



The Thai Bond Market's Behavior in the Time Surrounding Military Coups

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Abstract

The behavior of the Thai bond market in the time surrounding the 2006 and 2014 military coups is examined using the event-study method. Unlike the stock and foreign exchange market results, the bond market results are not affected by possible crony capitalism and seasonal international trade demands. Most variables, except for the 2014 abnormal return, reacted positively to these coups. Foreign investors did not panic; they were net buyers even before the coup occurrence dates. The behavior of returns and net foreign volume before the occurrence dates suggests leakage of the information about the planned coups.

Keywords

Bootstrapping, Event study, Military coups, Thai bond market

Introduction

Investors closely monitor political events and revise their expectations to be in line with new information (Pantzalis, Stangeland, & Turtle, 2000). In global emerging markets, especially those in Asia, the military is often dominant and has interfered in politics. It has power and uses coercion to restore political order. Therefore, a government's ability to run a country depends on their relationship with the military (Alagappa, 2001).

A military coup is a seizure of power from the government by the military, which uses or threatens to use its force. Different coups have different implications for economies and financial markets (Duggan, 2004). Politicians in emerging markets tend to abuse their power for personal benefit. Pervasive corruption upsets the public and leads to unrest. On the positive side, a coup helps to restore order and end corruption (Ockey, 1994). On the negative side, however, the seizure of power from an elected government by the military is illegal and anti-democratic (Pathmanand, 2008); a military government is inexperienced in running a country, and violence and chaos may follow (Duggan, 2004); and developed countries and international communities react negatively to most coups (Shannon, Thyne, Hayden, & Dugan, 2015). The net effect can be positive or negative.

Thailand is one of the world's leading emerging markets. Nevertheless, military coups are frequent and the country's ranking in terms of political stability is poor (Lumjiak, Quang, Gan, & Treepongkaruna, 2018). The recent military coups on September 19, 2006 and May 22, 2014 are important and interesting. As opposed to previous coups where the motivation was to deter the political influence of the left, the two recent coups instituted "Thai-style democracy" under which the military bloodlessly seized power from purportedly corrupt elected governments, ended the prolonged, widespread, and violent anti-government protests, and promised to return the country to democracy (Maisrikrod, 2007). According to Duggan (2004), the financial markets should react positively to these Thai-style democratic military coups.

Researchers who have empirically examined the behavior of the Thai financial markets in the time around the two coups have limited their attention to the stock and foreign exchange (FX) markets. Nimkhunthod (2007) studied the average reaction of stock returns to all coups up to 2006, including the September 19, 2006 coup, and found significant negative abnormal returns on the first trading day after the coups. However, the market rebounded and gave significant, positive abnormal returns in the following two weeks. Gyntelberg, Loretan, Subhanij, and Chan (2009) reported that the single most active day in terms of overall nonresident customer FX market volume was on September 21, 2006 — the first trading day after the 2006 coup. Kongprajya (2010) used the generalized autoregressive conditional heteroscedasticity in mean model to study the stock return and volatility

surrounding the 2006 coup. The researcher found that the average return after September 19, 2006 did not change, but the volatility rose significantly.

Lumjiak, Treepongkaruna, Wee, and Brooks (2014) studied the effects of the 2006 coup on the dynamics of return, volatility, volume, and liquidity risk in the stock and FX markets. The researchers found an immediate reaction to the coup in the stock market where the return and liquidity risk dropped while volatility and volume rose. The long-run impact was strong for the FX market; the bid-ask spread rose but liquidity risk fell. Civilize, Wongchoti, and Young (2015) compared the average monthly stock returns for military and democratic governments in 10 emerging markets. For Thailand, their sample began April 1975 and ended December 2007; therefore, the 2006 coup was included. The researchers found that the returns for military governments were significantly higher than those of elected governments. Recently, Lumjiak et al. (2018) measured the short and long-run impacts of the 2006 and 2014 coups on the stock and FX markets using event-study and regression methods. The 2006 coup induced depreciation of the baht and a positive stock return, while the 2014 coup produced the opposite results.

