

Foreign Investors' Trading Behavior in Response to Crises: Evidence from Thailand

Benjamas Jirasakuldech* Riza Emekter

Abstract

This paper examines the trading behavior of foreign investors in Thailand and its impact on the country's stock market and currency value during January 1, 1975 to August 31, 2009. We also investigate if the trading strategy of foreigners has changed during the 1997 financial crisis, 2004 Tsunami crisis, and 2006 and 2008 political crisis. For the entire sample period, foreign investors were the net purchaser of Thai equity and implemented positive feed-back investment trading strategy, while domestic investors were the net sellers with a contrarian investment strategy. The trading behaviors of foreign investors do not change during the financial and tsunami turmoil and 2006 political upheaval in Thailand. These crises do not scare foreign investors out of Thailand. It was the trading activities of domestic individual investors that destabilized the stock market of Thailand during the 1997 Asian financial crisis. The trading activities of all investors cause a major destabilizing effect on Thai equity during the 2008 political crisis, particularly individual investors exert the strongest destabilizing effect. There is no evidence of price-destabilizing effect during the 2004 Tsunami crisis. The trading activities of domestic individual and institutional investors do not cause any destabilizing effect on Baht currency value caused by the trading activities of domestic individual and institutional investors were not found in any of the financial, tsunami, and political crises. Only did the trading activities of foreigners cause the baht to devalue during the 1997 Asian financial crisis.

Keywords: Positive feedback trading, contrarian, Asian crisis, Tsunami Crisis, Political Crisis, destabilizing effect.

JEL Classification: C14, C22, C32, F31, G12, and G15

I. Introduction

Cross-border equity flows and trades have greatly increased in the past two decades particularly in the emerging markets. Global cross-exchange trading as a percentage of total foreign equity trading grew by 11.5% per year to \$7.7 trillion by 2003 which represented 43% of total foreign equity trading. Understanding of the role of foreign investors and their trading behavior, therefore, has become more crucial for domestic investors and political leaders as they provide important policy implications for economic stability in these markets.

Several studies examined the major role of foreign investors, particularly large financial institutions and reported evidence of herding and positive feedback trading behaviors. Herding occurs when a group of investors mimic the trading strategy of others resulting in the buy or sell of the same stock at the time same time. The herding trading behavior could cause a positive relationship between portfolio investment flow and stock returns (Tesar and Wener, 1993; Bohn and Tesar, 1996; Brennan and Cao, 1997). Laknoishok et al. (1992) argued that trading behavior of institutional investors is often consistent with herding behavior. Studies by Brennan and Cao (1997) concluded that the relationship between U.S. net purchases in developed foreign markets and country stock returns is positive. Such positive relationship is simply a result from positive feedback trading where foreign investors buy following up market and sell following down

market. Choe et al. (1999, 2000) and Kim and Wei (2002) employed transaction data during 1997 and reported similar evidence of positive feedback trading and herding among foreign investors. Similar trading patterns are documented by Karolyi (2002) and Kamesaka et al. (2003) and such positive feedback market timing yields high returns. Froot et al. (2001) employed the proprietary data for flows from State Street Bank and Trust and showed evidence of positive feedback trading among foreign investors of 46 countries between 1994 and 1998. Richards (2005) reported evidence of positive feedback trading of foreigners in six Asian emerging markets and their trading behaviors have a much larger impact on price than documented in earlier studies. Kumar et al. (2012) investigated foreign institutional trading in India from 2000 to 2009 and showed similar evidence of positive feedback trading.¹ Study by Chiao et al. (2011), on the other hand, showed that the herding behavior of institutional investors in Taiwan is a result of positive feedback trading based on stock returns of past trading day and open session of the same day.

Some studies argued that the trading of foreign investors exerted a destabilizing influence on the stock markets and economies of the country. Foreign investors were often criticized for the demise of East Asian stock markets and currency value. Such blame was substantiated by several studies for a variety of reasons. Dornbusch and Park (1995) provided that herding and positive feedback trading strategies pursued by foreign investors may cause market prices to overreact and deviate from fundamentals, which could be destabilizing. Radelet and Sachs (1998) attributed the East Asian crisis to the financial panic caused by foreign investors. Choe et al. (1999) examined the impact of foreign investors on Korean stock market using transaction data during December 1996 to 1977 and showed no evidence of destabilizing effect, which confirmed the findings of DeLong et al. (1990). Using 20 years data, Iihara et al. (2001) found that both Japanese and foreign investors' trading activities destabilize the stock prices, a result contradicting to Karolvi (2002) who found no evidence that trading activities by foreigners destabilized the Japanese market during the East Asian crisis. Study by Jeon and Moëffet (2010) showed that foreign investors' herding and positive feedback trading has significant impact on Korean stock market.

Although the trading behaviors of foreigners have been studied extensively by several studies, they are mostly focused on the U.S. and other developed market and centered around a single major financial crisis. No study has been conducted on Thailand equity markets. The analysis of trading behavior of diverse group of equity participants, especially foreign investors in Thailand is particularly interesting due to several reasons. First, the daily trading volume of foreign investors in Thailand as a percentage of overall market activities increased significantly from 7.89% in 1999 to 53.35% in 2006. The dramatic increase in trading volume by foreign investors is an indication of a significant role played by foreign investors in the pricing of securities, and possible impact on country's overall stock market. Second, Thailand is a unique case for this study due to the presence of three different major breakpoints in recent history of the country. First major breakpoint was the occurrence of 1997 Asian financial crisis. The advent of this major financial crisis called for a liberalization of country's financial markets, making Thai equity markets become more receptive to foreign investors. Second major breakpoint was the occurrence of the tsunami disaster which hit all coasts of Southeast Asia on December 26, 2004,

¹ Leita and Carlos (2010), on the other hand, showed that institutional trading behavior in Portuguese stock market is consistent with negative feedback trading.

causing the death of 180,000 people. This natural disaster allows us to examine if this special phenomena has analogous effect on investors' trading behavior and stock markets as the major 1997 financial crisis. Third major breakpoint was the military coup which took over the power of the government on September 16, 2006. This military coup has divided the country into two groups: the defenders of the King Bhumibol Adulyadej and the supporter of the Prime Minister Thaksin Shinawatra. Since then, Thailand has undergone major political instability which led to further political riots in 2008 and 2010.

Additionally, the ownership structures of the Thai companies are significantly different from other countries, which make herding behavior worth investigating. Wiwattanakantang (2000) finds that 82 percent of the publicly traded companies in Thailand have large controlling shareholders. These large shareholders are typically families who owned the business before the IPOs. Kim et.al (2004) further report that the higher the share of managerial ownership in a company, the higher the firm performance. Although this is the case for most countries, the critical level of ownership where the positive relationship between the ownership and the firm performance occurs is much higher level for Thailand compared to more developed markets like the US and UK. An additional finding is that the post IPO performance decline in Thai firms are much severe than the similar firms in the U.S. These major differences may affect investors' trading behavior in Thailand. Kim and Nofsinger (2005) find that the herding behavior in Japan is an investigative herding which is based on insider information rather than an observable firm characteristic. This result is closely related with the fact that companies in Japan tend to have large institutional ownership or belong to a Keiretsu. Similar results can be expected in Thailand given that most companies have a controlling family ownership structure.

These unique cases and special ownership structure allow us to calibrate and compare the pattern and impact of trading activities by local institutions, individuals, and foreign investors around these crises. This alone makes this study different from prior studies which mostly emphasize on investigating investors' behavior mainly around the financial crisis. Examining the foreign and domestic investor's behavior around three different crises provides important information as to whether investors react differently in response to different types of crises, which provides important policy implications for the policy makers. Specifically, this paper addresses the following questions.

- (1) Did the foreign investors sell off their equity holdings during the crisis, or are they long-term investors?
- (2) Did the foreign investors trading behavior reflect the positive or negative feedback trading? Did their trading strategy change during the crisis period?
- (3) Did foreign investors trading activities during these crises increase the volatility of stock or currency markets? In other words, did their trading behavior destabilize the stock and currency markets?
- (4) Did the trading behavior of foreign investors change in response to three different nature of crisis: financial, natural, and political?

For the entire sample period, foreign investors were the net purchasers of Thai equity and implemented positive feed-back investment trading strategy, while domestic investors were the net sellers with a contrarian investment strategy.² Their trading behaviors do not change during

² The sum of net purchase will be the same as the sum of net sales.

the financial and tsunami turmoils, and 2006 political upheaval in Thailand. These crises do not scare foreign investors out of Thailand. It was the trading activities of domestic individual investors that destabilized the stock market of Thailand during the 1997 Asian financial crisis. All three types of investors cause a major destabilizing effect on Thai equity during the 2008 political crisis, particularly individual investors exert the strongest destabilizing effect. There is no evidence of price-destabilizing effect during the 2004 Tsunami crisis. Destabilizing effects on baht value caused by the trading activities of domestic individual and institutional investors were not found in any of the financial, tsunami, and political crises. Only did the trading activities of foreigners cause the baht to devalue during the 1997 Asian financial crisis.

The paper is organized as follows. Section II describes our data sets. Section III provides details of Vector Autoregressive Model and impulse response. Section IV reports empirical results for each crisis and section V offers some concluding remarks.

II. Data

The data on trading value and volume in baht currency of different types of investors since January 1, 1975 to August 31, 2009 are collected from the Stock Exchange of Thailand (SET). The investors are classified into three groups; local investors, local institutional investors, and foreign investors which include both individuals and institutions.³ The data is compiled on a daily basis. The closing index value for SET stock index is used to calculate the daily aggregate stock returns. The SET index is the current market value of all stocks (with dividends reinvested) listed on the Stock Exchange of Thailand weighted by the base market values. The SET index is obtained from the Stock Exchange of Thailand. To evaluate the impact of foreign trading on the currency value during those particular crises, the daily baht/U.S. dollar exchange rate quotes are obtained from the Federal Reserve Bank of New York website.

The net purchase or net flow activities for each type of investor is calculated as $\ln(\text{Daily trading value of Purchase activities}/\text{Daily trading value of Sales activities})$. If the value is positive, it indicates a net purchase. On the other hand, if the value is negative, it indicates a net sale. The performance of SET index is calculated as $\ln(\text{SET}_t/\text{SET}_{t-1})$ and the baht/\$ exchange rate is calculated in the same way as $\ln(\text{baht}/\text{\$}_t/\text{baht}/\text{\$}_{t-1})$.

To investigate the each type of investors' behavior around each crisis, we divide the study periods into pre-crisis, during crisis and post-crisis in accordance with the triggering event date as shown in the following table.

	Triggering Event Date	Crisis	Pre-Crisis Sub-Period	Crisis Sub-Period	Post-Crisis Sub-Period
(1)	July 2, 1997	Asian Financial Crisis	Jan 4, 1995-June 27, 1997	June 30, 1997-December 30, 1998	Jan 4, 1999-December 28, 2001
(2)	December 26, 2004	Tsunami Natural Crisis	Jan 2, 2002-November 30, 2004	December 1, 2004-July 29, 2005	August 1, 2005-July 31, 2006
(3)	September 19, 2006	Political Coup to Seize Government	Sept 1, 2005-Sept 11, 2006	Sept 12, 2006-Aug. 31, 2007	Sept 3, 2007-April 30, 2008
(4)	October 7, 2008	Riots Occurrence Crisis to oust Prime Minister	October 1, 2007-May 23, 2008	May 26, 2008-December 3, 2008	December 4, 2008-August 31, 2009

³ The investor types are limited to three categories due to the availability of the data.

The 1997 Asian financial crisis was ignited by Thai's government decision on July 2, 1997 to float the baht value, abandoning the pegging system of baht value to U.S. dollars in order to support the financial meltdown driven by the collapse of the real estate sector. The baht lost more than 18%-20% of its value on the announcement date. It reached a record low of 56 baht for a US dollar in January 1998. The Thai stock market dropped by 75%, causing the failure of the largest Thai finance company—Finance One. The second crisis in the recent history of Thailand was the strike of Tsunami on December 26, 2004 which was the worst natural disaster ever to hit Thailand, causing the death of more than 5,000 people. In the wake of Tsunami, the Thai stock market plummeted and SET index fell by 14.76 points as investors rushed to sell of their stocks particularly in the hotel sector. Some practitioners believe that the struck of this disaster triggered a declined interest from foreign investors in investing in Asian stock markets. Therefore, it motivates us to examine investors' trading behavior around this crisis, and whether they react differently when compared with the Asian Financial crisis.

The third crisis that occurred in the recent history of Thailand was the presence of military coup on September 19, 2006 to seize the power of the Prime Minister Thaksin Shinawatt whom public believes that he allegedly brought his way to power, eroded Thailand democracy, and corrupted the power. This was the first military coup since 1991 when people believed that it was the last coup ever took place in Thailand. In the event of the coup, the baht value experienced the biggest loss of 1.3% and hit the record low since 2003 to 37.77 baht/\$. Moody's investor service did not downgrade country's credit rating. Rather, it affirmed Thailand rating and stable outlook as the coup is perceived to be a domestic political development as opposed to financial reform. In response to this political coup, the SET index dropped 29.64 points or 1.4% to its lowest level since July 21, 2006 but quickly bounced back as investors gain more confidence regarding the removal of the Prime Minister tenure which were uncertain for quite some times. The comeback of SET index is partly attributed to the \$200 million (7,393 million baht) net purchases of foreign institutions led by JP Morgan.

The last crisis that is believed to cause a major breakdown in the history of Thailand was the 2008 riots which had its roots from the prolonged 2005-2006 political crisis. Since 2005, the political crisis has divided country into two groups: People Alliance for Democracy (PAD) known to be "yellow-shirt" who supported the King and People of Political Party (PPP) known to be "red-shirt" who supported the ousted Prime Minister. On October 7, 2008, police fired tear gas to disperse the PAD protesters who blocked the parliament and the Prime Minister Somchai Wongsawat from declaring the policy. These confrontations caused 2 deaths and injured more than 300 people. These crises are believed to have some effects on the stock market in Thailand particularly the net purchase by the foreign investors.

III. Methodology

III.1 Vector Autoregression Analysis

A tri-variate Vector Autoregression Model (VAR) of daily SET returns, baht/\$ exchange rate value and net purchase activities of investors is employed to test whether foreign investors were positive feedback traders and whether their trading activities have a destabilizing effect on the underlying stock and currency values. A strong contemporaneous correlation between daily net purchases and SET returns as shown in Table 3 is not a direct indicator of the presence of

positive feedback trading. Rather, the positive correlation may be a result of the inherent autocorrelation in the SET return and daily net purchases series. The VAR approach is a structural model in which every endogenous variable in the systems is model as a function of its own lagged value and the lagged value of all of other endogenous variables in the system. In this case, a VAR system for each type of investor includes trading activities as a function of past trading activities, past SET and currency returns, the SET return as a function of past SET return, past trading activities and currency returns, and the currency returns as a function of past currency and SET returns, and past trading activities. The VAR system can be written as:

$$y_t = C + A_1 y_{t-1} + \dots + A_p y_{t-p} + \varepsilon_t \dots \dots \dots (1)$$

Where y_t is a 3 X 1 vector of endogenous variables consisting of daily SET returns, baht/\$ exchange rate return and daily net purchases. C, and A_1, \dots, A_p are 3 X 1 and 3 X 3 matrices of coefficients to be estimated, p is the lag length for the VAR, and ε_t is a vector of innovations that may be contemporaneously correlated but are uncorrelated with their lagged values. In our case, the SET returns, baht/\$ exchange rate returns, and daily net purchases are jointly determined by a VAR system and the only exogenous variable is a constant. The system is estimated for net purchase activities of three different investors including foreign investors, domestic individual and institutional investors. Zero-block exclusion F-statistics tests are also conducted to determine whether a block of lags of past SET returns, baht/\$ exchange value, and net flows are jointly significant in predicting the future SET returns, future baht/\$ returns, and future net flows. A Bayes-Schwarz criterion is employed to determine the number of appropriate lags that capture linear dependencies for all variables. In our case, four lags were used.

