size effect is not considered. Moreover, Sias (1996), Dumrongwong (2020), and Thanatawee (2021) demonstrate that larger firms' stock returns are less volatile than those of smaller firms; (2) financial leverage (LEV) is measured as the total debt divided by total assets. Vo (2016) discovers that firms financed with more debt have higher stock return volatility; (3) market-to-book ratio (MTB) is the stock price divided by the book value per share. It is included to control for potential growth opportunities. Typically, firms with a higher MTB ratio tend to have greater growth opportunities

(Hotchkiss & Strickland, 2003). In addition, Malkiel and Xu (2003) find a positive link between growth prospects and the volatility of stock returns, and (4) stock turnover (TOVER) is the daily volume of shares traded divided by the number of outstanding shares over the previous 12 months. Aloui and Jarboui (2019) and Thanatawee (2021) document that stock turnover is positively related to stock return volatility. Finally, we include industry dummies and year dummies in the model to account for industry effects and unobserved macroeconomic variations.

4. Empirical Results

4.1. Descriptive Statistics

Descriptive statistics for stock return volatility, institutional ownership, and control variables are reported in Table 1. The volatility of stock returns (VOL) ranges from a low of 0.3220 to a high of 11.4104. The average institutional ownership (INST) is 38.15 percent, ranging from 0 to 98.48 percent. On average, firm size (SIZE), which is defined as the natural logarithm of total assets, is 8.7490; financial leverage (LEV) is 42.48 percent; market to book ratio (MTB) is 2.0319; stock turnover (TOVER) is 91.62 percent.

4.2. Differences in Stock Return Volatility

To determine whether firms with varying characteristics exhibit significantly different stock return volatility, we use the average values of independent variables to split the sample firms into high and low groups and then compare the volatility of stock returns between the two groups. The results in Table 2 reveal that the volatility of stock returns (VOL) is significantly higher for firms with greater institutional ownership (INST). This finding implies that institutional investors contribute to increased volatility in stock returns. In addition, the results indicate that the volatility of stock returns (VOL) of larger firm size (SIZE) is significantly lower than that of smaller firms. Similarly, the volatility of stock returns (VOL) of firms with higher market-to-book

Table 1: Descriptive Statistics

Variables	Obs.	Mean	Median	Minimum	Maximum	Std.Dev.
VOL	3,160	2.5465	2.2297	0.3220	11.4104	1.3288
INST	3,160	38.1481	35.3850	0.0000	98.4800	29.2103
SIZE	3,160	8.7490	8.5400	4.9900	14.7500	1.5607
LEV	3,160	0.4248	0.4300	0.0000	0.9800	0.2073
MTB	3,160	2.0319	1.3100	0.1200	21.7900	2.2280
TOVER	3,160	91.6210	40.4100	0.0300	964.3200	136.9420

ratio (MTB) is significantly lower than that of firms with lower market-to-book ratio (MTB). Further, we find that stock return volatility (VOL) is significantly higher for firms with higher stock turnover (TOVER). However, the stock return volatility between the two groups is not significantly different when the sample is divided by the mean level of financial leverage (LEV).

4.3. Correlation Matrix

The correlation matrix of variables is presented in Table 3. It shows a significant and positive correlation between institutional ownership (INST) and the volatility of stock returns (VOL). This finding suggests that a higher proportion of equity held by institutional investors contributes to increased volatility in stock returns. In addition, the results indicate firm size (SIZE) is negatively correlated with the volatility of stock returns (VOL), implying that larger firms have lower stock return volatility. Similarly, the market-to-book ratio (MTB) is negatively correlated with the volatility of stock returns (VOL). This finding suggests that firms with higher growth potential have lower volatility in their stock returns. Further, we find a positive and significant

correlation between stock turnover (TOVER) and the volatility of stock returns (VOL). Thus, stocks with a higher turnover rate tend to be more volatile. Overall, this study has no severe multicollinearity problem since the absolute values of correlation coefficients are less than 0.7 (Lind et al., 2017).

4.4. Institutional Ownership and Stock Return Volatility

The relation between institutional ownership (INST) and the volatility of stock returns (VOL) is shown in Table 4. The pooled OLS estimation in Model (1) demonstrates that the proportion of equity held by institutions (INST) is positively related to the volatility of stock returns (VOL). This finding suggests that the volatility of stock returns increases as institutional investors acquire more shares. Therefore, the pooled OLS result supports H1. In addition, we observe a significantly negative relation between firm size (SIZE) and the volatility of stock returns (VOL). This finding implies that, compared with smaller firms, larger firms have lower volatility of stock returns (VOL). Further, we detect a significantly positive link between financial leverage (LEV) and stock return volatility (VOL). Similarly, we document a positive and significant coefficient on stock turnover (TOVER). This result suggests that stocks with higher turnover have higher volatility of stock returns. However, we observe no significant link between the market-to-book ratio (MTB) and the volatility of stock returns (VOL).

We continue to examine the association between institutional holdings and the volatility of stock returns by employing the fixed effects estimation and the estimation of the random effects. For panel data analysis, Wooldridge (2016) suggests that it is more appropriate to use the fixed effects and the random effects models than the pooled OLS model because they consider the nature of panel data and unobserved heterogeneity. In addition, we perform the Hausman (1978) test to determine whether the fixed effects model or the random-effects model is more suitable for our

Table 2: Differences in Stock Return Volatility Classified by Independent Variables

Independent Variables	VOL		Difference in VOL
	High	Low	
INST	2.6252	2.4703	0.1549***
SIZE	2.4125	2.6586	-0.2462***
LEV	2.5331	2.5702	-0.0370
MTB	2.4602	2.5916	-0.1314**
TOVER	2.6617	2.5040	0.1576***

Notes: ***, **, * denote statistical significance at 1%, 5%, and 10%, respectively.