In this study, I examine the behavior of the Thai government-bond market in the time around the 2006 and 2014 coups. Although the government-bond market is important in terms of market capitalization, trading volume, and investor groups (Khanthavit, 2015), previous studies have not considered the market for the sample market. This study is the first in the literature to consider it for Thailand.

The government bond market is a better choice than the stock market for a sample market. Imai (2006) and Bunkanwanicha and Wiwattanakantang (2009) found evidence that indicated crony capitalism exists in Thailand. Politicians used their powers to implement regulations and public policies to favor their firms. When the military overthrew the governments, those politically connected firms were affected negatively. Because some of these firms are large and listed firms on the Stock Exchange of Thailand (SET), stock-market studies are biased against coups. Government securities are free from crony capitalism. Therefore, this bias should not be present in this study.

The government bond market is also a better choice than the FX market for a sample market. The baht is a financial asset and a medium of exchange. Its value is determined by speculative and international trade demands. Information about the coups comes from the speculative demand alone. Therefore, the baht return is a noisy proxy for information. Moreover, if coups induce capital flight from the Thai bond and stock markets to other national markets, the FX-market variables necessarily exhibit a repercussion effect. Baht receipts for foreign investors' bond and stock selling on coup dates can be converted and leave the country after the sell dates. Interpretation of the results for the FX market for a post-coup period is difficult.

I examine the bond market's behavior using the event-study method. The procedure is comprised of three aspects. First, it is important to note that the announcements for the 2006 and 2014 coups were at 11.00 p.m. on Tuesday, September 19, 2006 and at 4.30 p.m. on Thursday, May 22, 2014. Previous studies (e.g., Lumjiak et al., 2018), consider the coup occurrence dates of September 19, 2006 and May 22, 2014 as the event dates. When events take place after trading hours, event dates cannot be occurrence dates because investors cannot trade on the information regarding the events (Ahmed, 2017a). The event dates in this study are the following trading days: Thursday, September 21, 2006 and Friday, May 23, 2014.

Second, in event studies, lengths of the estimation window are chosen by researchers as they see fit. Typical lengths range from 100 to 300 days (Peterson, 1989). Kothari and Warner (2007) warned that event-study results may vary due to estimation windows that contribute to incorrect parameter estimates. To ensure that the estimation window is chosen appropriately, I conduct the cumulative sum control chart (CUSUM) test for structural changes during the estimation sample up to 300 days. The longest sample that passes the test is used for parameter estimation.

Third, most financial market variables are not normally distributed. Therefore, it is unlikely that abnormal and cumulative abnormal variables in event studies are. Moreover, in this study, the bond market's behavior is examined separately for the two coups. The abnormal and cumulative abnormal variables are not averaged across the events. Brown and Warner's (1985) results cannot justify the traditional significance test. In this study, the significance test is performed by a bootstrap method which does not require any specific distributional assumption (Chou, 2004; McWilliams & Siegel, 1997).

Methodology

The Model

The bond market's behavior is described by five variables—the outright trading volume, return, volatility, and foreign investors' gross and net trading volume. Let $v_{i,t}$ be the variable i on day t , and the abnormal variable $\varepsilon_{i,t}$ for $v_{i,t}$ is the deviation of $v_{i,t}$ from its mean \bar{v}_i . It proxies the impact of the coups on the market on day t .

$$\varepsilon_{i,t} = v_{i,t} - \bar{v}_i. \quad (1)$$

Equation (1) is the mean-adjusted model for event studies. The model performs as well as the alternatives (Brown & Warner, 1985). I do not use the market or market-adjusted model because the market itself is being studied. I am aware that previous studies, e.g., Bialkowski, Gottschalk, and Wisniewski (2007), adjusted $v_{i,t}$ by the regional- or world-market

variables. However, these variables are not available for bond markets except for the return and volatility.

The abnormal variable $\varepsilon_{i,t}$ for the return and volatility is biased for the hypothesis of no impacts when $v_{i,t}$ is adjusted by the regional-market index. The Thai bond market is large relative to the national markets in the region; therefore, the regional index is driven by the Thai market's movement.

The abnormal variable $\varepsilon_{i,t}$ offers noisy information about the coups when $v_{i,t}$ is adjusted by the world-market index. The U. S. and European markets are dominant in the world-market index calculation. These markets trade in different time zones from the Thai market. The world and Thai market variables are nonsynchronous.

