**Do institutional investors stabilize stock return? Evidence from emerging market IPOs.**

**Abstract**

The literatures on institutional ownership and stock return volatility often focus on developed markets rather than emerging markets. However, the volatility is more profound in the emerging markets, especially among IPO firms, due to the small market size in emerging equity markets as well as the high uncertainty of stock returns in the early days post IPO.

The objective of this research is twofold: investigate how institutional ownership related to stock return volatility of IPOs in emerging market and examine the relationship between underpricing and stock return volatility in emerging market. Thai IPO provides an excellent setting with holding data of institutional investors on IPOs over a period of 19 years. The data cover the new equity issuance listed on the Thailand Stock Exchange (SET) for the period 2001–2019.

Controlled for heteroskedasticity and popular controls for stock return volatility, the empirical results suggest that institutional ownership is negatively associated with the stock return volatility in the early days after IPO. The results are interpretable in favor of a stabilizing effect on stock returns induced by institutional investors and outline the importance of institutional investors in maintaining the stability in emerging stock markets.

*Keywords*: Institutional investors, Information asymmetry, Volatility

*JEL Classification*: G14, G23, G32

**Introduction**

Institutional investors, who manage and own large portions of US and emerging market equities, are viewed by managers, directors, and regulators as among the most important market participants (Parrino, Sias, and Starks, 2003; Graham, Harvey, and Rajgopal, 2005). Although institutional investors exhibit heterogeneous investment and trading strategies (Bushee and Noe, 2000; Gillan and Starks, 2000), little is known about how they impact firms' trading environment and firms’ public information production. Given that a firm's information environment affects investment, liquidity and risk, understanding institutional investor influence on this information environment has important capital market implications (see Grossman and Stiglitz, 1980; Verrecchia, 1983; Myers and Majluf, 1984; Boone and White 2015; among others).

Prior researches documents a relationship between institutional ownership and the information environment (for example Healy, Hutton, and Palepu, 1999; Bushee and Noe, 2000; Ajinkya and Bhojraj ;Sengupta, 2005). It has been proposed that higher institutional ownership is associated lower information asymmetry due to more information provided to the market in terms of greater management disclosure, analyst coverage, and liquidity (Boones and White, 2015).

To the extent that institutional ownership and information asymmetry is related, it is logical to investigate the relationship in the environment with the present of information asymmetry. Initial public offering (IPO) is one of the well-known corporate events that has been documented to have an association with high degree of information asymmetry. Many information asymmetry literatures posit that information asymmetry is an important factor that drive the initial returns of IPOs upwards in the early days after IPO (the phenomena are known as underpricing[[1]](#footnote-1)). For decades, researchers have been documenting that underpricing is the phenomenon cause by information asymmetry (Rock, 1986; Allen and Faulhaber, 1989; Benveniste and Spindt,1989; Grinblatt and Hwang, 1989, Welch, 1992, and Aggarwal, Krigman, and Womack, 2002; Chung, Kim and Ryu.,2017; among others).

In most literatures related to documenting of IPO underpricing, the stock return volatility plays an important role. There is a common impression that, stock returns volatility and underpricing are corelated[[2]](#footnote-2), and that the stock returns volatility in the early days after IPO are often used as a proxy for information asymmetry (ie, uncertainty) [see Ritter 1984, Bhagat and Frost (1986), Booth and Smith (1986), Miller and Reilly (1987), Barry, Muscarella, Peavy, Vetsuypens, (1990), Hansen and Torregrosa (1992), Wang, Chan, and Gau (1992), Aggarwal (2000), Ellis ,Michaely, and O’Hara (2000), Habib and Ljungqvist (2001), Hansen (2001) among others]. These prior researches lay an important contribution for this research as they suggest that future researches involving the volatility of IPOs should be reviewed in the context of information asymmetry.

It has been proposed that institutional holdings and stock return volatility are corelated. Prior researches about the relationship between institutional holdings and volatility are broadly categorized into two school of thoughts. On one hand, it is hypothesized that institutional investors play a stabilizing role in financial markets, therefore an increase in institutional holdings should result in a decrease in volatility. The main argument behind this hypothesis is that greater institutional ownership may imply greater information gathering and/or smaller information assessment errors. Institutional investors are typically viewed as rational investors who has more information than individual investors (hence, they should be less subject to noise trading). Many literatures support this view and document that higher institutional ownership is associated with lower information asymmetry and lower stock return volatility. (Foucault, Sraer and Thesmar,2011; Boone and White 2015 among others). These prior literatures lay an important foundation for the hypothesis in this paper.