VAR(p) model defined in Equation (1) can be written as a linear function of the past innovations by successively replacing the lag terms with similar equations.

$$y_t = \mu + \varepsilon_t + \Psi_1 \varepsilon_{t-1} + \Psi_2 \varepsilon_{t-2} + \dots \dots \dots (2)$$

where $\mu = [A(1)^{-1}]A_0$. The (i,j) components of Ψ_s measures the response of the i th variable in s days to a unit random shock in the j th variable and none in other variables. However, elements of vector ε_t are correlated, therefore it is difficult to interpret the coefficients. The typical solution is to use Cholesky decomposition to transform the innovations so that they are not correlated (Tsay, 2005). With Cholesky factorization, Equation (2) can be rewritten as,

$$y_t = \mu + \Psi_0^* v_t + \Psi_1^* v_{t-1} + \Psi_2^* v_{t-2} + \dots, \dots \dots (3)$$

where $\Psi_0^* = L$, $\Psi_i^* = \Psi_i L$, and $v_t = L^{-1} \varepsilon_t$. L is a lower triangular matrix so that $\Sigma = LGL'$ and G is a diagonal matrix. The (i,j) th element of Ψ_i^* is the impulse response of innovation $v_{j,t}$ on the future observation on y_i . As in Karolyi(2002), we created 95 percent confidence band of the impulse response to a given shock of one standard error in j th variable using the Monte Carlo integration technique of Kloek and Van Dijk (1978).

Since the current and lagged elements of v_t is uncorrelated, variance of each elements of y_t can be traced into elements of v_t . The error variance from T+1 step ahead forecast of y_i can be calculated as

$$\sum_{s=0}^T \Psi_t^{s,2} \dots\dots\dots(4)$$

This forecast error variance can be used to examine the effect of relative importance of the markets in generating the fluctuations in daily net flows from past net flows, SET stock returns and baht/\$ exchange rate returns. In each VAR regression, we report the fraction (in percent) of total forecast error variance for SET returns, baht/\$ exchange rates, and net flows up to 5, 10, 15, and 20 days ahead accounted for by innovations of past SET returns, baht/\$ exchange rate and net flows.

IV. Empirical Results

IV.1 Summary Statistics

Figure 1 shows the plot of the SET index, baht/\$ exchange rate value, and foreign net purchase from January 1, 1995-August 31, 2009. During the period studied, the SET reached its first peak value of 1,430.46 and the baht/\$ appreciated to 24.70 on July 5, 1995, the corresponding foreign activity changed from net sellers of -\$155.61 million to net purchasers of \$3,066.31 million. Similar foreign trading behaviors are also recognized when the SET reached its peak and baht currency appreciated against dollar on June 17, 1999, December 30, 1999, October 11, 2007, and May 23, 2008. For the subsequent downturn period in Thai stock markets, baht devalued in value relative to U.S. dollars during February 21, 1996 to October 17, 1997 (Asian financial crisis), March 15, 2000 to October 30, 2000 (post Asian financial crisis), and May 13, 2008 to September 9, 2008 (Thailand Bangkok riot), 2008, foreigners became the net sellers most of the time.

Foreign investors became aggressive traders since 2003. When the SET index rose by 2.41% on January 4, 2006, foreign net purchase activities increased by 358.95%. The same trading behavior is observed on April 5, 2006. A 3.05% increase in SET index is associated with an increase in foreign net purchase activities by almost 600%. On the other hands, the drop of SET index by 13.33% is associated with an increase in foreign net selling activities by 3,257.8% on December 19, 2006. This significant increase in selling off the holding of Thai equity by foreigners indicates that foreigners react to the political coup which took place on September 19, 2006 as bad news and are not quite certain that this will bring stability to the country and stock market. In conclusion, foreigners become aggressive net purchasers of Thai equity when the SET index rose and the Baht devalued against the dollars, which is consistent with positive feedback trading and they trade more aggressively during the most recent time period.

Table 1 presents the overall summary statistics of trading activities by each type of investor in Thailand, the return of SET index and the % change in baht/\$ value during January 1, 1995-August 31, 2009. On average, the total trading activity per day is over 10.8 billion and it is ranging from a high of 94.0 billion (on January 23, 2006) to a low of 0.61 billion (on December 25, 2000). Domestic individual investors' trading activities comprise of 62.04% (6.7 billion per day) of total trading activities, followed by foreign investors which accounts for 27.78% (3.0 billion per day) and domestic institutional investors at 10.18% (1.1 billion per day). The last two

columns indicate the ratio of mean to the maximum of aggregate purchases. Over the entire period, foreigners were the net purchasers of Thai equity at 63.8 million which is almost 0.07% of total trading activities. Domestic individual and institutional investors, however, were net sellers of Thai equity at 48.4 million (0.05% of total trading activity) and 13.2 million (0.02% of total trading activity), respectively. There is strong persistence for net purchase activity of foreign investors and net sell activity of domestic individual and institutional investors with first order-autocorrelation ranging from 0.371 to 0.560.

To further test whether the trading behavior of each type of investors differ before, during-and after each major crisis, the F-tests of differences in means of trading activity across periods are conducted. For the first 1997 Asian financial crisis, we employ July 2, 1997 when Thai baht devalued by more than 17% as the triggering event. The trading activity as indicated by total purchases dropped from 5.4 billion per day before the crisis to 3.5 billion during the crisis and it restored to the same value as before the crisis period. Examining the role of foreign investors shows that foreigners were net purchasers of Thai equity before and during crisis and became net sellers after the 1997 Asian crisis. The net purchases increased from 0.50% of total daily trading activity before the crisis to 3.74% during the crisis and to -2.77% after the crisis. The F-statistic of 50.80 rejects the null hypothesis that mean of daily net purchases was equal across three subperiods. The trading behaviors of domestic individual and institutional investors are quite different. Domestic individual investors remain net purchasers at 0.61% of total trading activity before and 2.64% after the crisis period. Domestic individual investors are the major net sellers of Thai equity during the crisis period at the 2.20% of total daily trading activity. However, domestic institutional investors remained the net sellers across three sub-periods and became the aggressive net seller at 1.54% during the crisis, compared with 1.11% before and 0.34% after the crisis. The F-statistics indicate that the trading behaviors of both domestic individual (F- statistic 33.11) and institutional investors (F-statistic 16.97) are significant and different across three sub-periods.

For 2004 Tsunami crisis, we used December 26, 2004 as a trigger event when earthquake hit the Indian Ocean. The SET index dropped by about 1% and baht devalued by 0.15%. Domestic individual and institutional investors shifted from net purchasers before crisis to net sellers during and after the crisis. The average daily net purchases of domestic individual and institutional investors are at 0.11% and 0.61% of total trading activity before the crisis. Both domestic individual and institutional investors became the net sellers at the 1.28% and 1.88% during the crisis and at 0.44% and 0.32% after the crisis. By contrast, foreign investors shifted from net sellers at 0.72% of daily trading activity before the crisis to net purchasers at 3.12% during the crisis and at 0.80% after the crisis. The F-statistics indicate that there is a significant change in the trading behavior for all three types of investor across three subperiods.

The Thai political coup took place on Tuesday September 19, 2006, when the Royal Thai Army took power away from the elected caretaker government run by Prime Minister Thaksin Shinawatra. In response to this crisis, domestic institutional and individual investors were net sellers and selling off Thai equity before and during the crisis. After the crisis, they became net purchasers with the average daily purchase of 0.52% and 2.37% of total trading activity, respectively. This is not the case for foreign investors. Foreigners were aggressive net purchasers before and during crisis but selling off their holding after the crisis. This opposite

pattern suggests that domestic and foreign investors possess different views toward this crisis. Domestic investors react to the political coup as good news which helps stabilize Thai economy and stock markets, therefore, they became aggressive net purchasers after the crisis. Foreigners, on the other hands, react to the political coup as bad news and are not quite certain that this will bring stability to the country and stock market. As a consequence, they are aggressive sellers of Thai equity after the crisis. Such opposite trading behavior may suggest the presence of information asymmetry, that is, domestic investors have private information about stock market in Thailand while foreign investors do not.

Thailand Bangkok riot took place in October 7, 2008, where anti-riot policeman fired tear gas to protestors who barricaded the parliament and blocked the government from leaving. In response to this crisis, domestic individual investors remained net purchasers before, during, and after the riot crisis at 2.25%, 6.62%, and 0.47% of total trading activities, respectively. Foreign investors, on the other hands, were net sellers before, during, and after the crisis at 2.66%, 8.85%, and 0.19% of total trading activities, respectively. Domestic institutional investors were net purchasers before the crisis at 0.44% and during the crisis at 2.22% of total trading activities but selling off their equity holdings after the crisis at the rate of 0.28% of total trading activities. This suggests that domestic and foreign investors have asymmetric information. Foreigners sold off their holding at the higher rate during the crisis than before and after crisis, suggesting that the political unrest and instability will be prolonged for a certain period of time. Domestic investors, on the other hand, increased their holding of Thai equity at the higher rate during the crisis, suggesting they have private information and believe that the political unrest will cease and stock market will restore in the near future.

Table 3 shows the correlations among net purchases of domestic individual, institutional, and foreigners, SET returns, and baht/dollar exchange rates across three sub-periods. Daily net purchases of foreigners are significantly and negatively correlated with daily net purchases of domestic individual and institutional investors. Surprisingly, the magnitudes of negative correlations are stronger between the foreigners and domestic individuals for all four crises, ranging from -0.7030 and -0.9230. The magnitudes of negative correlations are stronger during the 1997 Asian crisis and 2004 Tsunami crisis periods, but are less stronger during the 2006 and 2008 political unrest crises, when compare to the pre- and post-crisis. Lastly, the daily net purchases of foreigners are significantly and positively correlated with the SET returns but are negatively correlated with the Baht/\$ exchange rates across three sub-periods. This indicates that foreigners increase their holdings of Thai equity when the SET index rises and baht appreciates in value relative to the dollars.

IV.2 VAR Regression Results

Table 4 presents the results of VAR estimations for local institutional investors, local individual investors, and foreign investors. For each type of investor, the coefficient estimates for the first four lags of three endogenous variables in the VAR system including SET returns, the Bath/\$ returns and the net purchases are reported. The statistical significance of each lagged variables is determined using White (1980) heteroscedasticity-consistent standard errors. The adjusted R^2 of the model in the VAR system, F-statistics of zero-block exclusion tests, and the variance decomposition of 5, 10, 15, and 20-days ahead forecast accounted by each variable are also reported.

The VAR results for foreign investors as shown in the last three columns indicated the autocorrelation pattern in all three variables: SET returns, Baht/\$ value, and Net flows, which are consistent with the findings reported in Table 1. The SET return series show positive significant first lag coefficient of 0.067. The net foreign purchases series also reveal positive and significant or the first four lags with the estimated coefficients of 0.3989, 0.1468, 0.084, and 0.0746 respectively, while the baht/\$ value series show negative significant serial correlation of -0.1381 and -0.0075 for the first two lags. The cross-dependence in SET returns and foreign net purchases is strongly asymmetric. That is, the estimated coefficients of all four lags of SET returns are large and statistically significant for the foreign net purchases; whereas, only the first lag of foreign net purchases is statistically significant for SET return. The first lag of SET returns have positive effects on the future value of foreign net purchases with the estimated coefficients of 0.049, while the next three lags have negative values of -0.0076, -0.0090, and -0.0117. The significant positive first lag and negative next three lags here suggest that the trading behavior for foreigners follow a complex cyclical pattern. The significant positive first lag indicates that foreign investors are more likely to purchase Thai equity following the day the SET index rises. The significant negative next three lags indicate foreigners will invest in Thai equity when the SET index drops. This mixed behavior is not consistent with positive-feedback trading. The lagged coefficients of baht/\$ values are not significant in explaining future net purchases of foreigners. There is evidence of impact of foreign net purchase on future SET returns. The positive estimated coefficient 0.6722 of first lag of foreign net purchase on future SET returns indicates that the trading activity by foreigners are associated with an increase in the SET returns. However, there is no evidence of any impact of foreign net purchase on future Baht/\$ values. The estimated coefficients of all four lagged foreign net purchase activities on Bath/\$ currency value are relatively small and insignificant.

The zero-block exclusion tests provide a consistent result and reject the null hypothesis that lagged SET return are not important in explaining the future net purchase of foreigner at the 1% significant level with the F-statistic of 82.38. Similarly, the zero-block exclusion test also indicates the significance of lagged net purchases by foreigners in explaining the future SET returns at the 1% significant level with the F-statistic of 8.86. On the other hands, the zero-block exclusion test F-statistic of 1.0317 shows that lagged foreign net purchases has no impact on future currency value, a result that is consistent with the significant estimated coefficients in the VAR system.

When the VAR analysis is performed on the domestic institutional and individual investors, the result indicates that the trading activities of domestic investors both institutional and individual tend to destabilize the equity market. The second lag for net purchases of local institutional investors (-0.2087) and the first lag for net purchases of local individual investors (-0.9932) for SET returns are significant and negative. The associated zero-block exclusion tests reject the null hypothesis that the lagged of net purchases activities are unimportant in explaining the SET returns at the 5% with F-statistic of 2.51 for domestic institutional investors and at the 1% with F-statistic of 6.06 for domestic individual investors. Negative coefficients of past net purchases of domestic institutional and individual investors for SET returns suggest that the trading behavior of these investors tends to cause a decline in the stock market of Thailand. These two sectors are the major contributions of total trading activities in Thailand, which account for about 73%. The trading behavior of domestic investors also suggests that domestic investors are more

likely to be contrarian or negative-feedback traders. The coefficients on the second (-0.0916) and third lag (-0.0118) of SET for domestic institutional investors and on the first lag (-0.0120) for individual investors, are negative and significant. Additionally, the net purchase activities by both types of domestic investors do not affect the baht/\$ currency value.

The variance decomposition of forecasting error variance by each variable based on 5, 10, 15, and 20 days ahead forecast confirms the earlier findings of relationship between net purchase activities, SET returns, and currency value. Additionally, the variance decomposition also yields similar inference regarding the difference in trading behavior between domestic and foreign investors. For all three types of investors, the VAR regressions show that past innovations in SET returns and baht/\$ value accounts for 99% of the total forecast variance in SET and baht/\$ currency value. The findings of positive-feedback trading behavior of foreign investors is also economically significant as indicated by more than 20% of forecast variance in trading activities is associated with the innovations in SET returns and currency values. Similar conclusion can be reached for the contrarian trading behavior of domestic individual investors as above 22% of total forecast variance is accounted for by their own past innovation. On the other hands, the trading activity of domestic institutional investors is not as important as only 2% is associated with the innovations in SET returns and local currency value.

IV.3 Impulse Response Analysis

Figures 2 show the dynamic impulse response of SET returns, baht/dollar exchange rates, net purchases activities by domestic institutional, individuals, and foreign investors to unit random shocks from each of the variables for the entire sample. The Choleski factorization procedures are employed in performing the shocks to each series so that the shocks are orthogonalized. The impulse responses to Cholesky one standard deviation innovations in each variable are the coefficients from the moving average representation in Equation (3). The 95% confidence bounds for the impulse response coefficients are derived from the Monte Carlo procedure by Kloek and Van Dijk (1978).

The graphical representation of impulse response for foreign investors confirms the findings from the VAR results. First, there are strong correlation patterns in SET and Baht/\$ returns which seem to vanish within 3 days. This is not the case for foreigners' net purchases which slowly decay over 3 to 15 days. Second, one standard deviation innovation of foreign net purchase activity does not seem to have any significant impact on the SET and Baht/\$ returns, which confirms the findings of zero-block exclusion tests. By contrast, net purchase activities by foreigners increase by 7.32% within 1 day and dissipate to zero within 5 days in response to a unit standard error shock to the SET returns, which confirms the existence of positive feedback trading behavior of foreigners. A one standard deviation shock to the Baht/\$ returns also causes a net purchase activity of foreigners to decline by 0.98% and this effect vanishes quickly within 4 days.