I compute the cumulative abnormal variable $\varepsilon_{i,[t,t+n]}^{Cum}$ to measure the aggregate impact of the coup for n days from days t to $t+n$ by

$$\varepsilon_{i,[t,t+n]}^{Cum} = \sum_{k=t}^{t+n} \varepsilon_{i,k}. \quad (2)$$

Typically, day t is the first day of the pre-event window. The number n runs from 1 to the number of days in the window surrounding the event with a one increment. The plot of $\varepsilon_{i,[t,t+n]}^{Cum}$ against n is suggestive; the significance tests for $\varepsilon_{i,[t,t+n]}^{Cum}$ are not very powerful. The significance bands increase with n .

I calculate the average abnormal variables for the pre and post-event windows. The averages measure the impacts for the two windows. I also calculate the averages for the subparts of the windows to gain insights into how the impacts progress within the windows.

Model Estimation

The mean \bar{v}_i is the normal or predicted level of the variable expected to be observed if coups do not occur. It is not observed and must be estimated over days $[\tau^* - T, \tau^* - 1]$, totaling T days. Day τ^* is the first day of the pre-event window. I estimate \bar{v}_i by the average of the variable v_i in equation (3).

$$\bar{v}_i = \frac{1}{T} \sum_{t=\tau^*-T}^{\tau^*-1} v_{i,t}. \quad (3)$$

The estimation period must not immediately surround the event date because $v_{i,t}$ is influenced by the coups (Peterson, 1989). To compute the average, I must correctly and appropriately identify the event date or day $t = 0$, the pre-event window for days $[\tau^*, -1]$, and the estimation window for days $[\tau^* - T, \tau^* - 1]$.

Identification of the Event Date

The announcement of the two coups was made after the market's trading hours. I follow Ahmed (2017a) to identify the event dates as the following trading days on Thursday, September 21, 2006 and Friday, May 23, 2014 so that the event day $t = 0$ is the first day investors can react to the coups.

Length of the Pre-event Window

It is difficult even for political scientists to predict exactly when coups will happen (Howard & Walters, 2014). The pre-event period need not be very long. Nazir, Younus, Kaleem, and Anwar (2014) recommend against a long pre-event window because the abnormal variable $\epsilon_{i,t}$ will absorb the impacts of other economic and noneconomic events that are not interesting to the study. A window that is too short is not recommended either. The researchers are unable to analyze the impacts if the window is too short. I chose a 20-day pre-event window because it is the shortest length for a window typically chosen in event studies (Peterson, 1989). As a result, day τ^* is $t = -20$.

Length of the Estimation Window

For accuracy of the \bar{v}_i estimate, long estimation windows are preferred to short ones (Salinger, 1992). However, if the windows are too long, it is likely the estimation would suffer from structural changes. Typical lengths of the estimation window range from 100 to 300 days (Peterson, 1989).

I chose 300 days. However, before I estimate the mean \bar{v}_i , I conduct a CUSUM test for structural changes. If the window cannot pass the test, the length is shortened by 5 days and the test is repeated. Length shortening and test repeating continue until the window can pass the test. The average is computed based on the passing window's length.

Testable Hypotheses

Coups affect financial markets in significant ways (Duggan, 2004). I examine how the bond market was affected by the 2006 and 2014 coups.

Coups and Trading Volume

Coups convey information on the event date. Investors revise their expectations with respect to new information and rebalance their portfolios so that the trading volume rises (Lobo & Tung, 1997). Coups may negatively affect volume due to imprecise information about coups, the perceptual biases of investors (Chan, Chui, & Kwok, 2001) and investors' avoidance of making important economic decisions and trades (Asteriou & Siriopoulos, 2000).

Coups and Return

Different coups have different implications on returns (Duggan, 2004). Returns react positively if coups restore order and end corruption (Ockey, 1994). They react negatively if coups are violent and an inexperienced military government is appointed (Duggan, 2004), or if the coups are against developed countries and international communities (Shannon et al., 2015). The negative reaction is heightened due to selling by panic investors (Narayan & Smyth, 2013).