On the other hand, some researchers argue that the relationship between institutional investors and volatility should be positive. For example, Sias (1996) empirically found a positive contemporaneous association between the level of institutional ownership and security return volatility after accounting for capitalization. Some evidences suggest that institutional investors follow a momentum strategy (Grinblatt and Keloharju, 2000), and momentum trading increases stock return volatility (De Long et al., 1990). Hence, the question whether do instructional investors really increases volatility warrants an empirical investigation.

Although whether institutional investors increase or decrease volatility is a matter of ongoing debates, existing literatures provide valuable prior knowledge to the field: that institutional holdings and stock return volatility should be related. While most of existing literatures examined the data from developed financial markets, little is known whether the same trend persist in emerging economies. Given that 1) emerging markets is characterized by a high level of information asymmetry (as pointed out by Yan and Luis ,2013; Chung, Kim and Ryu, 2017 among others) and 2) researchers has been proposing that IPO markets are characterized by a high level of information asymmetry surrounding the event (Rock 1986; Aggarwal, Krigman, and Womack, 2002; Chung, Kim and Ryu.,2017 among others), it is particularly interesting to investigate the relationship between institutional holdings and stock return volatility from the data from emerging-economy IPOs.

This research extends the literatures by empirically investigates the evidence using Thai IPO sample issued during the years 2001-2019. Controlled for popular controls of stock return volatility and potential heteroskedasticity, it was found that that volatility is lessen when higher portion of stocks are owned by institutional investors. The results, consistent with Boone and White 2015, are interpretable in favor of a stabilizing effect on stock returns induced by institutional investors. In summary, the results presented in this paper support the view that institutional investors play a stabilizing role in emerging markets and outline the importance of institutional investors in maintaining the stability in emerging stock markets.

The remainder of the paper is organized as follows. The next section contains a brief review of the literature regarding intuitional ownership and its implications stock return volatility (and correspondingly the degree of underpricing). The next section describes the hypotheses, data and the research methodology followed in this paper. The empirical results are then presented and discussed. The final section contains conclusions, research limitations and some suggestions for future researches.

**Review of the literatures**

*High volatility in emerging markets and the role of institutional investors.*

It has been proposed that the volatility of emerging economies is more profound compared to developed markets. For example, Yan and Luis (2013) show that in comparison to the U.S. and other developed countries, emerging economies suffer much more severe prolonged impacts from uncertainty. Giorgio and Selahattin (1997) study the dynamics of expected stock returns and volatility in emerging financial markets, and find that emerging markets exhibit higher conditional volatility and conditional probability of large price changes than mature markets.

Most securities commission have a mandate to protect consumers, promote disclosure, and enhance stability (ie, reduce volatility). To the extent that emerging market has higher volatility, a logical question for market regulators, in terms of policy implementation, would be to find and to design policies to control the volatility in order to promote stability. To provide contexts to such question, this paper primarily focusses on the effect of institutional ownership toward volatility of newly listed firms (ie, IPOs). IPOs are known to have high uncertainty (and high volatility) and it has been proposed that institutional ownership is related to the uncertainty (discussed later).

Despite higher volatility in the emerging markets, the majority of literature on institutional ownership and stock return volatility seems to focus more on developed markets such as the U.S. and small emerging economies are often ignored. As noted by Xuan (2016) that “the literature on institutional ownership and stock return volatility often ignores small emerging countries” Xuan (2016) pp.54. In order to fill this research gap, this paper extend the literature by investigating the effect of institutional ownership and stock return volatility in an emerging market: Thailand.

The Thai stock market is an emerging market that is not too extreme in either end. At the end of 2018, the Stock Exchange of Thailand (SET) ranks 8th out of twenty-four Emerging stock exchanges based on market capitalization, according to MSCI classification[[3]](#footnote-3). Thus, compared to other Emerging exchanges, the SET is relatively closer to the ‘‘average emerging exchange’’ when it comes to market capitalization. In addition, in terms of data availability, Thai IPOs, provide an excellent sample with holding data of institutional investors on IPO firms over a period of 19 years, and are an ideal setting to study the relationship between institutional ownership and stock return volatility in emerging market. Accordingly, Thai IPOs are chosen to represent the sample observations from emerging markets.