Table 3: Correlation Matrix

Variables	VOL	INST	SIZE	LEV	MTB	TURN
VOL	1					
INST	0.097***	1				
SIZE	-0.316***	0.361***	1			
LEV	-0.032	-0.051**	0.403***	1		
MTB	-0.042**	0.123***	0.133***	0.163***	1	
TOVER	0.237***	-0.210***	-0.007	0.180***	0.054***	1

Notes: ***, **, * denote statistical significance at 1%, 5%, and 10%, respectively.

Table 4: Impact of Institutional Ownership on Stock Return Volatility

Independent Variables	Dependent Variable: VOL			
	(1)	(2)	(3)	(4)
	Pooled OLS	FE	RE	Dynamic GMM
Constant	5.4880*** (33.0992)	6.2956*** (12.9770)	5.9595*** (24.0168)	
VOL(-1)				0.0246 (0.2872)
INST	0.0041*** (5.1859)	0.0071*** (3.4735)	0.0054*** (4.0169)	0.2729*** (3.2469)
SIZE	-0.3101*** (-18.5805)	-0.4180*** (-7.3686)	-0.3650*** (-12.2262)	2.1659*** (3.0733)
LEV	0.6371*** (5.5046)	0.7953*** (4.2490)	0.6732*** (4.3310)	4.8115 (1.2188)
MTB	-0.0125 (-1.2467)	0.0521*** (4.1146)	0.0379*** (3.3701)	-0.6221*** (-3.1822)
TOVER	0.0025*** (15.4326)	0.0023*** (16.0439)	0.0023*** (16.7254)	0.0127*** (7.6978)
Industry dummies	Included	Not Included	Not Included	Not Included
Year dummies	Included	Included	Included	Included
Hausman (χ^2)			12.9544	
Adjusted R^2	0.2606	0.5951	0.2691	
J-statistic				65.2645***

Notes: The values in parentheses are *t*-statistics. ***, **, * denote statistical significance at 1%, 5%, and 10%, respectively.

data set. In general, the random-effects model appears to be better because it allows for both within and between firm variations. In contrast, the fixed-effect model takes into account only within-firm variation. However, the random-effects model is prone to bias in a large sample because the effects and the explanatory variables are likely correlated (Hill et al., 2018). In this case, one can check if the value of Hausman Chi-square (χ^2) is statistically significant. If so, the fixed effects model is preferred to the random-effects model.

The fixed effects (FE) and the random effects (RE) estimations are shown in Model (2) and Model (3), respectively. They demonstrate that equity held by institutions (INST) has a significantly positive relationship with the volatility of stock returns (VOL). However, the insignificant value of Hausman (χ^2) indicates that the random effects (RE) estimation is preferable to the fixed effects (FE) model. Hence, hypothesis H1 is supported. Furthermore, the results for the control variables show that the coefficient of firm size (SIZE) is significantly negative. This finding indicates

that, compared to smaller firms, larger firms have lower stock return volatility. Additionally, a significantly positive coefficient on the market-to-book ratio (MTB) indicates more volatility of stock returns for firms with higher growth opportunities. Further, we document a significantly positive coefficient on stock turnover (TOVER), which suggests that the stock returns of firms with higher stock turnover are more volatile. Overall, Table 4 indicates that the volatility of stock returns increases as institutional investors hold more shares. Hence, the findings of this studies suggest that the institutional investors increase the volatility of the Thai stock market. The evidence that institutional ownership has a positive link with the volatility of stock returns is consistent with prior studies such as Potter (1992), Sias (1996), Lin et al. (2007), Dennis and Strickland (2002), Choi and Skiba (2015), and Che (2018), but contradicts the results of Gompers and Metrick (2001), Cohen et al. (2002), Bohl et al. (2006), Bohl et al. (2009), Boone and White (2015), Vo (2016), and Dumrongwong (2020).

To cope with possible endogeneity problems, we employ the dynamic generalized method of moment (GMM) estimation of Arellano and Bond (1991) to investigate the relationship between institutional holdings and the volatility of stock returns. The dynamic GMM estimation can overcome endogeneity problems and is suitable for analyzing a short time series and wide cross-section panel data (Vo, 2016). The estimation result of the dynamic GMM model is presented in Model (4) of Table 4. It shows that the relation between institutional ownership and the volatility of stock returns is significantly positive. Therefore, the result is consistent with the estimation by the random-effects model. In addition, we use the Sargan test to ensure that the instruments used in the dynamic GMM estimation are valid and that the models do not exhibit over-identification problems. The significance of the J-statistic indicates that the models are valid and not susceptible to endogeneity problems.

5. Conclusion

This paper tests whether institutional investors exacerbate or alleviate volatility of the stock returns. For the purpose a sample of 3,160 firm-year observations from 316 nonfinancial firms listed on the SET is done for a period of ten years from 2011 to 2020. We document a positive link between equity held by institutions and the volatility of stock returns even after accounting for firm size, financial leverage, growth opportunities, stock turnover, and possible endogeneity. Hence, the result suggests that institutional investors aggravate the volatility of stock returns. This finding contributes to a better understanding of how institutional investors influence the stock return volatility in the Thai stock market. It is beneficial for policymakers to identify methods for mitigating the volatility impact of the institutional investors. Additionally, investors can make more informed investments in the Thai listed companies by considering the increased volatility of stock returns stemming from institutional investors' investment activities. Future research may further classify institutional investors as foreign or domestic to better distinguish their influences on stock return volatility.

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