Coups and Volatility

Coups are unanticipated and bring exogenous shocks to the market. They raise political uncertainty and induce financial market instability (Vaugirard, 2007). In addition, by interpreting the information in different ways, investors may irrationally trade and drive asset prices away from their fundamental levels (Ahmed, 2017a). Most empirical studies, e.g., Jeribi, Fakhfekh, and Jarboui (2015), support volatility rising with coups.

Lumjiak et al. (2014) and Lumjiak et al. (2018) are the exception. The researchers found the stock and baht volatility fell for the 2006 and 2014 coups. The falling volatility is explained by these coups putting an end to the long, widespread, and violent anti-government protests and therefore bringing back political stability to the country (Duggan, 2004).

Coups and Foreign Investors' Trading

Coups as a political event are one of the major concerns of foreign investors (Ahmed, 2017b). The explanations as to how foreign investors' aggregate trading volume reacts to coups should be similar to those of the aggregate market volume.

Foreign investors' net selling equals local investors' buying and vice versa. Local investors exhibit home-country bias (Uppal, 1992); foreign investors are risk-sensitive and diversify their investment in various national markets for risk reduction (Civilize et al., 2015). If the foreign investors perceive rising risks due to coups, they should be net sellers. They should be net buyers if coups are perceived as reducing risk.

Hypothesis Tests

Under the null hypothesis of no coup impacts, the abnormal, cumulative abnormal, and average variables are not different from zero. Most financial market variables are not normally distributed. It is unlikely traditional t tests such as the one in Chen, Bin, and Chen (2005) are valid. I use a bootstrap method for the tests. Bootstrap tests do not require normality (Chou, 2004; McWilliams & Siegel, 1997).

One hundred thousand scenarios are constructed from sampling with replacement of the abnormal variables in the estimation window. The abnormal, cumulative abnormal, and

average abnormal variables in the windows in the time surrounding the coups are tested vis-à-vis the constructed scenarios.

Ederington, Guan, and Yang (2015) pointed out that the abnormal variable $\varepsilon_{i,t}$ for bond returns may be heteroskedastic due to decreasing time to maturity and infrequent trading. The heteroscedasticity problem should not be present in this study. The bond return is computed from the market's clean price index, and new bonds are auctioned regularly; the Thai bond market is a liquid market (Khanthavit, 2015).

The Data

The Thai bond market's behavior surrounding the 2006 and 2014 coups is described by the daily outright market-trading volume, return, volatility, and foreign investors' gross and net trading volume. The event dates are September 21, 2006 and May 23, 2014- the trading days following the occurrence dates on September 19, 2006 and May 22, 2014. The sample periods are from June 2, 2005 to October 19, 2005 (January 28, 2013 to June 19, 2014) for the 2006 (2014) coup. The periods include 300-day estimation windows, 20-day pre-event windows, event dates, and 20-day post-event windows. The variables are constructed from the data retrieved from the Thai Bond Market Association's database.

The total volume is the sum of outright and financing volumes. I chose the outright volume to represent the market volume because it is for a trading purpose. The financing transactions are a form of borrowing with a buy-back agreement. The outright volume is scaled by the market capitalization at the par value. The bond return is the logged return computed from the closing government-bond clean price indexes. The index indicates the weighted average government-bond price's movement due to trading and is free of accrued coupon income. Because only the closing index is available to me, I measure the daily volatility by the absolute return. This approach was used in previous studies (e.g., Civilize et al., 2015). The foreign investors' trading gross and net trading volumes are the gross and net volumes divided by the market capitalization. The return and volatility are in decimal points, while the market, gross foreign, and net foreign volumes are in percentage points. I do not scale the variables by their standard deviation. The sizes of abnormal and cumulative abnormal variables can be interpreted in practical ways.

Table 1 panel 1.1 reports the descriptive statistics for the 2006 and 2014 coup samples. All the variables are positively skewed except for the return and net foreign buying volume for the 2006 and 2014 coups. The excess kurtosis are positive and large, indicating the distributions are fat-tailed. The Jarque-Bera tests reject the normality hypothesis for all the variables at the 99% confidence level. Non-normality supports the bootstrap method for the tests for significant impacts.