To the best knowledge of the author, this paper is the first to study the relationship between institutional investors and volatility in Thai IPOs and hence provides a deeper understanding of how investors influence the price formation and the volatility of stock prices in secondary markets. Furthermore, in addition to the academics, the results in this paper could be useful for market regulators and policy makers to be aware of how stock return volatility is affected by institutional investors, in order to design future market regulations to efficiently stabilize equity markets.

*The Uncertainty of stock returns in the early days after IPO*

A review of prior literatures reveals that an investment bank's pricing of an IPO related to the level of information asymmetry surrounding the firm. For example, Beatty and Ritter's (1986) extension of Rock (1986) predicts that firms characterized by higher information asymmetry tend to be more underpriced on average, a prediction that received considerable empirical support [For example, Michaely and Shaw (1994) among others]. As noted by Ritter (1984) and Sherman and Titman (2002), information asymmetry should affect the precision of the price-setting process. In other words, it has been proposed that information asymmetry affect the uncertainty of stock returns and underpricing.

Many versions of information-asymmetry theories document that IPOs are characterized by high information asymmetry. Since the 1970s, when Ibbotson (1975) first documented the underpricing of initial public offerings, academia has been modeling the cause of the phenomena. Majority of prior literatures relate underpricing with versions of information asymmetry theories. Common among the literate is an explanation that underpricing is compensation for risk or for the cost of providing information. That is, underpricing is a systematic response to high asymmetric information surrounding the IPO event (see Rock, 1986; Allen and Faulhaber, 1989; Benveniste and Spindt,1989; Grinblatt and Hwang, 1989, Welch, 1992, and Aggarwal, Krigman, and Womack, 2002; among others).

Notable among the literatures is a contribution by Lowry, Officer and Schwert (2010) who studied the sample of U.S. IPO and document that “it should be more difficult to estimate precisely the value of a firm that is characterized by high information asymmetry: Firms with higher uncertainty should have a higher volatility of initial return”, Lowry *et al*, (2010) pp.427. In short, prior literatures show that IPOs are associated with high information asymmetry, high uncertainty as well as high volatility. These prior contributions lay an important foundation for this paper.

Literature on the uncertainty of stock prices in the early days after IPO shows that the uncertainty of stock prices after IPO is significant. Miller and Reilley (1987) examine daily returns, daily volume, and daily bid-ask spreads for a group of IPOs during their first four weeks of trading. It is found that the market adjusts to any mispricing during the first day of trading and underpricing was significantly correlated with proxies for both *ex ante* uncertainty and *ex post* uncertainty. Consistent to Miller and Reilley (1987), Lowery *et al.* (2010) shows that the volatility of initial returns is higher for firms that are more difficult to value (such as IPOs) because of higher information asymmetry. Accordingly, prior literatures are followed, and IPOs are chosen to be the sample of this research.

*Stock return volatility: a proxy of stock returns uncertainty*.

A review of the prior literature regarding the uncertainty of stock returns indicates that stock return volatility[[4]](#footnote-4) has been one of the most widely used proxies for the stock returns uncertainty. Ritter (1984) was the first to use stock return volatility as one of the risk proxies, and found a monotonic positive, but heteroscedastic relation between underpricing and risk. Since then many researchers including Bhagat and Frost (1986), Booth and Smith (1986), Miller and Reilly (1987), Barry, Muscarella, Peavy, Vetsuypens, (1990), Hansen and Torregrosa (1992), Wang, Chan, and Gau (1992), Aggarwal (2000), Ellis ,Michaely, and O’Hara (2000), Habib and Ljungqvist (2001), Hansen (2001) ;among others have used the stock return volatility as a measure of *ex ante* uncertainty.

Notable among the literature is a research by Jog and Wang (1992) who document a decomposition of total return variance (the proxy for stock return volatility) among market, industry and firm-specific components. According to Jog and Wang. (2002), the main source of the volatility of IPO returns is firm specific. The finding is consistent with Campbell, Lettau, Malkiel, and Xu (2001), who document the historical movement of common stock volatility during the 35 years from 1962 to 1997 in the U.S. They disaggregate volatility of individual stocks in three components: market-related, industry-specific and idiosyncratic firm-level volatility. Their decomposition of overall volatility shows that firm-level volatility accounts for the greatest share of total firm volatility. These results indicate that the investigation of IPO volatility must be reviewed in the context of this overall firm-specific volatility in the stock markets. Accordingly, this paper follows prior literatures by employing stock return volatility as the proxy for stock returns uncertainty and examine the stock return volatility in firm level.