The responses to its own variable shocks show a strong auto-regressive pattern, particularly for the net purchase activities by domestic institutional and individual investors which dissipate within 13 days. A one standard error shock caused by net purchase activities of either domestic individual or institutional does not have significant impact on country currency value; however, it causes the SET index to drop suggesting the price-destabilization effect. In response to a one

unit shock of net purchases by institutional investors, the SET index drops by 1.42% in 1 day and 8.87% in 2 days. For individual investors, SET drops in value by 13.12% in day 2 in response to a shock of net purchase by individual investors. Economically, this represents a significant price destabilizing impact, which concurs the VAR regression results. The negative-feedback or contrarian trading behaviors of both types of domestic investors are also notable, supporting the VAR regression analysis. A unit standard error shock to SET is associated with the net selling of 1.63% by institutional and 5.16% by individual investors in day 1, and it dissipates quickly in 9 days. There is no impact of country's currency on net purchase activities of individual investors, and its impact on institutional trading activity is weak. The impulse response coefficients lie within the 95% confidence band of zero.

We further investigate and distinguish trading behaviors among foreigners, local individual and institutional investors during four different crises including 1997 Asian financial crisis, 2004 Tsunami crisis, 2006 Political crisis, and 2008 riot crisis.

IV.4 The Impact of 1997 Asian Financial Crisis

In this section, we examine if there is any change in trading behavior of foreigners, domestic individuals and institutional investors before, during and after the 1997 Asian Financial crisis. The preliminary result reported earlier shows that foreigners shift from being aggressive net buyers of Thai equity before and during 1997 financial crisis to aggressive net sellers after the crisis. This significant shift in the overall sentiment and its association with any price destabilization effect during the July 2, 1997 financial crisis is examined through VAR and zero-block exclusion tests.

Table 5 shows the VAR and zero block exclusion F-statistics for the net flow activities of domestic individual, institutional, and foreign investors before, during, and after 1997 financial crisis. Overall results suggest that different investors react to financial crisis differently as shown by the changes in overall trading behavior during the crisis. First, positive feedback trading behaviors of foreigners are statistically significant but less persistence during the crisis. As shown in Table 6, the positive first lag coefficients of SET returns on netflow are large and significant before (0.0723) and after crisis (0.0424) but decreases to 0.0141 during crisis. The zero-block exclusion F-statistic associated with the block of lags SET return was significant and large before (22.12) and after (26.58) but small during the crisis (4.75). Second, foreigners respond to the depreciation of Baht value before and during the crisis by increasing their holding of Thai equity but selling off their position after the crisis. However, none of the VAR coefficients of Baht/\$ value on net flow were significant, nor the zero block F-statistic reject the null hypothesis that baht/\$ exchange rate is unimportant in explaining the trading behavior of foreigners. Third, the trading activities of foreigners lead to a destabilization of the country's stock market and the effect is strongest during the crisis period with the coefficient of 1.3122.⁴ It is often argued that their purchase following price rises will increase price further and sales following price falls will cause price to fall further. Such trading practice is destabilizing because such investors invest heavily in country with booming market and divest heavily from

⁴ The coefficients of net flows on SET return are large and significant across three sub-periods. They are 0.8169, 1.3122, and 1.0989 for the pre, crisis, and post 1997 financial crisis. The F-statistics zero block exclusions of 3.1254 (pre), 3.3399 (crisis), and 2.7229 (post) reject the null hypothesis that net flows are unimportant in explaining the SET returns at the 5% level.

countries with falling market. Lastly, net purchase activities by foreigners also cause baht to devalue during the crisis period but to appreciate in value after the crisis period. There is no evidence that net purchase activities by foreigners have any effect on baht value during the pre-crisis. The F-statistics associated with the block of lags of net purchase activities are 1.1469 during pre-crisis, compared to the significance of 2.9126 and 3.3071 during and after crisis.

The graphical representations of impulse response for foreign investors in Figure 3 show that the magnitude of positive feedback trading strategy is largest during the pre-1997. A unit shock of SET returns results in a 9.15% increase in net purchase by foreigners during the pre-, 5.21% in the crisis, and 5.18% in the post-1997 crisis periods. The impact before the crisis is slowly decaying out to 11 days comparing to 7 days during and after the crisis periods. The response of net flow activities of foreigners to a unit random shock to baht/\$ return exhibits similar pattern across three sub-periods with the first lag coefficients of -1.46%, -1.65%, and -1.92%, respectively. The effect vanishes quickly within 8 days. The variance decomposition reported in Table 6 shows that about 31% of the variation in the net purchase activities of foreigners comes from the innovations in the SET returns before the crisis and it declines to 3.60% and 1.60% during the crisis and after the crisis. However, the innovations in baht/\$ return comprises the highest 1.40% of net flow activities during the crisis compared with 0.75% before and after the crisis. During the post-crisis period, the economic importance of positive feedback trading is weakened and decreases with respect to innovations in SET and baht/\$ value. Additionally, the reaction of SET to a unit standard error net flow shock seems to be strongest during the crisis period. The SET index responses positively with an increase of 19.54% in the pre, 31.45% in the crisis, and 21.42% after the crisis and vanishes relatively quickly within 8 days. A unit standard error shock to net flow causes baht to depreciate by 19.75% during the crisis but appreciate by 3.82% after the crisis.

On the other hands, domestic investors behave differently in response to the crisis. Individual investors remain the most negative-feedback traders before the crisis (-0.0532) and became less aggressive during (-0.0124) and after (-0.0199) the crisis.⁵ There is no evidence of a consistent trading practice of institutional investors across three sub-periods. The baht currency values have no influence on the buy or sell activities of institutional investors. However, during the financial crisis period, the devaluation (appreciation) of baht urges the domestic individual investors to divest (increase) their holding of Thai equity.⁶ With the advent of 1997 financial crisis, we find evidence that contrarian trades by domestic individual investors had a destabilizing effect on Thai's stock market. This destabilizing effect seems to get stronger as it turns from the pre to the post-crisis period. The coefficients of net flow on SET are -0.5959, -1.1469, and -2.8347 for the pre, during, and post-crisis period, respectively. Such destabilizing effect from the institutional investors' trade only occurs during the crisis period. However, the trading behaviors of both types of domestic investors in general do not have any impact on the value of country's currency.

⁵ To conserve space, the VAR results for each type of domestic investors for each crisis are not reported here but are available from the authors upon request.

⁶ The coefficients of baht/\$ on net flow is -0.0121 and significant at the 5% level.

Impulse analysis also reports supporting evidence of the declining economic importance of negative feedback trading for individual investors across three sub-periods.⁷ A one standard error shock to the SET index is associated with net selling activities in the first day of 4.72% before the crisis period and it decreases to 3.39% and 3.43% during, and after the crisis. Prior to the crisis, about 30% of the variations in the net flow activities are explained by the innovations in SET, and this ratio declines to 1.20% and 2.3% during and after the crisis. However, the effect of negative feedback trading on the stock market is substantial particularly in the post crisis period causing a major decline of 26.93%, compared to 9.91% and 23.78% in the pre- and crisis periods.⁸ The negative feedback trading effect of institutional investors can also be discernible in the impulse response graph but becomes unimportant during and after the crisis periods. Before the 1997 financial crisis, a unit random shock to the SET causes a net selling of 6.96% in day 1. The price destabilization effect as a result of negative feedback trading implemented by institutional investors seems to be relatively small before and after the crisis. The impulse response coefficients fluctuate within 95% confidence band of zero.

IV.5 The Impact of 2006 Tsunami Natural Crisis

The second important major breakpoint was the Southeast Asia Earthquake and tsunami disaster which was struck on December 26, 2006, affecting 11 countries including Thailand. It seems logical to examine whether the Tsunami exerts a tremendous destructive power on the Thai's stock market and country's currency value as is the case of 1997 financial crisis. The VAR results are reported in Tables 5 and 7. Investigating foreigners' trading pattern shows that they are positive feedback trading and buy (sell) Thai equity following the SET index rises (falls). Similar positive feedback trading behaviors are documented across three sub-periods but strongest during the occurrence of Tsunami crisis with the coefficient of SET return on net flows of 0.0616, 0.0994, and 0.0691, respectively. The strongest effect of positive feedback trading during the Tsunami crisis as opposed to the weakest effect during the financial crisis is a general indication of the different perceptions of the crisis impact. Similar to the 1997 financial crisis, the country's currency values have no influence on the buy and sell activities of the foreigners before, during, and after the crisis. There is no evidence that trading practices of foreigners have a destabilizing impact on price and currency value during the crisis period, a result that is inconsistent with the financial crisis.⁹ However, before the advent of Tsunami, the buying activities of foreigners cause an appreciation in country's currency value. The coefficient of net flow on Baht/\$ value is -0.1729 and significant. This association disappears during and after the crisis.

Graphical representation of impulse response in Figure 4 shows that a unit standard error shock of SET reveals a positive response as much as 12.55% during the crisis in comparison with 8.10% and 9.93% before and after the Tsunami crisis, respectively. The impulse response coefficients during and after the crisis periods are highly persistent and slowly decaying upto 15 days and they are fluctuating away from the 95% confidence band of zero. However, the magnitude of security price destabilization effect caused by foreigners' trading activities is also

⁷ To conserve space, the results of impulse response analysis for domestic individual and institutional investors for each crisis periods are not reported here, but are available from authors upon request.

⁸ An innovation in baht value does not have any significant impact on the trading activities of individual investors and vice versa.

⁹ None of the coefficients of baht/\$ value on Net flow are significant.

limited. Prior to the Tsunami crisis, there is evidence of a currency destabilization effect by 3.52% in response to a shock of foreigners' trading activities.

Similar to the financial crisis, both domestic individual and institutional investors remain as negative feedback trading. The negative feedback trading practices for individual investors exist across three sub-periods and they become more aggressive during (-0.0393) and after (-0.0566) the crises. A unit random shock to the SET return is associated with the first day net selling of 3.56% in the pre, 7.31% in the crisis, and 9.07% after the crisis periods. For domestic institutional investors, the period of most net purchase (selling) occurs when stock market is falling (rising) is during the Tsunami crisis period. For a one unit standard error shock to SET, institutional investors sell off the equity at the rate of 5.43% during the Tsunami crisis period. Baht value has no impact on the trading behavior of domestic investors during the crisis period. This is not true for institutional investors who sell off Thai equity when baht depreciates in value especially during the crisis period. The trading activities by both types of domestic investors do not cause a destabilization of Thai stock market, nor a devaluation of Thai Baht. Only for the period before the crisis does the net purchase activity by individual investors cause a destabilization of Thai stock market and Baht to devalue relative to U.S. dollars. Impulse response analysis also provides supporting evidence. In response to a unit random shock to net selling activities by individual investors, stock market and baht currency drop in value by 14.10% and 3.9% within 2 days. The coefficients of net flow for SET return and Baht/\$ currency value from VAR are large and significant with the values of -1.9120 and 0.5262, respectively. It is interesting to note that effect of impulse response during the Tsunami crisis periods is more significant as the impulse response coefficients deviate away from 95% confidence band of zero.

Our findings are consistent with those of Hood et al (2013) who analyzed the trading behaviors of investors after the 2011 earthquake in Japan. The individual investors in Japan were the net sellers while the foreign investors were net buyers of Japanese securities. The act of foreign investors as net purchasers helped to stabilize the Japanese equity market after the earthquake disaster. The trading behaviors of foreign investors during 2006 Tsunami in Thailand are similar to those of foreign investor during the 2011 earthquake in Japan.

IV.6 The Impact of 2006 Political Coup Crisis

A military bloodless coup staged by General Sonthi Boonyaratglin on September 19, 2006 was the first military coup that took place in Thailand since the early 1990s. The purposes of the coup were to take over the power of Thai government run by Thaksin Shinawatr, suspend the constitution, and declare the martial law and ultimately led to an end of the conflict between anti-Thaksin and Thaksin-loyalist movement. In this section, we examine the trading behavior of foreign investors and its impact on country's stock market and currency around the political crisis and compare it with their trading behaviors around the 1997 financial and 2004 Tsunami crises. The results of VAR and zero block exclusion tests are reported in Tables 5 and 8.

Similar to trading behaviors reported in two prior crises, positive feedback trading is still a dominant trading strategy for foreign investors during the 2006 political crisis period. Before the onset of 2006 political coup, foreigners are engaged in the positive feedback trading with the coefficient of SET return on net flow of 0.0673. Their trading strategy remains the same but

weaker (0.0302) as a result of country's political instability and reverts to strongest positive feedback trading after the crisis (0.1250). Both types of domestic investors have been contrarian investors. The contrarian trading strategy is strongest during the post-crisis for individual investors (-0.0678) and during the crisis for institutional investors (-0.0584). During the 2006 political turmoil, the trading of foreigners and domestic institutional investors does not have any destabilizing impact on stock market and currency value, as is the case for 2004 Tsunami crisis. The results for individual investors are quite different. The trades conducted by local individual investors had a significant destabilizing effect during the crisis (-1.7624). The same is true for 1997 Asian financial crisis period. Consistent with the Asian financial and Tsunami crises, there is no association between country's currency value and the trading strategy implemented by foreigners, domestic individual and institutional investors.

The impulse response graphs as shown in Figure 4 provide supporting evidence from VAR regression. It is interesting to note that foreigners and individuals' trading activities are less responsive to any external shock to either SET or baht value during the crisis. However, they are more sensitive to an external shock to the SET in the post crisis and the baht value before the crisis. A unit random shock to SET during the crisis is associated with 13.87% net purchase of foreigners and 11.46% net sell of individual investors. On contrary, institutional investors' trading behavior are more sensitive to a shock to SET during the crisis period with a 6.68% net sell in 2 days and a 2.76% net purchase in response to a unit shock to baht value. The visual examination of currency destabilizing activities by all types of investors cannot be easily discerned from the impulse response plots, particularly during the crisis period. The price destabilization effect caused by individual investors is large especially during the crisis period with a 19.01% drop in SET value in day 1, compared with 1.74% for institutional investors. There is a marginal effect of foreigners' trading activities on Thailand stock market with the insignificant impulse response coefficients are between 1% and 2%.

IV.7 The Impact of October 2008 Riots

The last political crisis was a result of prolonged conflicts between supporters of People's Alliance for Democracy and the People's Power Party government's prime minister of Somchai Wongsawat.¹⁰ Since the beginning of the People's Alliance of Democracy's demonstrations in May 2008, the SET index had dropped by about 24.7% and the baht value hit a one-year low of 34.52 per US dollar.

We also investigate how this political turmoil affects the trading behavior among different types of investors and its impact on country's equity market and baht value. The VAR results and foreign investors trading behaviors are reported in Tables 5 and 9. Compared to other three crises, foreigners still remain as positive feedback trading in the periods before and during 2008 political riots. Their positive feedback characteristic was strongest during the pre (0.1252), weakened during the crisis (0.0258), and disappeared after the crisis period. Domestic institutional and individual investors were consistently pursued contrarian trading strategy regardless of the type of crisis. The contrarian trading strategy for institutional investors was of

¹⁰ The demonstrators of People's Alliance of Democracy occupied the Government House from August to October 2008. The clashes occurred on October 7, 2008 when the government ordered the police to use tear gas to stop the protestors who used razor wire barricades to prevent the legislature from hearing the prime minister's policy announcement. Instead, many bullets were fired at the protestors, causing 2 death and more than 400 people injured.

equal strength in the pre (-0.0302) and during (-0.0310) crises. Similar trading patterns are found across three sub-periods when compared with the 2006 political crisis. Before the crisis, individual investors remain as aggressive purchasers of SET when the index falls with the coefficient of -0.0663. Such negative feedback trading behavior disappears during and after the crisis period.