Table 1 Descriptive Statistics

Panel 1.1 Full samples

Statistics	The 2006 Coup					The 2014 Coup				
	Market Volume	Return	Volatility	Gross Foreign Volume	Net Foreign Buying Volume	Market Volume	Return	Volatility	Gross Foreign Volume	Net Foreign Buying Volume
Average	0.4745	-0.0002	0.0014	0.0544	-0.0063	1.1964	0.0000	0.0011	0.1329	-0.0151
Standard Deviation	0.2136	0.0021	0.0017	0.0564	0.0516	0.3967	0.0017	0.0013	0.0894	0.0769
Skewness	1.1982	-0.5206	2.7807	1.8621	-0.5369	0.8893	-0.5059	3.4720	1.8375	-1.9860
Excess Kurtosis	3.4129	6.8260	10.9201	4.3769	7.9015	1.2580	10.1064	16.2391	6.7535	9.4398
Jarque-Bera Statistic	247.0973 ***	677.4389***	2,133.7664***	469.2674***	903.4550***	7.4300***	1,465.7630***	4,431.9639***	839.9383***	1,490.2582***
Estimation Length	341	341	341	341	341	341	341	341	341	341

Note: *** = Significance at the 99% confidence level.

Panel 1.2 Estimation Windows

Statistics	The 2006 Coup					The 2014 Coup				
	Market Volume	Return	Volatility	Gross Foreign Volume	Net Foreign Buying Volume	Market Volume	Return	Volatility	Gross Foreign Volume	Net Foreign Buying Volume
Average	0.4532	0.0000	0.0014	0.0607	-0.0088	1.0670	0.0000	0.0010	0.1089	-0.0080
Standard Deviation	0.2030	0.0014	0.0018	0.0607	0.0496	0.3220	0.0018	0.0013	0.0810	0.0739
Skewness	0.9204	-0.1581	2.6445	1.7524	-1.0485	0.7577	-0.5352	3.6365	2.9803	-2.2843
Excess Kurtosis	1.3383	1.6585	9.4775	3.7227	9.0365	1.2280	9.5545	17.9468	16.5631	12.5157
Jarque-Bera Statistic	61.5075***	17.2221***	1,447.9127***	234.1870***	1,057.7686***	34.0827***	1,155.4381***	3,124.8730***	2,775.8842***	1,849.1191***
Estimation Length	285	145	295	215	295	215	300	200	215	250

Note: *** = Significance at the 99% confidence level.