*Information asymmetry, Institutional ownership and Underpricing*

It has been proposed that information asymmetry and institutional ownership are corelated. For example, Boon and White 2015 examined the data from the US and find that higher institutional ownership is associated with greater management disclosure, analyst following, and liquidity, resulting in lower information asymmetry. According to Boone and White (2015), the higher institutional ownership, is associated with an increased propensity for firms to provide voluntary disclosure via management forecasts, have greater analyst following and lower analyst disagreement, and experience lower information asymmetries.

This research extends Boon and White (2015) paradigm by reviewing the institutional ownership in the context of information asymmetry, underpricing and stock return volatility in emerging market. Since information asymmetry, underpricing and volatility are correlated (see Rock, 1986; Allen and Faulhaber, 1989; Benveniste and Spindt,1989; Grinblatt and Hwang, 1989, Welch, 1992, and Aggarwal, Krigman, and Womack, 2002; Chung, Kim and Ryu.,2017; among others), it is hypothesized that, given the present of information asymmetry, institutional ownership and underpricing should be corelated[[5]](#footnote-5). The aforementioned is one of the hypothesizes tested in this paper and emerging IPOs sample are chosen due to its property of high information asymmetry surrounding the IPO event.

**Data & Methodology**

*Data*

There are 226 pure new common equity offerings (excluding REITs) listed on the SET during the nineteen years period from 2001 to 2019, inclusive. The IPO dataset is hand-collected from Thailand Security Exchange Commission (SEC)’s IPO filling database. Market returns and stock returns data are collected from SET Market Database and Reporting Tool (SETSMART) database. For each issue, the Number of shares outstanding, the Book value of Equity (per share) and dummy variable for state-owned issues are collected from the IPO prospectus.

Out of 226 issues, 47 were dropped due to the missing data. This result in 179 IPOs, which represent 79.2% of the total 226 IPOs on the SET during the nineteen years. Table 1 contains a descriptive profile of sample IPOs by the issuance year.

Table 1: SET IPOs sample by year

|  |  |
| --- | --- |
| IPO Year | Number of IPOs |
| 2001 | 6 |
| 2002 | 14 |
| 2003 | 18 |
| 2004 | 36 |
| 2005 | 27 |
| 2006 | 10 |
| 2007 | 6 |
| 2008 | 8 |
| 2009 | 6 |
| 2010 | 5 |
| 2011 | 3 |
| 2012 | 8 |
| 2013 | 13 |
| 2014 | 16 |
| 2015 | 20 |
| 2016 | 11 |
| 2017 | 15 |
| 2018 | 3 |
| 2019 | 1 |
| Total | 226 |

*Measures of stock return volatility*

Since Jog and Wang (1992) establish that the main source of the volatility of stock returns is firm-specific. In addition, Brandt, Brav, Graham and Kumar (2010) show that idiosyncratic volatility is related to institutional ownership. Consistently, a recent research by Che (2018) also employ idiosyncratic volatility as a measure of stock return volatility. Following prior literatures, this research therefore employs idiosyncratic volatility as the measure of the volatility of stock returns.

Daily stock returns are used to calculate daily return volatility. Following Che (2018)’s methodology, the standard deviation of the daily difference between stock return and the market return are used to measure idiosyncratic volatility (*Voli*). For each stock *i*, the volatility was estimated for three intervals, Day 1-20, 1-40 and 1-60. These intervals are consistent with Lowery *et al.* (2010)’s suggestion to observe the daily returns after the 20th day, in order to avoid the effects of price stabilization and also are in line with the intervals used by Jog and Wang (1992).

To ensure robust estimation, an IPO was excluded in the aggregate if less than 75% of its daily returns in the corresponding interval were available in the SETSMART database. For example, if there were less than 45 daily returns for calculating the 60-day variance of an IPO, that IPO was not used in calculating the sample results.

*Measures of institutional holding*

For each stock 𝑖, the fraction of shareholdings for institutional investors, 𝐻𝑜𝑙𝑑𝑖𝑛𝑔*i* , is the number of shares held by institutional investors divided by the total number of shares outstanding of stock 𝑖, on the first day of trading.

(1)

;Where ni is the number of shares held by institutional investors and Ni is the total number of shares outstanding. Both variables are computed on the first day of trading of each stock 𝑖.