The trading behavior of foreigners is shown to have a positive effect on Thai stock market only in the crisis period with the 2.7626 coefficient on the first lag of net flow on SET. On the other hands, net purchase activities of domestic institutional investors tend to destabilize the stock markets before and during the crisis and the effect seems to be strongest during the crisis period.¹¹ In the post-2008 political crisis, the trading seems to show a mixed effect on the Thai stock market. The net purchase activities have a positive impact on SET in the short-run but exert a negative impact in the long-run. However, only in the crisis period does the net purchase of domestic individual cause a significant destabilizing effect on SET with a coefficient of -4.0689. The effect of trading activities on baht value is weaker. The net purchase activities for all three classifications of investors do not have any effect on country's currency value particularly in the period before the crisis. During political crisis, only the buying activities of foreigners cause an appreciation in baht value with the coefficient of -0.2626. Similar effect on baht value occurred during the post-political crisis for individual investors. However, opposite effect on baht value is found for the institutional investors. The coefficients of net purchase on baht/\$ value are -0.4104 for individual and 0.2085 for institutional investors, respectively.

Impulse response graphical representations in Figure 5 also support VAR regression results. A unit random shock to SET has the biggest effect on trading activities of foreigners and individual investors in the pre-crisis period. The net purchase of foreigners rose from 14% in 1 day to 17% in day 2 and the effects tapered off within 8 days. For individual investors, net selling activity increases by 11.52% in day 1. It is the crisis period where a standard error shock to baht causes a major effect on the trading activities of both foreigners and individual investors. For institutional investors, a shock to SET causes the largest drop in their net selling activities by roughly 2.1% particularly in the crisis period and the effect is slowly decaying within 14 days. It is interesting to note that a unit random shock to net trading activities of all three types of investors exerts the strongest price destabilization on Thailand's stock market during the crisis period.

V. Conclusion

We empirically investigate the trading behavior of foreign investors, domestic institutional investors and individual investors around three major breakpoints in the history of Thailand: 1997 Asian Financial Crisis, 2004 Tsunami Crisis, and 2006 and 2008 political crises. We particularly examine whether foreign investors' trading pattern changes in response to these crises and whether their trading activities cause a destabilizing effect in the Thai stock market and currency value.

During the period studies from January 1995 to August 2009, foreign investors were the net purchases of Thai equity and are engaged in positive feedback trading, which do not cause any destabilization in country's stock market. This is not the case for domestic individual and

¹¹ The coefficients of netflow at lag 4 for institutional investors on SET return is -1.1625 during the pre, at lage 2 is -1.8659 during the crisis, and at lag 3 is -1.2626.

institutional investors. They were the main net sellers of Thai equity and are engaged in negative feedback or contrarian trading, which have a price-destabilizing effect in the stock market of Thailand. However, there is no evidence of destabilizing effects of the trading activities of any types of investors on country's currency values.

When examining the trading activities of investors during the crisis period, we found that foreigners were aggressive net purchasers of Thai equity particularly during the 1997 Asian financial crisis, 2004 Tsunami crisis, and 2006 political coup. On the other hands, the occurrence of these crises causes a major sell-off of Thai equities among domestic individual and institutional investors. This indicates that these crises did not scare the foreign investors out of Thailand. The increase in net purchase activities by foreigners suggests that the damage caused by those crises is temporary. The trading activities were different for 2008 political riots where foreigners were aggressive net sellers. Such opposite trading behavior is suggestive of positive view of the 2006 political coup, in which they believe it will ultimately end the political upheaval and restore country's economic and financial stability. Both domestic individual and institutional were aggressive net purchasers before, during, and after 2008 political crisis.

The investment strategy of foreigners and domestic individual and institutional investors do not change as a result of the occurrence of financial, natural, and political crises. Foreigners remain as positive-feedback traders, consistently before, during, and after the crisis. Their positive feedback investment strategy is invariant to the nature cause of the crisis and it is strongest only during the 2004 Tsunami crisis period. For domestic individual investors, their negative-feedback trading in response to the drop in SET and baht value is consistent before, during, and after the 1997 Asian and 2004 Tsunami crises. Their negative feedback trading disappears during the 2006 and 2008 political crises. As for domestic institutional investors, their contrarian investment strategy is dominant during all the crises with the exception of 1997 financial crisis. The negative feedback trading behavior disappears after the crisis period.

It is the trading activities of domestic individual investors that destabilize the stock market of Thailand during the 1997 Asian financial crisis. The trading activities of foreigners and both types of domestic investors cause a major destabilizing effect on Thai equity during the 2008 political crisis. The buying (selling) when market drops (rises) of individual investors exert the strongest destabilizing effect on the country's stock market. There is no evidence of price-destabilizing effect during the 2004 Tsunami crisis. Lastly, there is no evidence of destabilizing effect on baht currency value caused by the trading activities of domestic individual and institutional investors in any of the financial, tsunami, and political crises. Only did the trading activities of foreigners cause the baht to devalue during the 1997 Asian financial crisis.

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Authors

Benjamas Jirasakuldech, CFA*

Professor of Finance, Slippery Rock University of Pennsylvania, School of Business, 1 Morrow Way, Slippery Rock, PA 16057, b.jirasakuldech@sru.edu

Riza Emekter

Associate Professor of Finance, Robert Morris University, School of Business, 6001 University Boulevard, Moon Township, PA 15108, emekter@rmu.edu

*Corresponding Author

Figure 1
Foreign Net Purchase in Thailand Equity Market during 1997-2009

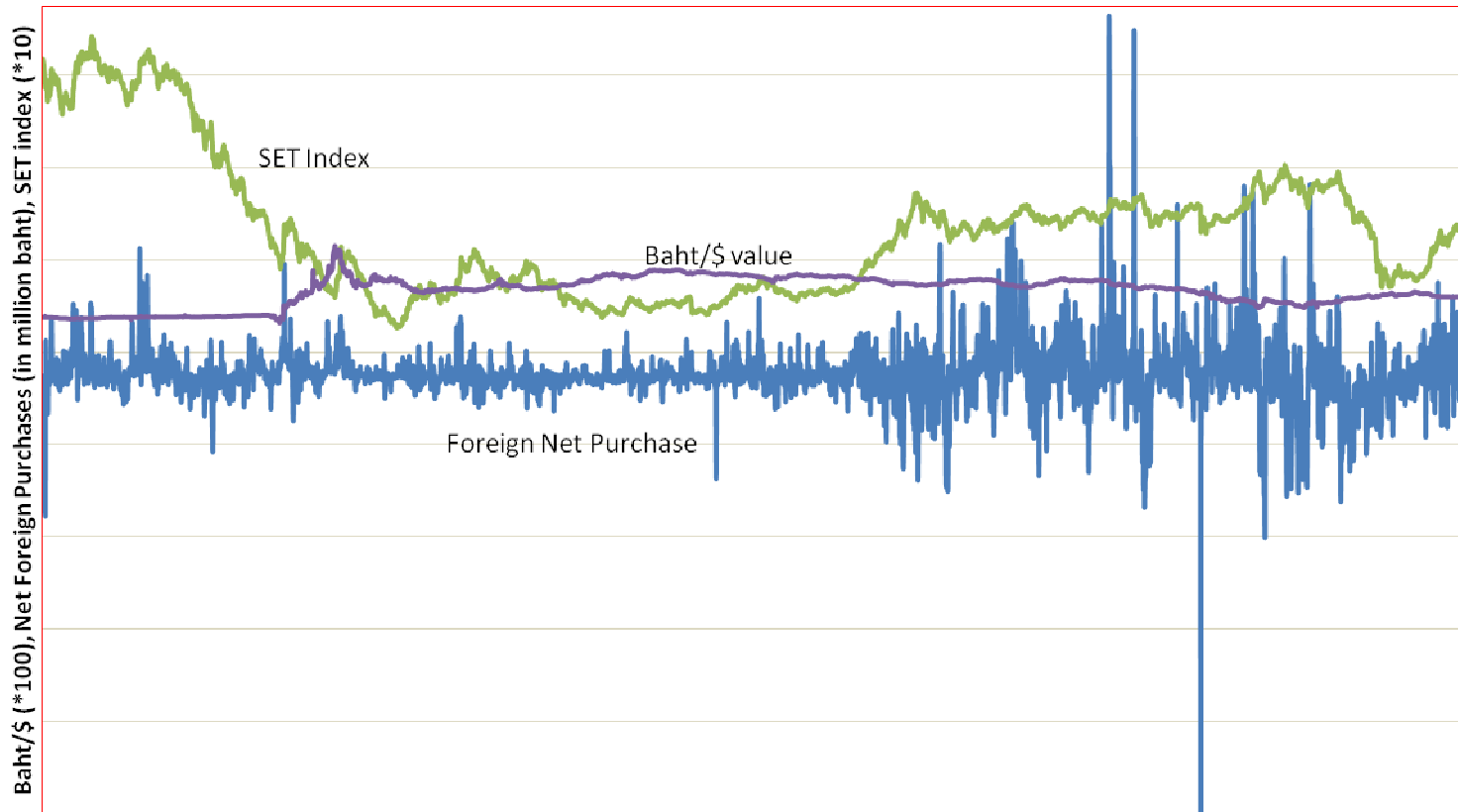


Table 1
 Descriptive Statistics of Trading Activities of Each Type of Investors, and SET stock return and Baht Value
 January 1995-August 2009

	Mean	Std. Dev.	Max	Min	Median	Skewness	Kurtosis	ρ_1	ρ_2	ρ_3	Q(3)	% of Total	
												Mean, %	Std. Dev., %
<u>Investment Flows (thousands baht)</u>													
Total Purchases/Sales	10,884,861	9,049,463	94,062,049	612,698	8,168,352	1.8425	8.9527	0.882	0.819	0.781	7,396.4***		
<u>Domestic Institutional Investors</u>													
Total Purchases	1,158,220	1,209,580	13,298,205	12,868	694,817	1.9709	9.5561	0.842	0.777	0.744	6,708***	1.2313	1.2859
Total Sales	1,171,375	1,202,224	13,459,881	17,180	742,896	1.9284	9.2043	0.852	0.802	0.765	7,030***	1.2453	1.2781
Net Purchases	-13,154	539,291	9,738,727	-5,091,679	-10,755	1.4748	40.1788	0.371	0.262	0.174	851.59***	-0.0140	0.5733
<u>Domestic Individual Investors</u>													
Total Purchases	6,789,883	6,391,004	86,149,886	266,510	5,053,378	2.7553	17.6977	0.880	0.838	0.807	7,649.3***	7.2185	6.7945
Total Sales	6,830,529	6,558,954	86,941,932	235,620	4,951,490	2.6038	15.9614	0.873	0.815	0.777	7,297.3***	7.2617	6.9730
Net Purchases	-48,389	1,242,910	28,029,891	-14,007,019	11,955	2.0226	86.9742	0.400	0.231	0.156	855.76***	-0.0514	1.3214
<u>Foreign Investors</u>													
Total Purchases	2,945,757	2,467,805	29,066,198	61,830	2,160,137	2.4255	15.0138	0.793	0.668	0.612	5,213.9***	3.1317	2.6236
Total Sales	2,882,956	2,245,638	35,773,007	45,734	2,194,685	2.3046	19.3389	0.806	0.709	0.670	5,760.8***	3.0650	2.3874
Net Purchases	63,834	1,320,095	15,361,985	-25,124,968	-1,883	-0.4560	56.9368	0.560	0.382	0.301	1976.1***	0.0679	1.4034
<u>Return (% per day)</u>													
SET Stock Return	-0.0203	1.7595	11.3495	-16.0633	-0.0435	0.1176	9.3990	0.104	0.060	0.006	51.767***		
Baht/\$ Exchange Rate	0.0084	0.8688	19.8719	-17.3568	0.0000	3.6178	184.5398	-0.119	-0.053	0.015	62.070***		

Notes : Descriptive statistics are calculated for daily sales, purchases, and net purchases for domestic institutional investors, domestic individual investors, and foreign investors and for log returns on SET stock index and Baht/U.S. \$ exchange rate. The period of studies is from January 1995 to August 2009 for a total of 3,952 observations. The figures in "% of Total" column indicate the ratio of mean and standard deviation of each type of investors' sales, purchases and net purchases to the maximum of total purchases. Q(3) is the Ljung-Box Portmanteau test statistics of no autocorrelation upto lag 3. All the data with the exception of Baht/U.S. \$ exchange rate are obtained from the Securities Exchange of Thailand (SET). The Baht/U.S. \$ exchange rates are obtained from Federal Reserve Bank of New York.

Table 2
 F-Test of the Difference in the Mean of Investment Flows of Each Type of Investors during Pre-Crisis, Crisis, and Post-Crisis Period
 January 1995-August 2009

	1997 Financial Crisis				2004 Tsunami				2006 Political Coup				2008 Riot			
	Pre-Mean	Crisis Mean	Post-Mean	F-Test	Pre-Mean	Crisis Mean	Post-Mean	F-Test	Pre-Mean	Crisis Mean	Post-Mean	F-Test	Pre-Mean	Crisis Mean	Post-Mean	F-Test
Investment Flows (in Million Baht)																
Total Purchases/Sales	5,437.57	3,533.24	5,578.35	44.93***	15,901.11	17,770.59	16,231.29	2.18	15,761.46	16,289.54	18,749	7.06***	19,552.85	13,584.19	15,594.56	33.97***
<u>Domestic Institutional</u>																
Total Purchases	12.76	5.90	5.19	608.99***	7.40	9.51	11.25	147.03***	11.47	13.08	16.09	92.84***	16.21	19.30	20.04	38.03***
Total Sales	13.87	7.44	5.06	698.22***	6.78	11.39	11.57	346.25***	11.64	13.27	15.58	75.07***	15.81	17.08	20.32	60.83***
Net Purchases	-1.11	-1.54	-0.13	16.97***	0.61	-1.88	-0.32	38.04***	-0.17	-0.18	0.52	1.63	0.40	2.22	-0.28	8.55***
<u>Domestic Individual</u>																
Total Purchases	52.53	51.54	67.20	383.72***	70.38	61.75	56.10	339.44***	56.01	49.78	54.44	44.11***	54.19	56.65	59.31	23.49***
Total Sales	51.92	53.74	64.55	187.93***	70.27	63.04	56.58	220.52***	56.47	52.06	52.07	19.09***	51.94	50.03	58.83	51.39***
Net Purchases	0.61	-2.20	2.64	33.11***	0.11	-1.28	-0.44	2.94*	-0.46	-2.28	2.37	14.11***	2.25	6.62	0.47	19.00***
<u>Foreign Investors</u>																
Total Purchases	34.71	42.56	27.61	241.29***	22.23	28.73	32.64	213.65***	32.52	37.13	29.46	48.73***	29.60	24.05	20.65	71.58***
Total Sales	34.20	38.81	30.28	57.92***	22.95	25.57	31.83	105.11***	31.89	34.67	32.35	7.20***	32.26	32.90	20.84	118.44***
Net Purchases	0.50	3.74	-2.77	50.80***	-0.72	3.16	0.80	17.35***	0.63	2.46	-2.89	15.45***	-2.66	-8.85	-0.19	45.34***

Notes: Means for daily sales, purchases, and net purchases of domestic institutional investors, domestic individual investors, and foreign investors are calculated for pre/crisis/post 1997 financial crisis, 2004 Tsunami crisis, 2006 Political coup and 2008 Riots. The trigger event for 1997 financial crisis is July 2, 1997, the pre-crisis period is from January 4, 1995-June 29, 1997 (609 observations), the crisis period is from June 30, 1997 to December 30, 1998 (370 observations), and the post-crisis period is from January 4, 1999-December 28, 2001 (737 observations). The trigger event for 2004 Tsunami natural crisis is December 26, 2004, the pre-crisis period is from January 2, 2002 to November 30, 2004 (717 observations), the crisis period is from from December 1, 2004 to July 29, 2005 (159 observations), and the post-crisis is from August 1, 2005-July 31, 2006 (245 observations). The trigger event for 2006 political crisis is September 16, 2006, the pre-crisis is from September 1, 2005 to September 11, 2006 (252 observations), the crisis period is from September 12, 2006 to August 31, 2007 (239 observations), and the post-crisis is from September 3, 2007 to April 30, 2008 (163 observations). The trigger event date for 2008 political riots is October 7, 2008, the pre-crisis period is from October 1, 2007 to May 23, 2008 (157 observations), the crisis-period is from May 26, 2008 to December 3, 2008 (134 observations), and the post-crisis period is from December 4, 2008 to August 31, 2009 (176 observations). Purchases, Sales, and net purchases by each type of investors are calculated as a percentage of average total purchases.