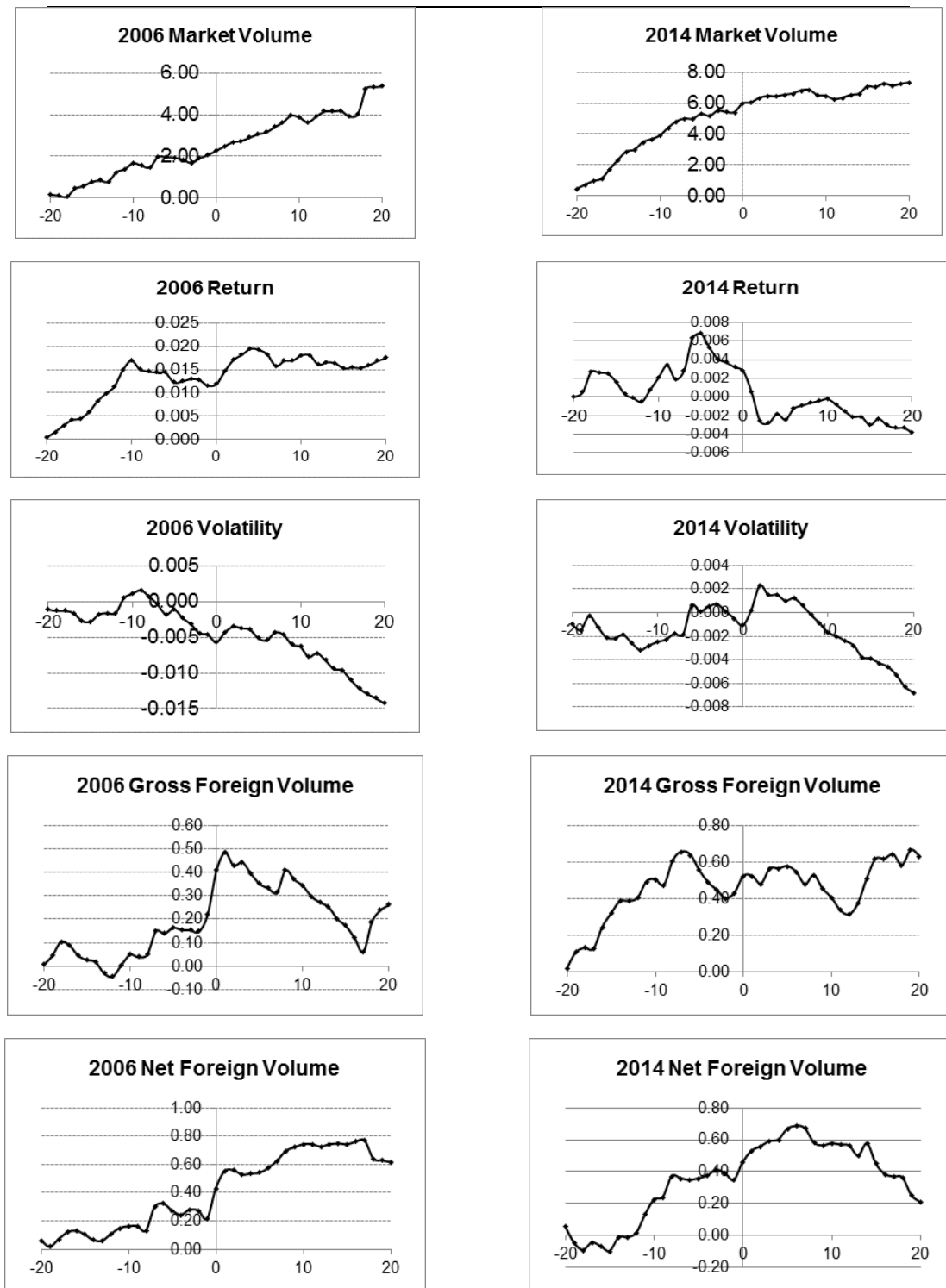
Empirical Results

Lengths of the estimation window must pass the CUSUM test for structural changes. Table 1 panel 1.2 reports the passing lengths in the last row. The lengths range from 145 days for the 2006 return to 300 days for the 2014 return. The normality assumption for the abnormal variables in the estimation windows is tested. The Jarque-Bera statistics are large. The hypothesis is rejected at the 99% confidence level for all variables.

The Cumulative Abnormal Variables

Figure 1 panels 1.1 and 1.2 show the cumulative abnormal variables for the 2006 and 2014 coups, respectively, in the periods from day $t = -20$ onward to day $t = 20$. The vertical axis represents the cumulative abnormal variables, while the horizontal axis represents the days of and surrounding the event date. Day $t = 0$ is the event date. The cumulative abnormal market volumes rise from day $t = -20$ until the event date. They keep rising after the date until they became stable from days $t = 10$ and $t = 8$ for the 2006 and 2014 coups. The cumulative abnormal returns show different patterns after the event dates. For the 2006 (2014) coup, the cumulative abnormal return rises (falls) for a period of time before it becomes stable. The cumulative abnormal volatility falls after the two coups. The cumulative abnormal gross foreign volume rises before the event dates for the two coups but later falls. On day $t = 20$, nevertheless, their levels are noticeably higher than the levels on day $t = -20$ when the series start. The cumulative abnormal net foreign buying volume exhibits an uptrend prior to the event dates; the trends continue for more than 15(5) days for the 2006 (2014) coup before they reverse. The ending cumulative abnormal net foreign buying volume is higher than its beginning level.

The bootstrap tests of the cumulative abnormal variables on day $t = 20$ found that the variables for the 2006 market volume, return, volatility, and net foreign buying volume are significant at the 90% confidence level. For the 2014 coup, significance is found only for the market volume.