*Model & Control Variables*

The model used in this research is consistent with Che (2018)’s methodology which describe firm-level volatility as a function of institutional holding[[6]](#footnote-6) and a host of control variables. Such that,

(2)

The first variable on the right-hand side, (*Holdingi*) is the key variable for the analysis, and measures the holding fraction of stock 𝑖 held by institutional investors in the first trading day. The control variables (*Controls, discussed below*) consists of firm size (*Sizei*), Book-to-market ratio (*B/Mi*) and a dummy variable for state-owned firm (*Statei*).

Sias (1996) document that the result of regressing return volatility on investors’ holdings will be misleading, without controlling for firm size. Following Sias (1996), firm size is included as a control variable because it has been proposed that firm size is negatively correlated to volatility. Accordingly, market capitalization (*Sizei*) is included as a control variable to account for size effect, where size is measured by the natural logarithm of market capitalization.

It has been proposed that growth opportunities are an explanation for the increase in stock volatility. Malkiel and Xu (2003) show that (stock return) volatility is positively associated with future growth opportunities. And Hotchkiss and Strickland (2003) posit that high market-to-book firms might have greater growth opportunities. Therefore, the Book-to-market ratio (*B/Mi*) is included in the analysis in order to control for firms’ growth opportunities.

Furthermore, since state owners are generally passive investors, the stocks with the existence of state investors might have lower volatility than those without state owners, *ceteris paribus*. Thus, a dummy variable is added to indicate the presence of state owners (*Statei*). For each firm, StateDummy is set to 1 for stocks with the existence of state owners and 0 otherwise. This variable construction is consistent with Che (2018)’s methodology.

It is worth noting here about the contribution to the field by Cheung and Ng (1992) who document that future return volatility is negatively related to stock prices. Brandt *et al.* (2010) also find similar evidence that price is important in explaining volatility. Although it is preferable to include price as another control variable (as Cheung and Ng (1992) and Brant *et al.* (2010) suggest), this variable (*Price*i) is found to be corelated with market capitalization (*Sizei*) (*r* = 0.64, shown in Table 2). Therefore, only one variable (*Sizei*) is retained as a regressor to ensure model orthogonality[[7]](#footnote-7). As a result, the main model used in the study are defined as follows,

(3)

The following equation is utilized to test whether institutional ownership and initial return are corelated.

(4)

;Where *Voli* measure idiosyncratic volatility of stock 𝑖 returns. This variable is calculated as the standard deviation of the daily difference between stock return and the market return of *IRi* is the initial return of firm 𝑖. This variable is calculated as the return of firm 𝑖 on the first day of trading. *Holdingi* measures the holding fraction of stock 𝑖 held by institutional investors in the first trading day. *Sizei* is firm 𝑖’s market capitalization, expressed in natural logarithm. *B/Mi* is the book-to-market ratio of firm 𝑖. This variable is calculated as the ratio of the book value of equity divided by market value of equity of firm 𝑖, on the first day of trading. *State*i is a dummy variable. This dummy takes value of one if the firm is state-owned enterprise and zero otherwise.

The explanatory variables are examined to ensure model orthogonality. Table 2 reports the Pearson’s correlation between independent variables

Table 2: Pearson’s correlation between independent variables

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | *Holdingi* | *Sizei* | *B/Mi* | *Statei* | *Pricei* |
| *Holdingi* | 1.00 |  |  |  |  |
| *Sizei* | 0.45 | 1.00 |  |  |  |
| *B/Mi* | -0.13 | -0.24 | 1.00 |  |  |
| *Statei* | 0.00 | 0.21 | 0.02 | 1.00 |  |
| *Pricei\** | 0.33 | 0.64 | -0.33 | 0.20 | 1.00 |
| \*The main analysis excludes *Pricei due to its correlation with Sizei* | | | | | |

**Results & Analysis**

To ensure robust estimates, the results are corrected for potential heterogeneity using White (1980)’s methodology. Table 3 and Table 4 represent the results.