Table 3
 Cross-Correlation of Investment Flows among Different Types of Investors

	Domestic Institutional	Domestic Individual	Foreign Investors	SET Return	Baht/\$ Value
Panel A: July 2, 1997 Financial Crisis					
<u>Pre-Crisis Period (January 4, 1995-June 27, 1997)</u>					
Local Institutional	1.0000				
Local Individual	0.7700	1.0000			
Foreign Investors	-0.4950**	-0.8580**	1.0000		
SET Return	-0.1970**	-0.319**	0.3630**	1.0000	
Baht/\$	-0.0900*	-0.0020	0.0450	0.0670	1.0000
<u>Crisis-Period (June 30, 1997-December 30, 1998)</u>					
Local Institutional	1.0000				
Local Individual	0.1290*	1.0000			
Foreign Investors	-0.4250**	-0.9230**	1.0000		
SET Return	-0.1380**	-0.2950**	0.3260	1.0000	
Baht/\$	-0.0580	0.0630	-0.0570	-0.2020**	1.0000
<u>Post-Crisis Period (January 4, 1999-December 28, 2001)</u>					
Local Institutional	1.0000				
Local Individual	-0.0960**	1.0000			
Foreign Investors	-0.2310**	-0.9130**	1.0000		
SET Return	-0.0030	-0.2810**	0.2860**	1.0000	
Baht/\$	0.0570	0.1080**	-0.1460**	-0.2050**	1.0000
Panel B: December 26, 2004 Tsunami Natural Crisis					
<u>Pre-Crisis Period (January 2, 2002-November 30, 2004)</u>					
Local Individual	1.0000				
Local Individual	-0.0820*	1.0000			
Foreign Investors	-0.2810**	-0.8890**	1.0000		
SET Return	0.0920*	-0.3920**	0.3430**	1.0000	
Baht/\$	0.0850*	0.1220**	-0.1590**	-0.1460**	1.0000
<u>Crisis-Period (December 1, 2004-July 29, 2005)</u>					
Local Institutional	1.0000				
Local Individual	0.1810*	1.0000			
Foreign Investors	-0.5380**	-0.9030**	1.0000		
SET Return	0.1150	-0.6500**	0.4930**	1.0000	
Baht/\$	0.2090**	0.3040**	-0.3620**	-0.1370	1.0000
<u>Post-Crisis Period (August 1, 2005-July 31, 2006)</u>					
Local Institutional	1.0000				
Local Individual	0.1120	1.0000			
Foreign Investors	-0.4780**	-0.8950**	1.0000		
SET Return	0.1550*	-0.5340**	0.3860**	1.0000	
Baht/\$	0.3000	0.2460**	-0.2300**	-0.2940**	1.0000

Notes: Correlation of daily net purchases among domestic institutional, domestic individuals, foreign investors, SET returns and Baht/\$ exchange rates are computed for various sub-periods. Net purchases of each type of investors are calculated as natural log of the ratio of total purchases and total sales. Negative sign indicates "net sales" and positive sign indicates "net purchases". All the data with the exception of Baht/\$ exchange rates are obtained from Securities Exchange of Thailand. Baht/\$ exchange rates are obtained from Federal Reserve Bank of New York.

Table 3 (Cont.)
 Cross-Correlation of Investment Flows among Different Types of Investors

	Domestic Institutional	Domestic Individual	Foreign Investors	SET Return	Baht/\$ Value
Panel C: September 16, 2006 Political Coup					
<u>Pre-Crisis Period (September 1, 2005-September 11, 2006)</u>					
Domestic Institutional	1.0000				
Domestic Individual	0.0900	1.0000			
Foreign Investors	-0.4430**	-0.9030**	1.0000		
SET Return	0.1690**	-0.5460**	0.4000**	1.0000	
Baht/\$ Value	0.0070	0.2220**	-0.2020**	-0.2920**	1.0000
<u>Crisis-Period (September 12, 2006-August 31, 2007)</u>					
Domestic Institutional	1.0000				
Domestic Individual	-0.0630	1.0000			
Foreign Investors	-0.3280**	-0.8780**	1.0000		
SET Return	0.2900**	-0.5830**	0.4220**	1.0000	
Baht/\$ Value	0.1470*	0.1560*	-0.1980**	-0.0550	1.0000
<u>Post-Crisis Period (September 3, 2007-April 30, 2008)</u>					
Domestic Institutional	1.0000				
Domestic Individual	-0.1480	1.0000			
Foreign Investors	-0.2040**	-0.9100**	1.0000		
SET Return	0.2940**	-0.6660**	0.5170**	1.0000	
Baht/\$ Value	0.0550	0.0040	-0.0320	-0.1490	1.0000
Panel D: October 7, 2008 Riots in Bangkok					
<u>Pre-Crisis Period (October 1, 2007-May 23, 2008)</u>					
Domestic Individual	1.0000				
Domestic Individual	-0.0820	1.0000			
Foreign Investors	-0.2760**	-0.9090**	1.0000		
SET Return	0.2500**	-0.6600**	0.5180**	1.0000	
Baht/\$ Value	0.0660	0.0290	-0.0690	0.1290	1.0000
<u>Crisis-Period (May 26, 2008-December 3, 2008)</u>					
Domestic Institutional	1.0000				
Domestic Individual	0.3520**	1.0000			
Foreign Investors	-0.2130*	-0.7880**	1.0000		
SET Return	0.5980**	-0.6330**	0.2790**	1.0000	
Baht/\$ Value	-0.1520	0.0480	0.0360	-0.1020	1.0000
<u>Post-Crisis Period (December 4, 2008-July 31, 2009)</u>					
Domestic Institutional	1.0000				
Domestic Individual	-0.6490**	1.0000			
Foreign Investors	0.0260	-0.7030**	1.0000		
SET Return	0.6270**	-0.5810**	0.2120**	1.0000	
Baht/\$ Value	-0.2620**	0.2160**	-0.0640**	-0.3790**	1.0000

Notes : Correlation of daily net purchases among domestic institutional, domestic individuals, foreign investors, SET returns and Baht/\$ exchange rates are computed for various sub-periods. Net purchases of each type of investors are calculated as natural log of the ratio of total purchases and total sales. Negative sign indicates "net sales" and positive sign indicates "net purchases". All the data with the exception of Baht/\$ exchange rates are obtained from Securities Exchange of Thailand. Baht/\$ exchange rates are obtained from Federal Reserve Bank of New York.

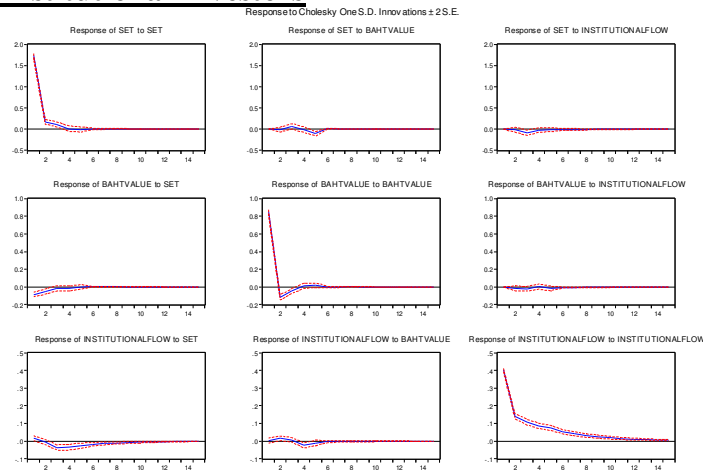
Table 4
 Vector Autoregression Results
 (January 2, 1995-August 31, 2009)

	Local Institutional Investors			Local Individual Investors			Foreign Investors		
	SET Return	Baht/\$ Value	Net Flow	SET Return	Baht/\$ Value	Net Flow	SET Return	Baht/\$ Value	Net Flow
<i>SET Return</i> _{t-1}	0.0991***	-0.0360***	-0.0059	0.0693***	-0.0409***	-0.0120***	0.0672***	-0.0392***	0.0409***
<i>SET Return</i> _{t-2}	0.0583***	-0.0126	-0.0916***	0.0347*	-0.0184**	0.0030**	0.0171	-0.0155*	-0.0076***
<i>SET Return</i> _{t-3}	-0.0070	-0.0117	-0.0118***	-0.0117	-0.0162*	0.0020	-0.0144	-0.0127	-0.0090***
<i>SET Return</i> _{t-4}	-0.0205	-0.0012	-0.0043	-0.0250	-0.0008	0.0068***	-0.0121	-0.0045	-0.0117***
<i>Baht/\$ Value</i> _{t-1}	-0.0147	-0.1398***	0.0169**	-0.0082	-0.1384***	-0.0051*	-0.0074	-0.1381***	-0.0011
<i>Baht/\$ Value</i> _{t-2}	0.0760**	-0.0744***	0.0042	0.0692**	-0.0750***	-0.0039	0.0791**	-0.0075***	0.0012
<i>Baht/\$ Value</i> _{t-3}	-0.0088	0.0005	-0.0330***	-0.0140	0.0010	0.0007	-0.0099	0.0007	0.0016
<i>Baht/\$ Value</i> _{t-4}	-0.1286***	0.0186	-0.0091	-0.1300***	0.0186	-0.0017	-0.1297***	0.0205	0.0047
<i>Net Flow</i> _{t-1}	-0.0328	-0.0454	0.3474***	-0.9932***	-0.1462	0.3726***	0.6722***	0.0674	0.3989***
<i>Net Flow</i> _{t-2}	-0.2087***	-0.0448	0.1454***	0.2754	-0.0324	0.0914***	0.0801	-0.0334	0.1468***
<i>Net Flow</i> _{t-3}	0.0545	0.0139	0.0699***	-0.1671	-0.1568	0.0549***	-0.1684	0.0552	0.0841***
<i>Net Flow</i> _{t-4}	0.0291	-0.0345	0.0411**	-0.0244	0.1328	0.0883**	-0.0741	0.0329	0.0746***
Constant	-0.0226	0.0055	-0.0126*	-0.0072	0.0111	0.0049**	-0.0171	0.0092	-0.0010
R ²	0.0220	0.0285	0.2547	0.0226	0.0244	0.3190	0.0256	0.0239	0.4227
F-Statistics	6.6695	8.6108	102.5673	7.8760	8.4354	140.2187	8.8248	8.2638	218.693
Zero Block Exclusion Tests (F-Statistics)									
SET Return	12.9244***	6.4785***	11.0709***	4.9613***	7.1376***	53.6073***	4.0024***	6.3597***	82.3831***
Baht/\$ Value	5.1885***	20.4531***	5.9715***	5.0126***	20.1903***	1.2911	5.3703***	20.1816***	0.3020
Net Flow	2.5136**	2.0459*	277.5965***	6.0634***	1.5332	229.5006***	8.8550***	1.0317	393.0567***
Variance Decomposition by Variable of N-Day Ahead Forecasts (in percent)									
<i>SET Return</i> _{t+5}	99.1780	1.4464	1.6657	98.7889	1.4569	21.8090	98.4415	1.4593	19.9818
<i>SET Return</i> _{t+10}	99.1668	1.4476	1.9543	98.7436	1.4592	21.4887	98.3926	1.4626	19.2497
<i>SET Return</i> _{t+15}	99.1663	1.4477	1.9744	98.7405	1.4592	21.4629	98.3863	1.4627	19.1392
<i>SET Return</i> _{t+20}	99.1663	1.4477	1.9758	98.7402	1.4592	21.4609	98.3854	1.4627	19.1223
<i>Baht/\$ Value</i> _{t+5}	0.5342	98.4096	0.4918	0.5346	98.4065	0.1351	0.5392	98.4775	0.1490
<i>Baht/\$ Value</i> _{t+10}	0.5382	98.3925	0.4869	0.5377	98.4031	0.1405	0.5429	98.4654	0.1700
<i>Baht/\$ Value</i> _{t+15}	0.5382	98.3910	0.4868	0.5376	98.4030	0.1408	0.5428	98.4636	0.1684
<i>Baht/\$ Value</i> _{t+20}	0.5382	98.3909	0.4868	0.5376	98.4030	0.1408	0.5428	98.4633	0.1681
<i>Net Flow</i> _{t+5}	0.2878	0.1441	97.8426	0.6764	0.1365	78.0559	1.0192	0.0632	79.8692
<i>Net Flow</i> _{t+10}	0.2950	0.1600	97.5589	0.7187	0.1377	78.3708	1.0645	0.0721	80.5803
<i>Net Flow</i> _{t+15}	0.2955	0.1613	97.5388	0.7219	0.1377	78.3963	1.0708	0.0737	80.6925
<i>Net Flow</i> _{t+20}	0.2955	0.1614	97.5374	0.7221	0.1377	78.3982	1.0718	0.0740	80.7096

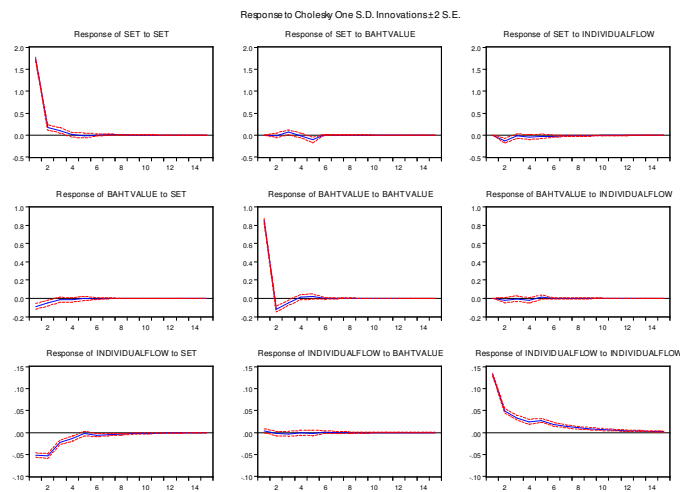
Notes: The vector autoregressive model is constructed as: $Y_t = A + B(L)Y_t + \varepsilon_t$, where L is the lag operator and 4 lags are used in this case, A is the vector of constant terms, and B is the matrix of coefficients. Y_t is a vector of [SET Return, Baht/\$ Value, Net Flow]_t, where SET returns are the log returns on the SET index, Baht/\$ values are the log of Baht/\$ exchange rate, and Net Flow is the net purchase of domestic institutional, domestic individual, and foreign investors. Net purchase is calculated as the log of ratio of total purchases and total sales. Negative sign indicates "Net Sales" and positive sign indicates "Net Purchases". Variance decomposition is computed for the N-day ahead forecast for SET return, Baht/\$ values, and Net flows, where N is 5, 10, 15, and 20 days ahead. ***, **, and * indicate 1%, 5%, and 10% significance level.