Panel 1.1 The 2006 Coup

Panel 1.2 The 2014 Coup

Figure 1 Cumulative Abnormal Variables

Abnormal and Average Abnormal Variables on Event Dates and in Event Windows

The pre and post-event windows are 20 days in length, and I chose 5 day subparts. The behavior being examined is observed for one month before and after the event date. The subparts' averages reveal how the market behaves in each week in those two windows.

In Table 2 panel 2.1, the abnormal gross and net foreign buying volumes are positive and significant at the 90% confidence level on the event date for the 2006 coup. None of the average abnormal variables for the pre and post-event windows are significant except for the average for the return in the pre-event window, which is positive and significant at the 90% confidence level.

When I examine the averages for the subparts, I conclude that the insignificant averages are due to the weekly and daily abnormal variables in the windows cancelling out one another. For the market volume, the averages for the $[-15, -11]$, $[+1, +5]$, $[+6, +10]$, and $[+16, +20]$ subparts are positive and significant. The average abnormal returns are significant in the $[-20, -16]$, $[-15, -11]$ and $[+1, +5]$ subparts, while the average abnormal volatility is significant in the $[+16, +20]$ subpart. Finally, the average abnormal gross foreign volume is significant in the $[+11, +15]$ subpart, and the average abnormal net foreign buying volume is significant in the $[-20, -16]$ and $[-10, -6]$ subparts.

The results for the 2014 coups are reported in Table 2 panel 2.2. On the event date, the abnormal volume together with the abnormal gross and net foreign buying volume is positive and significant at the 90% confidence level. The average abnormal return in the pre-event window is significant. Significance at the 90% confidence level is found for the $[-20, -16]$, $[-15, -11]$, and $[-10, -6]$ subparts of the average abnormal market volume, the $[-10, -6]$ and $[+1, +5]$ subparts of the average abnormal return, the $[+16, +20]$ subpart of the average abnormal volatility, the $[-20, -16]$, $[-15, -11]$ and $[-5, -1]$ subparts of the average abnormal gross foreign volume, and the $[-15, -11]$, $[-10, -6]$ and $[+1, +5]$ subparts of the average abnormal net foreign buying volume.

Discussion

The Bond Market's Behavior in the time surrounding the Coups

The significant abnormal, cumulative abnormal, and average abnormal variables on the event dates and in the pre and post-event windows and their subparts lead me to conclude that the coups have significant impacts on the bond market.

Informative Coup Events

On the event dates, the abnormal market volume is not significant for the 2006 coup, but it is significant for the 2014 coup. When I examine the abnormal variables closely,

I find that the cumulative abnormal market volume is positive and significant at the 90% confidence level from day $t = -15$ onward to day $t = +20$. The investors adjusted their portfolios with respect to the coups even before the coups were announced. This finding supports Lobo and Tung (1997), who explained that coups brought information to the market.

Table 2 Cumulative Abnormal Variables in Sub-Parts of Pre- and Post-Event Windows and on Event Dates

Panel 2.1 The 2006 Coup

Days	Market Volume		Return		Volatility		Gross Foreign Volume		Net Foreign Buying Volume	
	20 Days	5 Days	20 Days	5 Days	20 Days	5 Days	20 Days	5 Days	20 Days	5 Days
-20 to -16		0.1128		0.0009 [*]		-0.0005		0.0094		0.0262 [*]
-15 to -11		0.1648 [*]		0.0021 [*]		0.0006		-0.0084		0.0036
-10 to -6	0.1033	0.1126	0.0006 [*]	-0.0001	-0.0002	-0.0005	0.0110	0.0270	0.0108	0.0345 [*]
-5 to -1		0.0230		-0.0006		-0.0006		0.0162		-0.0212
Event Date $t = 0$	0.2126		0.0004		-0.0011		0.1866 [*]		0.2153 [*]	
+1 to +5		0.1571 [*]		0.0015 [*]		0.0001		-0.0110		0.0220
+6 to +10		0.1619 [*]		-0.0003		-0.0003		-0.0016		0.0405
+11 to +15	0.1545	0.0619	0.0003	-0.0005	-0.0004	-0.0007	-0.0072	-0.0345 [*]	0.0092	-0.0002
+16 to +20		0.2372 [*]		0.0005		-0.0009 [*]		0.0181		-0.0254
Occurrence Date $t = -1$	0.1566		-0.0012		-0.0002		0.0727		-0.0572 [*]	

Note: ^{*} = significance at the 90% confidence level.