Table 3: Volatilities vs. Institutional holding

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dept.var. | *Idiosyncratic volatility* | | | | | | | |
|  | *20-days* | |  | *40-days* | |  | *60-days* | |
|  | *Coeff.*  *(t-stat)* | VIF |  | *Coeff.*  *(t-stat)* | VIF |  | *Coeff.*  *(t-stat)* | VIF |
| *Holdingi* | -0.021  (-2.77\*\*\*) | 1.37 |  | -0.012  (-2.14\*\*) | 1.40 |  | -0.011  (-2.49\*\*) | 1.33 |
| *Sizei* | -0.001  (-1.36) | 1.62 |  | -0.001  (-2.15\*\*) | 1.53 |  | -0.001  (-2.08\*\*) | 1.59 |
| *B/Mi* | -0.001  (-0.24) | 1.05 |  | -0.000  (-0.09) | 1.02 |  | -0.001  (-0.47) | 1.03 |
| *Statei* | -0.019  (-3.82\*\*\*) | 1.42 |  | -0.019  (-3.82\*\*\*) | 1.28 |  | -0.014  (-5.26\*\*\*) | 1.47 |
| *Intercept* | 0.045  (11.77\*\*\*) |  |  | 0.037  (14.39\*\*\*) |  |  | 0.036  (16.29\*\*\*) |  |

\*,\*\*,\*\*\* represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4: Initial returns vs Institutional holding

|  |  |  |
| --- | --- | --- |
| Dept.var. | *Initial Returns* | |
|  | *Coeff.*  *(t-stat)* | VIF |
| *Holdingi* | -0.823  (-4.44\*\*\*) | 1.54 |
| *Sizei* | 0.218  (7.76\*\*\*) | 1.78 |
| *B/Mi* | 0.004  (0.03) | 1.10 |
| *Statei* | -0.538  (-2.27\*\*) | 1.26 |
| *Intercept* | 0.351  (3.81\*\*\*) |  |
| \*,\*\*,\*\*\* represent statistical significance at the 1%, 5%, and 10% levels, respectively. | | |

Consistent with prior researches, a negative correlation between institutional holding and the volatility of stock returns was found. Other controls, such as firm size (*Sizei*) and state dummy (*Statei*) are also found to be significant predictors of stock return volatility. In general, it was found that Larger firms and state-owned firm tend to exhibit lower volatility. The results, support Sias (1996)’s finding that firm size is negatively correlated to volatility, and are also consistent with Che (2018)’s conjecture that state owners are generally passive investors: the stocks with the existence of state investors have lower volatility than those without state owners.

The main variable in question, the coefficient of *Holdingi*, are found to be monotony negative and statistically significant at 5% for all periods studied (20-days, 40-days and 60-days windows). In general, the results are interpretable in favor of Foucault, et.al (2011) and Boone and White (2015) that institutional holding and the volatility of stock returns are negatively corelated and outline the importance of institutional investors in maintaining the stability in emerging stock markets. Therefore, the implication for this research is particularly important for market regulators who seek to promote stability as well as IPO investors who seek to minimize risks. The analysis of the relationship between underpricing and institutional ownership (results from Table 4) reveal that institutional holding and underpricing are negatively corelated. The results, are found to be statistically significant at 1%, are consistent with Chen, Jegadeesh & Wermers 2000 who document that firms with high institutional ownership fail to deliver higher returns.

There could be several potential explanations for the impact of institutional investors on stock return and on stock return volatility documented. As (institutional) investors affect stock prices mainly through trading which is derived from information, the analysis focus on institutional investors’ information. In the context of trading information, the results are interpretable in favor of Boone and White (2015), who theorized that that higher institutional ownership (*Holding*i) is associated with higher information production (in terms of greater management disclosure, analyst following, and liquidity), resulting in lower uncertainty of stock returns (*Vol*i)[[8]](#footnote-8). However, the true reason behind this relationship is a matter of ongoing debates and is identified as one of the possible areas for future research.

**Robustness Check**

*Model with the discarded variable, Price*

For robustness, the models are estimated with *Pricei* included as another control variable to ensure that by excluding the variable does not affect the results [Since Cheung and Ng (1992) and Brant *et al.* (2010) document that price and volatility are corelated]. The results are presented in Table 5 and Table 6. All statistics reported are corrected for potential heterogeneity using White (1980)’s methodology.