Figure 2: Impulse Response Analysis of SET and Baht/\$ Returns, and Net Purchases (January 2, 1995 –August 31, 2009)

Domestic Institutional Investors



Domestic Individual Investors



Foreign Investors

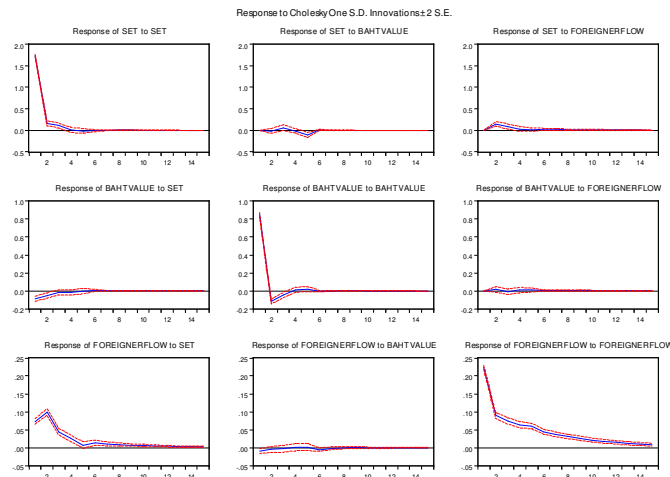


Table 5
 Comparison of Net Flow Activity Before, During, and After Crisis Using F-statistics from Zero-Block Exclusion Tests of the VAR model by Each Type of Investor

		Pre-Crisis Period			Crisis Period			Post-Crisis Period		
		SET Return	Baht/\$ Value	Net Flow	SET Return	Baht/\$ Value	Net Flow	SET Return	Baht/\$ Value	Net Flow
<i>Panel A: 1997 Asian Financial Crisis</i>										
Local Institutional Investor	SET Return	3.8231***	1.4138	2.9034**	2.8501**	2.3754*	0.7903	2.4447**	5.6345***	1.5945
	Baht/\$ Value	4.4515***	7.0992	1.3206	2.3546**	3.3751	2.3415*	0.1903	4.1029***	0.1653
	Net Flow	0.8545	1.4226	23.9056***	3.0587**	0.9241	29.3681***	0.4191	0.6138	42.0913***
Local Individual Investor	SET Return	3.0949**	0.8992	35.8011***	2.3942**	2.5685**	3.0258**	0.3602	2.8241**	23.2119***
	Baht/\$ Value	4.4061***	6.8529***	1.2598	2.1861*	0.6172	1.3114	0.4084	4.7155***	0.8188
	Net Flow	1.2775	1.2868	23.6740***	1.2383	1.1367	32.2785***	4.0120***	2.0455*	26.0120***
Foreign Investor	SET Return	1.3489	1.1469	22.1179***	2.8515**	2.9126**	4.7532***	0.6151	3.3071**	26.5810***
	Baht/\$ Value	5.1166***	7.1349***	0.5094	2.7547**	3.1703**	0.5398	0.3803	4.4546***	0.6495
	Net Flow	3.1254**	0.3959	50.4406***	3.3399**	1.7863	46.7343***	2.7229**	1.3792	23.9538***
<i>Panel B: 2004 Tsunami Natural Crisis</i>										
Local Institutional Investor	SET Return	0.7322	3.0239**	6.7368***	1.4505	2.4243*	7.2279***	1.9380	2.7813**	7.4990***
	Baht/\$ Value	0.9281	1.5742	0.4532	1.6670	1.9745	1.4766	2.5482**	0.7441	1.1554
	Net Flow	1.6531	1.3164	54.8291***	1.1962	1.7183	9.7715***	1.0414	0.0229	34.3054***
Local Individual Investor	SET Return	3.0949**	0.8992	35.8011***	1.0808	1.4872	5.2037***	0.9756	0.5980	6.3276***
	Baht/\$ Value	4.4061***	6.8529***	1.2598	1.8868	1.5369	1.1715	2.5019**	0.7650	2.1552*
	Net Flow	1.2775	1.2868	23.6740***	0.9849	0.6454	4.7939***	0.5672	0.8366	6.8576***
Foreign Investor	SET Return	3.0949**	0.8992	35.8011***	0.9027	1.5329	6.8157***	1.0888	1.153	4.7811**
	Baht/\$ Value	4.4061***	6.8529***	1.2598	1.6318	1.8259	0.7659	2.6089**	0.8445	2.1333*
	Net Flow	1.2775	1.2868	23.6740***	0.8570	1.1915	9.9807***	0.7751	0.3989	27.8798***
<i>Panel C: 2006 Political Coup</i>										
Local Institutional Investor	SET Return	1.5267	2.3338**	8.0577***	3.5409***	2.6123**	10.2895***	0.1642	2.8955**	7.2817***
	Baht/\$ Value	2.3535**	0.5431	1.2918	0.4756	2.5849**	3.5696***	0.9183	1.5810	1.3793
	Net Flow	1.2567	0.1307	36.1713***	1.2587	0.0046	20.2799***	1.6720	0.6625	6.0355***
Local Individual Investor	SET Return	0.8655	0.7352	6.1492***	3.6642***	0.7181	0.9185	0.2634	1.0903	5.6508***
	Baht/\$ Value	2.1049*	0.5009	1.9331	0.3197	2.7610	0.1397	0.8713	1.4834	1.6792
	Net Flow	0.5869	0.5827	7.0408***	1.0132	0.7387	7.0414***	0.5742	0.1969	0.4311
Foreign Investor	SET Return	0.8641	1.1837	4.4861***	2.4576**	0.8789	4.7819***	1.0108	1.2328	12.1820***
	Baht/\$ Value	2.1457*	0.5471	2.6108**	0.5040	2.9492**	0.5039	0.8856	1.4851	1.3139
	Net Flow	0.9098	0.4047	28.5428***	0.2392	0.6791	11.4751***	1.0586	0.2617	3.2992
<i>Panel D: 2008 Political Riots</i>										
Local Institutional Investor	SET Return	0.1260	3.2820**	8.5041***	2.6265**	1.5778	2.7913**	2.4655**	0.5210	0.8848
	Baht/\$ Value	0.9911	2.3877*	1.1129	0.9504	2.5849**	0.4792	3.4842***	1.6553	0.2221
	Net Flow	1.4087	0.8944	6.2918***	1.5159	0.8142	5.2740***	3.0540**	1.3676	9.7566***
Local Individual Investor	SET Return	0.3620	1.2881	5.3746***	1.4341	2.3716*	0.6908	1.3649	0.8462	1.5999
	Baht/\$ Value	0.9858	2.1710*	2.0465*	1.1972	0.7676	1.309	3.0957**	1.6971	1.6804
	Net Flow	0.6591	0.1723	7.0408***	2.2105*	0.6822	6.1411***	0.78809	1.6796	3.3792**
Foreign Investor	SET Return	1.0183	1.3782	12.1894***	0.4348	3.3577**	3.4060**	0.8799	0.9688	3.8895***
	Baht/\$ Value	1.0448	2.1245*	1.6804	0.8585	0.7278	1.4219	2.8477**	1.4821	2.7771**
	Net Flow	1.0449	0.1224	3.5607***	2.7519**	1.7426	7.9321***	1.2346	0.1383	3.8177***

Notes: The vector autoregressive model is constructed as: $Y_t = A + B(L)_T Y_t + \varepsilon_t$, where L is the lag operator and 4 lags are used in this case, A is the vector of constant term and B is the matrix of coefficients. Y_t is a vector of [SET Return_t, Baht/\$ Value_t, Net Flow_t], where SET returns are the log returns on the SET index, Baht/\$ values are the log of Baht/\$ exchange rate, and Net Flow is the net purchase of domestic institutional, domestic individual, and foreign investors. Net purchase is calculated as the log of ratio of total purchases and total sales. Negative sign indicates "Net Sales" and positive sign indicates "Net Purchases". Variance decomposition is computed for the N-day ahead forecast for SET return, Baht/\$ values, and Net flows, where N is 5, 10, 15, and 20 days ahead. The trigger event date for Financial crisis is July 2, 2009, for Tsunami is December 26, 2004, for Political coup is September 16, 2006, and for political riots is October 7, 2008.

Table 6
 Vector Autoregression Results for the Net flows Activities of Foreign Investors Before, During and After 1997 Financial Crisis

	Pre-Crisis Period			Crisis Period			Post-Crisis Period		
	SET Return	Baht/\$ Value	Net Flow	SET Return	Baht/\$ Value	Net Flow	SET Return	Baht/\$ Value	Net Flow
<i>SET Return</i> $t-1$	0.0894**	-0.0223	0.0723***	0.1124**	-0.1121***	0.0141***	0.0418	-0.0063	0.0424***
<i>SET Return</i> $t-2$	0.0151	-0.0212	-0.0076	-0.0922*	-0.0065	-0.0059	0.0354	-0.0222**	-0.0030
<i>SET Return</i> $t-3$	-0.0147	0.0318	-0.0056	-0.0155	-0.0842**	-0.0074	-0.0330	-0.0002	-0.0052
<i>SET Return</i> $t-4$	-0.0727	-0.0084	-0.0156*	-0.0541	0.0318	-0.0120**	0.0090	-0.0258***	0.0008
<i>Baht/\$ Value</i> $t-1$	0.1902*	-0.3397***	0.0083	-0.1221*	-0.1899***	0.0077	0.0640	-0.0275	-0.0238
<i>Baht/\$ Value</i> $t-2$	0.3601***	-0.3797***	0.0177	-0.0074	-0.0391	0.0021	0.1192	-0.1352***	-0.0114
<i>Baht/\$ Value</i> $t-3$	0.0891	-0.0537	0.0077	-0.0373	-0.0305	-0.0047	0.1603	0.0450	-0.0118
<i>Baht/\$ Value</i> $t-4$	-0.1882*	0.0381	0.0225	-0.1812***	0.0096	0.0007	0.0386	-0.0751**	0.0054
<i>Net Flow</i> $t-1$	0.8169***	0.1260	0.4574***	1.3122**	0.8244*	0.4683***	1.0989***	-0.1962**	0.2771***
<i>Net Flow</i> $t-2$	-0.1873	-0.0802	0.0912*	0.8224	-0.1891	0.1086*	-0.2560	0.0526	0.0805**
<i>Net Flow</i> $t-3$	-0.1397	0.0056	0.1256***	-0.0889	0.3900	-0.0244	0.2939	0.0409	0.0797**
<i>Net Flow</i> $t-4$	-0.0995	0.0112	0.0197	-0.1975	0.1279	0.1946**	0.0136	0.0243	0.0443
Constant	-0.1683***	-0.0099	0.0207*	-0.3132**	-0.0540	0.0209	0.0382	0.0247	-0.0360***
R ²	0.0827	0.1851	0.5122	0.0574	0.0378	0.3935	0.0129	0.0335	0.3071
F-Statistics	4.6583	11.2036	53.8616	2.8537	2.1961	20.7424	1.8011	3.1135	28.0338
Zero Block Exclusion Tests (F-Statistics)									
SET Return	1.3489	1.1469	22.1179***	2.8515**	2.9126**	4.7532***	0.6151	3.3071**	26.5810***
Baht/\$ Value	5.1166***	7.1349***	0.5094	2.7547**	3.1703**	0.5398	0.3803	4.4546***	0.6495
Net Flow	3.1254**	0.3959	50.4406***	3.3399**	1.7863	46.7343***	2.7229**	1.3792	23.9538***
Variance Decomposition by Variable of N-Day Ahead Forecasts (in percent)									
<i>SET Return</i> $t+5$	94.7769	0.9970	31.3037	94.1300	2.4751	3.3949	98.3883	0.1188	1.4929
<i>SET Return</i> $t+10$	94.5750	1.0238	30.6376	93.9450	2.4945	3.5604	98.3124	0.1240	1.5633
<i>SET Return</i> $t+15$	94.5704	1.0243	30.5944	93.9053	2.4938	3.6009	98.3103	0.1240	1.5657
<i>SET Return</i> $t+20$	94.5701	1.0243	30.5882	93.8978	2.4936	3.6086	98.3102	0.1240	1.5658
<i>Baht/\$ Value</i> $t+5$	3.2112	98.6163	0.7224	5.1979	93.6727	1.1294	6.2815	93.0005	0.7180
<i>Baht/\$ Value</i> $t+10$	3.4082	98.5821	0.7556	5.1887	93.4735	1.3359	6.2799	92.9792	0.7408
<i>Baht/\$ Value</i> $t+15$	3.4104	98.5813	0.7572	5.1876	93.4405	1.3673	6.2804	92.9783	0.7412
<i>Baht/\$ Value</i> $t+20$	3.4105	98.5813	0.7572	5.1874	93.4390	1.3736	6.2805	92.9783	0.7412
<i>Net Flow</i> $t+5$	2.0119	0.3867	67.9738	8.0420	0.4229	91.5330	23.5955	1.3125	75.0919
<i>Net Flow</i> $t+10$	2.0168	0.3941	68.6068	7.5228	0.4342	92.0430	23.9062	1.3057	74.7880
<i>Net Flow</i> $t+15$	2.0192	0.3944	68.6484	7.4262	0.4324	92.1413	23.9137	1.3058	74.7825
<i>Net Flow</i> $t+20$	2.0194	0.3944	68.6546	7.4076	0.4323	92.1601	23.9139	1.3056	74.7804

Notes: The vector autoregressive model is constructed as: $Y_t = A + B(L)Y_t + \varepsilon_t$, where L is the lag operator and 4 lags are used in this case, A is the vector of constant terms, and B is the matrix of coefficients. Y_t is a vector of [SET Return_t, Baht/\$ Value_t, Net Flow_t], where SET returns are the log returns on the SET index, Baht/\$ values are the log of Baht/\$ exchange rate, and Net Flow is the net purchase of domestic institutional, domestic individual, and foreign investors. Net purchase is calculated as the log of ratio of total purchases and total sales. Negative sign indicates "Net Sales" and positive sign indicates "Net Purchases". Variance decomposition is computed for the N-day ahead forecast for SET return, Baht/\$ values, and Net flows, where N is 5, 10, 15, and 20 days ahead. ***, **, and * indicate 1%, 5%, and 10% significance level.

Table 7
 Vector Autoregression Results for the Net flows Activities of Foreign Investors Before, During and After December 2006 Tsunami Natural Crisis

	Pre-Crisis Period			Crisis Period			Post-Crisis Period		
	SET Return	Baht/\$ Value	Net Flow	SET Return	Baht/\$ Value	Net Flow	SET Return	Baht/\$ Value	Net Flow
<i>SET Return</i> _{t-1}	0.0059	-0.0159*	0.0616***	0.0058	-0.0846**	0.0994***	0.0359	-0.0120	0.0691***
<i>SET Return</i> _{t-2}	-0.0219	0.0202**	-0.0171**	-0.1644	-0.0074	0.0027	-0.0345	-0.0567**	0.0107
<i>SET Return</i> _{t-3}	-0.0305	-0.0025	-0.0066	-0.1350	0.0120	-0.0184	-0.0075	-0.0197	-0.0057
<i>SET Return</i> _{t-4}	-0.0270	-0.0050	-0.0127*	-0.0002	0.0097	-0.0454**	0.1465*	-0.0085	0.0085
<i>Baht/\$ Value</i> _{t-1}	-0.2083	0.0770**	-0.0361	-0.5529**	-0.1395	0.0054	-0.3719*	-0.0736	-0.0537
<i>Baht/\$ Value</i> _{t-2}	0.1181	-0.0403	-0.0213	0.0864	-0.1990**	0.0348	0.3779*	-0.1055	0.0281
<i>Baht/\$ Value</i> _{t-3}	0.1470	-0.0087	0.0226	-0.1087	-0.0923	0.0789	-0.0668	-0.0594	0.0116
<i>Baht/\$ Value</i> _{t-4}	0.1133	0.0288	0.0417	0.1938	-0.0246	-0.0293	0.3496*	-0.0101	0.1075**
<i>Net Flow</i> _{t-1}	0.7844	-0.1729***	0.2965***	0.5953	0.0792	0.3896**	0.5368	-0.1144	0.3931***
<i>Net Flow</i> _{t-2}	-0.0657	0.0432	0.1467**	0.3508	-0.1749	0.0700	0.1109	-0.0391	0.1734**
<i>Net Flow</i> _{t-3}	0.1165	0.0369	0.0618	-0.3895	-0.2158	0.1582	-0.1913	0.1043	0.1721**
<i>Net Flow</i> _{t-4}	-0.0597	-0.0732	0.1276**	-0.1620	0.0154	0.0908	-0.2576	-0.0132	-0.0310
Constant	0.1316**	-0.0181	-0.0117	-0.0043	0.0922**	0.0338	0.0103	-0.0410*	0.0111
R ²	0.0108	0.0342	0.3636	0.0223	0.0265	0.4466	0.0290	0.0047	0.5453
F-Statistics	1.6504	3.1035	34.9050	1.2931	1.3498	11.3607	1.5979	1.0950	24.9871
Zero Block Exclusion Tests (F-Statistics)									
SET Return	3.0949**	0.8992	35.8011***	0.9027	1.5329	6.8157***	1.0888	1.153	4.7811**
Baht/\$ Value	4.4061***	6.8529***	1.2598	1.6318	1.8259	0.7659	2.6089**	0.8445	2.1333*
Net Flow	1.2775	1.2868	23.6740***	0.8570	1.1915	9.9807***	0.7751	0.3989	27.8798***
Variance Decomposition by Variable of N-Day Ahead Forecasts (in percent)									
<i>SET Return</i> _{t+5}	97.9712	0.4094	1.6194	92.5119	5.5813	1.9067	94.8713	3.7355	1.3931
<i>SET Return</i> _{t+10}	97.8694	0.4117	1.7188	92.4188	5.6349	1.9464	94.8174	3.7615	1.4210
<i>SET Return</i> _{t+15}	97.8614	0.4117	1.7269	92.4180	5.6361	1.9480	94.8152	3.7617	1.4230
<i>SET Return</i> _{t+20}	97.8605	0.4117	1.7278	92.4154	5.6361	1.9482	94.8149	3.7617	1.4233
<i>Baht/\$ Value</i> _{t+5}	4.3341	93.8687	1.7971	4.8279	92.0768	3.0952	14.5008	84.8516	0.6475
<i>Baht/\$ Value</i> _{t+10}	4.4574	93.4754	2.0676	4.9391	91.7514	3.3094	14.5196	84.8135	0.6620
<i>Baht/\$ Value</i> _{t+15}	4.4614	93.4447	2.0937	4.9489	91.6941	3.3569	14.5198	84.8180	0.6621
<i>Baht/\$ Value</i> _{t+20}	4.4618	93.4412	2.0969	4.9512	91.6879	3.3608	14.5198	84.8179	0.6621
<i>Net Flow</i> _{t+5}	27.0863	1.0741	71.8395	49.7483	1.7617	48.4899	40.8743	1.7941	57.3315
<i>Net Flow</i> _{t+10}	26.7569	1.0483	72.1949	48.9932	1.9112	49.0956	41.7016	2.1970	56.1013
<i>Net Flow</i> _{t+15}	26.6970	1.0437	72.2593	48.8504	1.8989	49.2506	41.7247	2.2422	56.0330
<i>Net Flow</i> _{t+20}	26.6905	1.0432	72.2663	48.8313	1.8970	49.2717	41.7280	2.2465	56.0253

Notes: The vector autoregressive model is constructed as: $Y_t = A + B(L)TY_t + \varepsilon_t$, where L is the lag operator and 4 lages are used in this case, A is the vector of constant terms, and B is the matrix of coefficients. Y_t is a vector of [SET Return_t, Baht/\$ Value_t, Net Flow_t], where SET returns are the log returns on the SET index, Bath/\$ values are the log of Baht/\$ exchange rate, and Net Flow is the net purchase of domestic institutional, domestic individual, and foreign investors. Net purchase is calculated as the log of ratio of total purchases and total sales. Negative sign indicates "Net Sales" and positive sign indicates "Net Purchases". Variance decomposition is computed for the N-day ahead forecast for SET return, Baht/\$ values, and Net flows, where N is 5, 10, 15, and 20 days ahead. ***, **, and * indicate 1%, 5%, and 10% significance level.

Table 8

Vector Autoregression Results for the Net flows Activities of Foreign Investors Before, During and After September 2006 Political Crisis

	Pre-Crisis Period			Crisis Period			Post-Crisis Period		
	SET Return	Baht/\$ Value	Net Flow	SET Return	Baht/\$ Value	Net Flow	SET Return	Baht/\$ Value	Net Flow
<i>SET Return</i> _{<i>t-1</i>}	-0.0019	-0.0054	0.0673 ^{***}	-0.2409 ^{***}	-0.0685 [*]	0.0302 [*]	-0.0043	0.0815	0.1250 ^{***}
<i>SET Return</i> _{<i>t-2</i>}	-0.0361	-0.0540 ^{**}	0.0093	0.0198	-0.0329	0.0056	-0.1759	-0.0524	0.0162
<i>SET Return</i> _{<i>t-3</i>}	-0.0141	-0.0232	-0.0038	0.0345	-0.0386	0.0145	-0.1179	-0.0318	0.0010
<i>SET Return</i> _{<i>t-4</i>}	0.1309 [*]	-0.0117	0.0028	-0.0081	-0.0083	-0.0235 ^{**}	-0.1551	0.0327	-0.0147
<i>Baht/\$ Value</i> _{<i>t-1</i>}	-0.4330 ^{**}	-0.0875	-0.0684	0.0780	-0.0376	-0.0031	-0.2212	0.1741 ^{**}	-0.0213
<i>Baht/\$ Value</i> _{<i>t-2</i>}	0.1853	-0.0537	0.0017	0.0816	-0.1784	-0.0184	-0.1341	-0.0152	-0.0244
<i>Baht/\$ Value</i> _{<i>t-3</i>}	-0.1390	-0.0419	0.0080	-0.0362	0.0895	-0.0020	0.0601	0.0092	0.0228
<i>Baht/\$ Value</i> _{<i>t-4</i>}	0.2922	-0.0166	0.1201 ^{***}	0.1541	-0.1184	-0.0209	0.0723	-0.0978	0.0469 [*]
<i>Net Flow</i> _{<i>t-1</i>}	0.6214	-0.1134	0.3712 ^{***}	0.1492	-0.0521	0.3627 ^{***}	0.5271	-0.0585	-0.0578
<i>Net Flow</i> _{<i>t-2</i>}	0.0003	-0.0275	0.1798 ^{**}	0.1351	-0.3484	0.1620 [*]	0.8645	-0.2476	0.2686 [*]
<i>Net Flow</i> _{<i>t-3</i>}	-0.1702	0.1037	0.2073 ^{***}	0.1764	-0.0717	0.0586	0.2492	0.1196	0.1054
<i>Net Flow</i> _{<i>t-4</i>}	-0.2555	-0.0085	-0.0434	0.1909	-0.0225	0.0179	-0.4559	0.1151	-0.0130
Constant	-0.0191 ^{**}	-0.0450 ^{**}	0.0113	0.0438	-0.0295	0.0239	0.1444	-0.0243	-0.0577 ^{**}
R ²	0.0217	0.0048	0.5422	0.0193	0.0450	0.3719	-0.0110	0.0196	0.4625
F-Statistics	1.4572	1.0986	25.3862	1.3843	1.9180	12.5449	0.8566	1.2636	12.3369
	Zero Block Exclusion Tests (F-Statistics)								
SET Return	0.8641	1.1837	4.4861 ^{***}	2.4576 ^{**}	0.8789	4.7819 ^{***}	1.0108	1.2328	12.1820 ^{***}
Baht/\$ Value	2.1457 [*]	0.5471	2.6108 ^{**}	0.5040	2.9492 ^{**}	0.5039	0.8856	1.4851	1.3139
Net Flow	0.9098	0.4047	28.5428 ^{***}	0.2392	0.6791	11.4751 ^{***}	1.0586	0.2617	3.2992
	Variance Decomposition by Variable of N-Day Ahead Forecasts (in percent)								
<i>SET Return</i> _{<i>t+5</i>}	95.3423	3.1680	1.4896	98.9942	0.8602	0.1456	94.8512	2.3324	2.8163
<i>SET Return</i> _{<i>t+10</i>}	95.2985	3.1846	1.5168	98.8559	0.9749	0.1693	94.5156	2.6571	2.8273
<i>SET Return</i> _{<i>t+15</i>}	95.2969	3.1847	1.5183	98.8502	0.9783	0.1714	94.5115	2.6603	2.8281
<i>SET Return</i> _{<i>t+20</i>}	95.2967	3.1847	1.5185	98.8501	0.9783	0.1716	94.5115	2.6605	2.8281
<i>Baht/\$ Value</i> _{<i>t+5</i>}	14.7138	84.6788	0.6073	5.7504	93.4300	0.8196	5.8423	93.7324	0.4252
<i>Baht/\$ Value</i> _{<i>t+10</i>}	14.7282	84.6512	0.6204	5.7763	93.2840	0.9397	5.9963	93.4871	0.5165
<i>Baht/\$ Value</i> _{<i>t+15</i>}	14.7283	84.6510	0.6206	5.7837	93.2691	0.9471	5.9969	93.4863	0.5167
<i>Baht/\$ Value</i> _{<i>t+20</i>}	14.7283	84.6510	0.6206	5.7842	93.2680	0.9476	5.9970	93.4863	0.5166
<i>Net Flow</i> _{<i>t+5</i>}	39.9733	1.8821	58.1446	48.6530	1.7928	49.5542	56.9030	2.1925	40.9044
<i>Net Flow</i> _{<i>t+10</i>}	40.9720	1.9251	57.1029	49.0421	1.9109	49.0470	56.5212	2.6893	40.7894
<i>Net Flow</i> _{<i>t+15</i>}	41.0009	1.9388	57.0603	49.0422	1.9253	49.0325	56.5245	2.6886	40.7868
<i>Net Flow</i> _{<i>t+20</i>}	41.0052	1.9399	57.0549	49.0423	1.9262	49.0315	56.5243	2.6889	40.7868

Notes: The vector autoregressive model is constructed as: $Y_t = A + B(L)Y_t + \epsilon_t$, where L is the lag operator and 4 lags are used in this case, A is the vector of constant terms, and B is the matrix of coefficients. Y_t is a vector of [SET Return_{*t*}, Baht/\$ Value_{*t*}, Net Flow_{*t*}], where SET returns are the log returns on the SET index, Baht/\$ values are the log of Baht/\$ exchange rate, and Net Flow is the net purchase of domestic institutional, domestic individual, and foreign investors. Net purchase is calculated as the log of ratio of total purchases and total sales. Negative sign indicates "Net Sales" and positive sign indicates "Net Purchases". Variance decomposition is computed for the N-day ahead forecast for SET return, Baht/\$ values, and Net flows, where N is 5, 10, 15, and 20 days ahead. ***, **, and * indicate 1%, 5%, and 10% significance level.

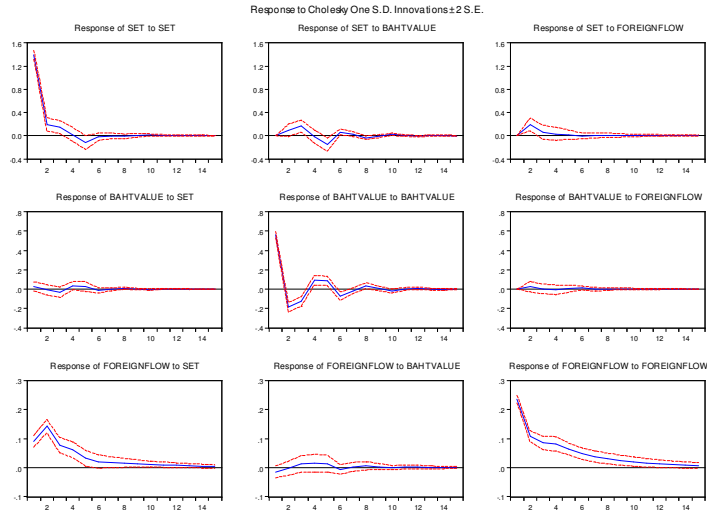
Table 9
 Vector Autoregression Results for the Net flows Activities of Foreign Investors Before, During and After October 2008 Political Crisis

	Pre-Crisis Period			Crisis Period			Post-Crisis Period		
	SET Return	Baht/\$ Value	Net Flow	SET Return	Baht/\$ Value	Net Flow	SET Return	Baht/\$ Value	Net Flow
<i>SET Return</i> $t-1$	-0.0130	0.0758	0.1252***	-0.0769	0.0359**	0.0258***	-0.0580	0.0815	0.0015
<i>SET Return</i> $t-2$	-0.1708	-0.0704	0.0207	0.0836	0.0015	-0.0077	-0.0193	-0.0524	-0.0165
<i>SET Return</i> $t-3$	-0.1536	-0.0428	-0.0028	-0.0334	0.0176	-0.0239**	0.1295	-0.0318	-0.0141
<i>SET Return</i> $t-4$	-0.1684	0.0357	-0.0210	0.0065	-0.0275*	-0.0138	0.0557	0.0327	-0.0214
<i>Baht/\$ Value</i> $t-1$	-0.2340	0.2104**	-0.0312	-0.5530	-0.0371	-0.1392**	-1.1819*	0.1741**	0.1174
<i>Baht/\$ Value</i> $t-2$	-0.1303	-0.0156	-0.0210	0.4835	-0.0941	-0.0430	-0.2750	-0.0152	-0.1280
<i>Baht/\$ Value</i> $t-3$	0.1360	0.0122	0.0266	-0.8644	0.1129	-0.0478	0.2358	0.0092	0.0632
<i>Baht/\$ Value</i> $t-4$	0.0870	-0.1186	0.0529*	-0.4246	0.0230	0.0432	0.8233*	-0.0978	0.0681
<i>Net Flow</i> $t-1$	0.5681	-0.0911	0.0875	2.7626***	-0.2626*	0.3533***	-0.2512	-0.0585	-0.0315
<i>Net Flow</i> $t-2$	0.8984	-0.1137	0.2710*	0.3169	-0.1038	0.2185**	0.2667	-0.2476	0.0192
<i>Net Flow</i> $t-3$	0.2637	0.0805	0.1366	-2.5189**	0.1605	-0.0135	-0.7685*	0.1196	0.0367
<i>Net Flow</i> $t-4$	-0.4293	0.1107	-0.0142	0.1865	0.1827	0.0869	0.6811*	0.1151	0.0161
Constant	0.1592	0.0036	-0.0514**	-0.2584	0.0761	-0.1058***	0.2115	-0.0243	-0.0005
R ²	-0.0120	0.0349	0.4861	0.0663	0.0535	0.3442	0.0401	0.0027	0.2168
F-Statistics	0.8492	1.4575	12.9805	1.7630	1.6070	6.6442	1.5946	1.0389	4.9463
Zero Block Exclusion Tests (F-Statistics)									
SET Return	1.0183	1.3782	12.1894***	0.4348	3.3577**	3.4060**	0.8799	0.9688	3.8895***
Baht/\$ Value	1.0448	2.1245*	1.6804	0.8585	0.7278	1.4219	2.8477**	1.4821	2.7771**
Net Flow	1.0449	0.1224	3.5607***	2.7519**	1.7426	7.9321***	1.2346	0.1383	3.8177***
Variance Decomposition by Variable of N-Day Ahead Forecasts (in percent)									
<i>SET Return</i> $t+5$	95.4300	2.6594	2.9105	89.6932	3.1466	7.1601	91.6679	5.7751	2.5569
<i>SET Return</i> $t+10$	93.9643	3.1107	2.9250	89.4443	3.1937	7.3618	91.2262	6.1761	2.5977
<i>SET Return</i> $t+15$	93.9558	3.1166	2.9272	89.4369	3.1953	7.3676	91.2189	6.1788	2.6026
<i>SET Return</i> $t+20$	93.9553	3.1169	2.9276	89.4365	3.1954	7.3679	91.2181	6.1791	2.6026
<i>Baht/\$ Value</i> $t+5$	5.9443	93.9112	0.1444	6.7829	89.7004	3.5166	7.0626	92.6103	0.3270
<i>Baht/\$ Value</i> $t+10$	6.2156	93.5455	0.2389	7.3074	88.8917	3.8008	7.1259	92.4974	0.3766
<i>Baht/\$ Value</i> $t+15$	6.2178	93.5430	0.2391	7.3100	88.8725	3.8173	7.1256	92.4962	0.3780
<i>Baht/\$ Value</i> $t+20$	6.2181	93.5427	0.2391	7.3101	88.8719	3.8180	7.1257	92.4961	0.3780
<i>Net Flow</i> $t+5$	57.3638	2.6325	40.0037	23.2252	3.7111	73.0636	21.3078	6.6346	72.0575
<i>Net Flow</i> $t+10$	56.5593	3.6469	39.7937	23.8581	3.8808	72.2611	22.3014	6.7185	70.9800
<i>Net Flow</i> $t+15$	56.5678	3.6431	39.7891	23.8209	3.8766	72.3034	22.3267	6.7254	70.9478
<i>Net Flow</i> $t+20$	56.5662	3.6448	39.7890	23.8184	3.8760	72.3055	22.3270	6.7254	70.9476