Table 5: Volatilities vs. Institutional holdings (include *Pricei*)

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Dept.var. | *Idiosyncratic volatility* | | | | | | | |
|  | *20-days* | |  | *40-days* | |  | *60-days* | |
|  | *Coeff.*  *(t-stat)* | VIF |  | *Coeff.*  *(t-stat)* | VIF |  | *Coeff.*  *(t-stat)* | VIF |
| *Holdingi* | -0.022  (-2.86\*\*\*) | 1.41 |  | -0.012  (-2.23\*\*) | 1.43 |  | -0.011  (-2.58\*\*\*) | 1.39 |
| *Sizei* | -0.003  (-2.02\*\*) | 2.75 |  | -0.002  (-2.78\*\*\*) | 2.67 |  | -0.002  (-2.95\*\*\*) | 2.77 |
| *B/Mi* | 0.001  (0.00) | 1.21 |  | 0.001  (0.35) | 1.24 |  | 0.000  (0.07) | 1.22 |
| *Statei* | -0.022  (-4.37\*\*\*) | 1.64 |  | -0.017  (-4.86\*\*\*) | 1.49 |  | -0.016  (-6.28\*\*\*) | 1.96 |
| *Pricei* | 0.003  (1.79\*) | 2.79 |  | 0.001  (2.03\*\*) | 2.76 |  | 0.002  (2.29\*\*) | 3.09 |
| *Intercept* | 0.045  (11.77\*\*\*) |  |  | 0.038  (14.46\*\*\*) |  |  | 0.036  (16.35\*\*\*) |  |

\*,\*\*,\*\*\* represent statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6: Initial returns vs. Institutional holdings (include *Pricei*)

|  |  |  |
| --- | --- | --- |
| Dept.var. | *Initial Returns* | |
|  | *Coeff.*  *(t-stat)* | VIF |
| *Holdingi* | -0.869  (-4.57\*\*\*) | 1.85 |
| *Sizei* | 0.162  (5.17\*\*\*) | 2.58 |
| *B/Mi* | 0.101  (0.81) | 1.15 |
| *Statei* | -0.665  (-2.74\*\*\*) | 1.28 |
| *Pricei* | 0.161  (4.01\*\*\*) | 2.42 |
| *Intercept* | 0.372  (4.04\*\*\*) |  |
| \*,\*\*,\*\*\* represent statistical significance at the 1%, 5%, and 10% levels, respectively. | | |

In general, the results confirm the initial finding that institutional holdings reduce the stock return volatility, at least in the first 60 days post IPO. The coefficient of *Holdingi*, are found to be monotony negative and statistically significant at 5% for all window periods studied. The results are robust to tests using different price and size categories, among others. This paper also uses a different approach by double sorting stocks on market capitalization and institutional holdings, and computing future return volatility for each portfolio. The results (in the next subsection) provide qualitatively similar inferences as the White (1980)’s regressions.

*Volatility of portfolios sorted on size and institutional holdings*

This subsection uses a different approach to examine whether investors’ holdings have predictive power for future stock return volatility by sorting stocks on institutional holdings and forming portfolios. If institutional investors have a positive impact on stock return volatility, then the stock portfolio with higher institutional holdings should have higher future return volatility. However, it is important to note that stock market capitalization is an important determinant of volatility. Sias (1996) examines stock return volatility by sorting stocks both on institutional investors’ holdings alone and on size and holdings. Sias document that the results could be misleading, without controlling for stock market capitalization. Therefore, this paper sort stocks on both size and institutional holdings, following Sias (1996).

IPOs are sorted into 6 portfolios formed on size and institutional holding (2x3 portfolios). The portfolios, are the intersections of 2 portfolios formed on size (market capitalization on the first day of trading) and 3 portfolios formed on the intuitional holding (*Holdingi*). The size breakpoint is the median market capitalization on the first day of trading (Large and Small). The *Holdingi* breakpoints are the 30th and 70th percentiles (High, Medium and Low institutional holding). For each of the two size-sorted portfolios, the stock return volatility is examined under the null hypothesis that stocks with a high institutional holding exhibit lower stock return volatility. Since the variance of each portfolio is not priori known to be equal, the test statistics used are Welch t-test (Welch 1947). Table 7 reports results for portfolios sorted on size and institutional investors’ holdings.

Table 7: Differences in volatility of portfolios sorted by Size and Institutional holdings.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Welch’s t-stat for  H0: *High**Ins.Hld*. – *Low Ins. Hld*. = 0 | | | |
| Portfolios | 20-days Volatility | 40-days Volatility | 60-days Volatility | |
| Large market capitalization | -3.71\*\*\* | -3.48\*\*\* | -4.30\*\*\* | |
| Small market capitalization | -1.96\* | -2.39\*\* | -2.17\*\* | |
| \*,\*\*,\*\*\* represent statistical significance at the 1%, 5%, and 10% levels, respectively. | | | |

Table 7 presents the results for portfolios sorted on size and financial investors’ holdings. All test statistics reported indicate that the mean volatility is lower for firms (portfolio) with higher institutional holdings. The tests are robust to firms’ size differences (see Sias 1996) as the results from Large firm and Small firm portfolios are consistent. Stocks with higher institutional holdings have lower return volatility, consistent with the results from the main analysis.