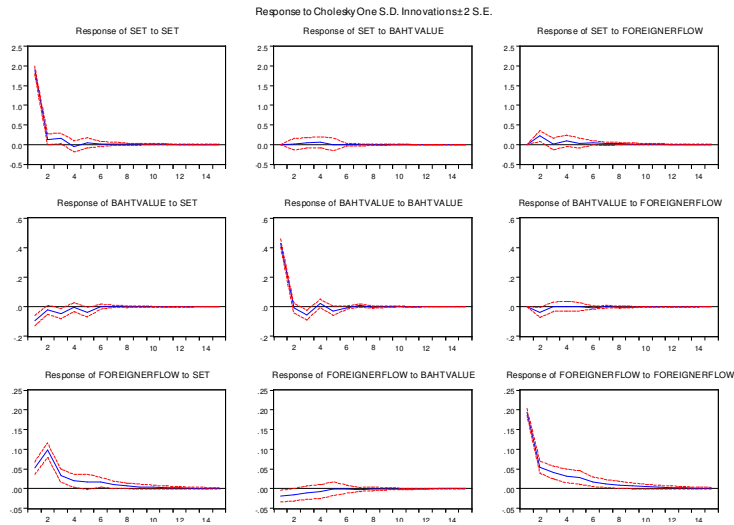
Notes: The vector autoregressive model is constructed as: $Y_t = A + B(L)_T Y_t + \varepsilon_t$, where L is the lag operator and 4 lags are used in this case, A is the vector of constant terms, and B is the matrix of coefficients. Y_t is a vector of [SET Return_t, Baht/\$ Value_t, Net Flow_t], where SET returns are the log returns on the SET index, Baht/\$ values are the log of Baht/\$ exchange rate, and Net Flow is the net purchase of domestic institutional, domestic individual, and foreign investors. Net purchase is calculated as the log of ratio of total purchases and total sales. Negative sign indicates "Net Sales" and positive sign indicates "Net Purchases". Variance decomposition is computed for the N-day ahead forecast for SET return, Baht/\$ values, and Net flows, where N is 5, 10, 15, and 20 days ahead. ***, **, and * indicate 1%, 5%, and 10% significance level.

Figure 3: Impulse Response Analysis of SET and Baht/\$ returns, and Net Purchases by Foreign Investors for Pre-, Crisis and Post-1997 Financial Crisis

Pre-1997



1997 Crisis



Post-1997

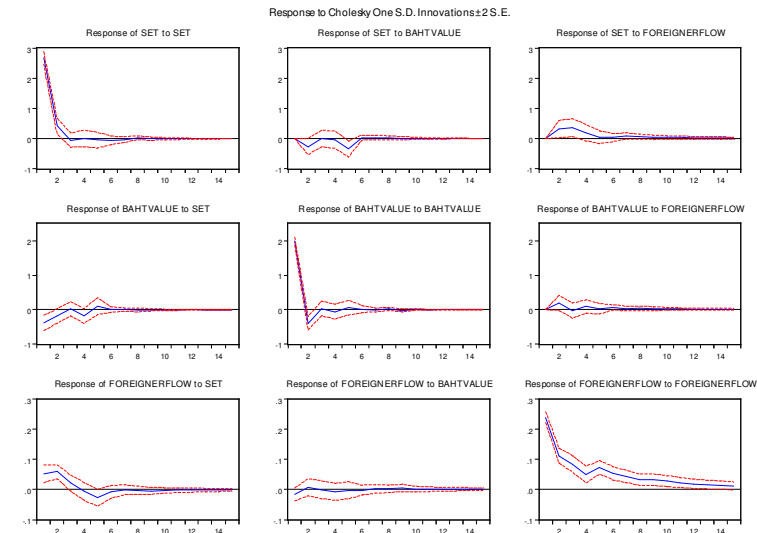
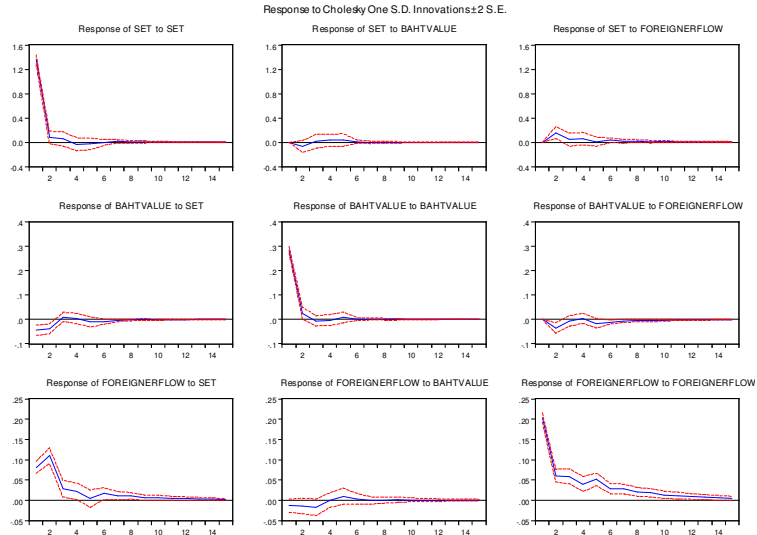
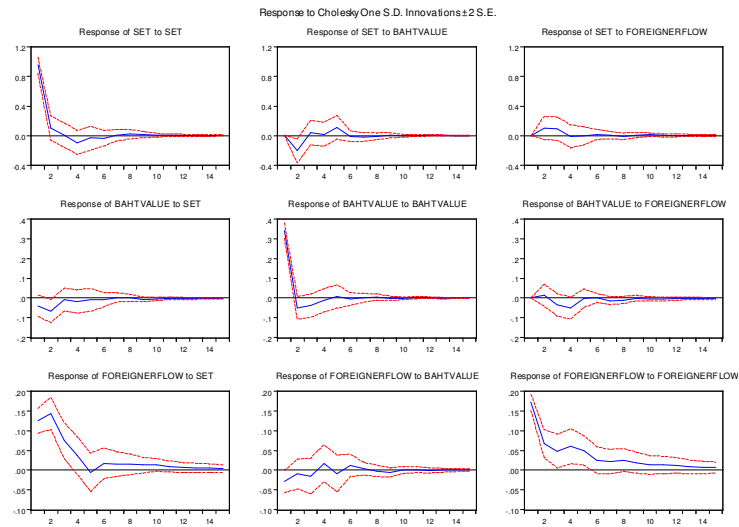


Figure 4: Impulse Response Analysis of SET and Baht/\$ returns, and Net Purchases by Foreign Investors for Pre-, Crisis and Post-2004 Tsunami Natural Crisis

Pre-2004



2004 Crisis



Post-2004

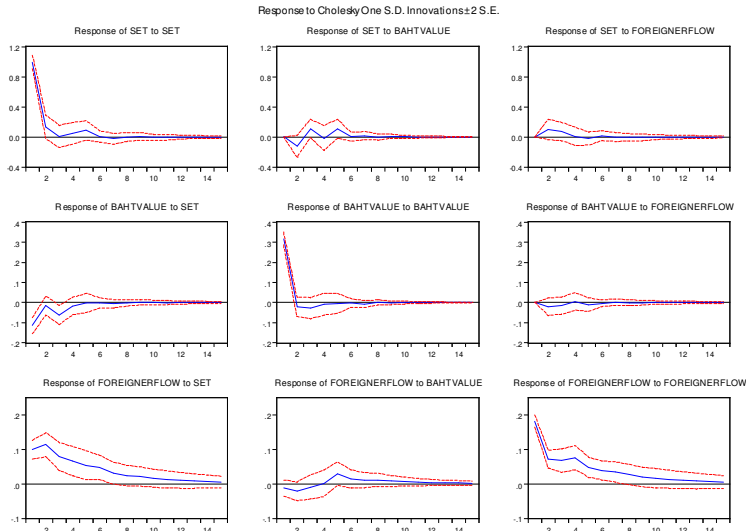
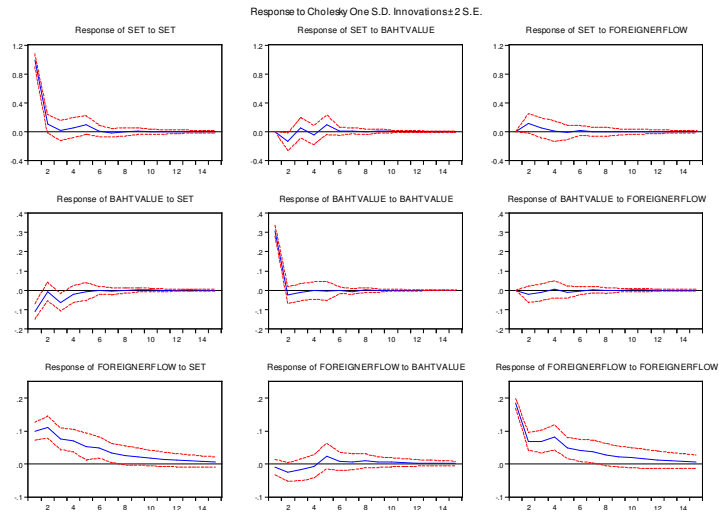
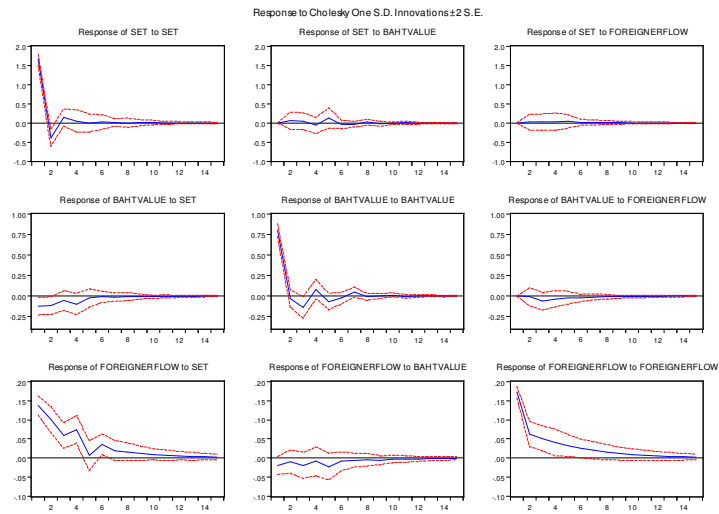


Figure 5: Impulse Response Analysis of SET and Baht/\$ Returns, and Net Purchases by Foreign Investors for Pre-, Crisis and Post-2006 Political Crisis

Pre-2006



2006 Crisis



Post-2006

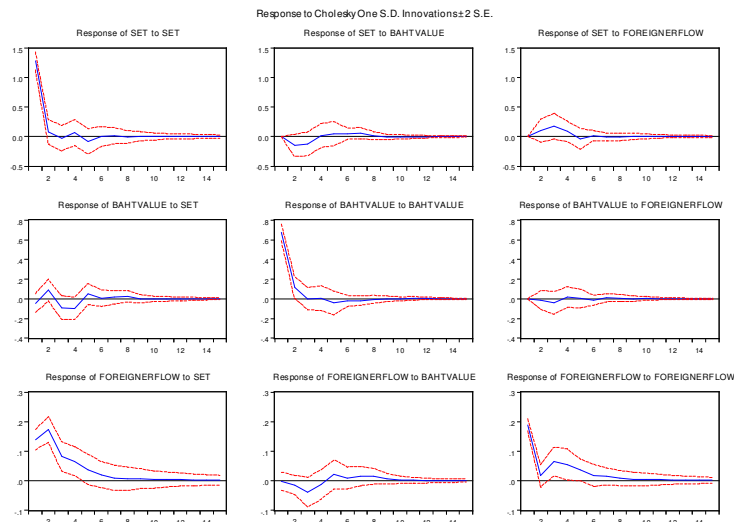
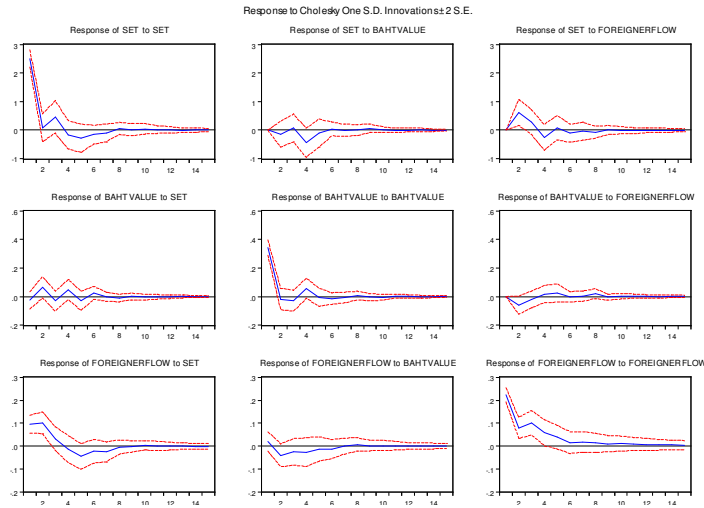
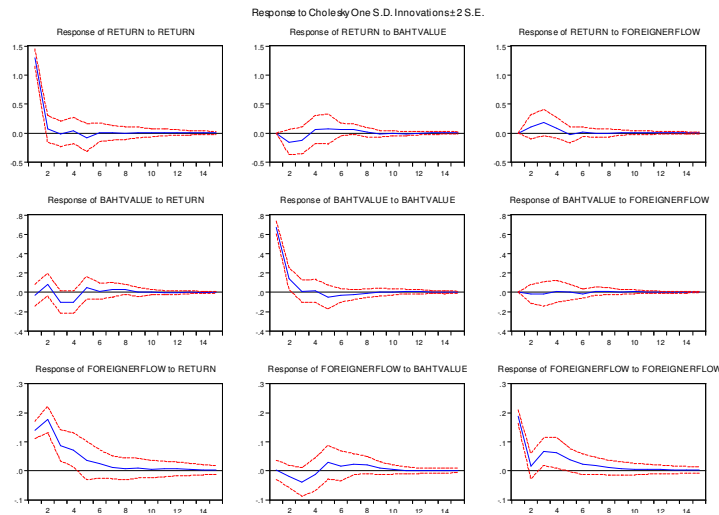


Figure 6: Impulse Response Analysis of SET and Baht/\$ Returns, and Net Purchases by Foreign Investors for Pre-, Crisis and Post-2008 Riot Crisis

Pre-2008



2008-Crisis



Post-2008