In summary, robustness tests support the results from the main analysis that institutional investors have a negative impact on stock return volatility. The results are interpretable in favor of a stabilizing effect on stock returns induced by institutional investors and outline the importance of institutional investors in maintaining the stability in emerging stock markets.

**Concluding Remarks, Limitations and Possible future research**

Apart from institutional investors, a number of literatures propose that foreign investors also have impact on the volatility of stock returns (For example, Chole, Kho and Stulz (1999) and Li, Nguyen, Pham and Wei (2011)). This study explored the possibility of including foreign investors as another control variable, however, the data are not sufficient[[9]](#footnote-9) to distinguish the effects of foreign investors and the effects of institutional investors. In this context, it is worth noting a recent contribution by Che (2018) who studied the effect of foreign investor and institutional investors in Norwegian market. The results from Che (2018)’s study reveals that institutional investors have negative impact on stock return volatility, which is consistent with the results presented in this research.

Lastly, some empirical literatures also suggest that corporate disclosure and institutional ownership are corelated (For example, Bushee and Noe, (2000)). However, it is prohibitively difficult to observe the level of corporate disclosure from IPOs because corporate disclosure data is not publicly available before the firm going public. Accordingly, it is recognized as one of the limitations of this paper and is identified a promising area for future research should the data become available.

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1. Underpricing refers to the positive first-day stock returns following an IPO event. [↑](#footnote-ref-1)
2. Beatty and Ritter (1986), Ritter (1984), Clarkson and Merkly (1994) and Jog and Wang (2002); among others have investigated this relationship between IPO underpricing and *ex ante* uncertainty. The hypothesis is that the higher the uncertainty about IPO, the higher would be the underpricing and that this higher uncertainty can be proxied by the stock returns volatility in the early days after IPO, see Rock (1986) for the theoretical underpinnings. [↑](#footnote-ref-2)
3. The MSCI Emerging Markets Index consists of 24 emerging markets countries: Brazil, Chile, China, Colombia, Czech Republic, Egypt, Greece, Hungary, India, Indonesia, Korea, Malaysia, Mexico, Pakistan, Peru, Philippines, Poland, Qatar, Russia, South Africa, Taiwan, Thailand, Turkey and United Arab Emirates. Thailand’s market capitalization falls right between mean and median market capitalization of these 24 emerging economies. Other classification, apart from MSCI, exists but the list of emerging markets is very similar. [↑](#footnote-ref-3)
4. Stock return volatility refers to the variance of daily returns in the period immediately following the IPO. It must be noted here that it is just one of the many proxies indicating the underlying risk. Other measures used in the literature include price, inverse of the gross proceeds, sales, underwriter reputation, firm age, and many others. [↑](#footnote-ref-4)
5. Many prior studies show that the correlation between stock returns and institutional investors exists [For example, Gompers & Metrick 2001; Osagie, Osho & Sutton 2005 show that firms with higher levels of institutional ownership yield greater returns while Chen, Jegadeesh & Wermers 2000 show that firms with high a institutional ownership fail to deliver higher returns]. Therefore, the hypothesis in this paper is stated in a consistent manner with prior studies. [↑](#footnote-ref-5)
6. Prior researches identified that institutional holding is an independent variable. A recent research by Che (2018) tested the causality between investor type and volatility. It is found that investor type is an independent variable and volatility is a dependent variable. Similar tests by Foucault, Sraer and Thesmar (2011) and Sias (1996) also reveal the same conclusion. Following prior researches, institutional holding is therefore treated as an independent variable. [↑](#footnote-ref-6)
7. This correlation is to be expected since market capitalization (*Sizei*) is a function of stock price (*Pricei*). Only one regressor (*Sizei*) is retained in the main model to avoid multicollinearity. [↑](#footnote-ref-7)
8. There could be several others potential explanations for the impact of institutional investors on stock return volatility documented. For example, investors’ trading style, trading turnover, and investment horizon may potentially affect stock return volatility. The main analysis, discussed in this study, is based on information theories under the implicit assumption that information affect trading and stock prices. [↑](#footnote-ref-8)
9. The sample contain 7 observations that can distinguish foreign investors and institutional investors. The subsample is too small for any reliable statistical inference. [↑](#footnote-ref-9)