Panel 2.2 The 2014 Coup

Days	Market Volume		Return		Volatility		Gross Foreign Volume		Net Foreign Buying Volume	
	20 Days	5 Days	20 Days	5 Days	20 Days	5 Days	20 Days	5 Days	20 Days	5 Days
-20 to -16		0.3402*		0.0005		-0.0004		0.0487*		-0.0143
-15 to -11	0.2698*	0.3892*	0.0002	-0.0003	0.0000	-0.0001	0.0215	0.0494*	0.0173	0.0400*
-10 to -6		0.2640*		0.0011*		0.0007		0.0294		0.0433*
-5 to -1		0.0858		-0.0006		-0.0002		-0.0415*		0.0002
Event Date $t = 0$	0.5709*		-0.0004		-0.0006		0.0907*		0.1128*	
+1 to +5		0.1122		-0.0010*		0.0004		0.0108		0.0415*
+6 to +10	0.0675	-0.0125	-0.0003	0.0004	-0.0003	-0.0005	0.0055	-0.0342	-0.0126	-0.0180
+11 to +15		0.1203		-0.0006		-0.0005		0.0421		-0.0257
+16 to +20		0.0503		-0.0002		-0.0006*		0.0031		-0.0483
Occurrence Date $t = -1$	-0.0090		-0.0005		-0.0005		0.0304		-0.0417	

Note: * = significance at the 90% confidence level.

Investors' Opinions about the Coups

The abnormal returns on the event dates are not significant in 2006 or 2014. One explanation is that coups are Thailand's way of life; they are a part of Thai-style democracy, and investors are used to them (Maisirikrod, 2007; Nazir et al., 2014). Nevertheless, this explanation cannot be correct. For the 2006 (2014) coup, the abnormal return on the event date and the average abnormal return in the [+1,+5] subpart of the postevent window is positive (negative). The average is significant at the 90% confidence level. Therefore, the return impacts are significant, positive and negative for the 2006 and 2014 coups, respectively. The investors responded to the coups and revealed their opinions in the returns.

The two coups were intended to end the prolonged and violent anti-government protests and to seize power from the allegedly corrupt governments. In the 2006 coup, the military junta promised to restore the country to democracy as soon as possible. However, in the 2014 coup, it was clear from the junta that the election would come after political reform. It would not have been difficult for the market to conjecture that during the reform the government would be led by inexperienced, military-connected cabinet members, and therefore the market return reacted negatively (Duggan, 2004).

Political Instability induced by the Coups

The abnormal volatility declined after the two coups. While coups raise political risk in general, the 2006 and 2014 coups ended prolonged anti-government protests. Considering the falling volatility with the rising market volume, I interpret this result as a net reduction of political instability and risk (Duggan, 2004).

Foreign Investors' Portfolio Rebalance

Foreign investors are sensitive to political risks (Ahmed, 2017b; Civilize et al. 2015). When risk levels change, they necessarily rebalance their portfolio. This behavior is implied by the significant and positive abnormal gross foreign volume on the 2006 and 2014 event dates. The patterns of the abnormal market volume and gross foreign volume in the pre- and postevent windows and their subparts are similar.

Possible Leakage of Information about the Coups

It is interesting to observe that the abnormal net foreign buying volume is positive and significant in the pre-event subparts and on the event dates in 2006 and 2014. Although coups are top-secret, information leakage is possible. Dube, Kaplan, and Nadidu (2011) reported that the information about the classified U. S. authorization of coups in Iran, Guatemala, Congo, Cuba, and Chile leaked slowly into asset prices. Chang Noi (2006) and Campbell (2018) reported that Generals Sonthi Boonyaratglin and Prayut Chanocha,

the juntas' leaders, spent more than 6 months planning for the 2006 and 2014 coups. The rising cumulative abnormal returns in the pre-event windows and significant positive average abnormal returns and volumes in some of their subparts support the information-leakage hypothesis.

The information-leakage hypothesis may explain the significant net foreign buying in the pre-event windows and on the event dates. The coups brought back political stability after prolonged anti-government protests. In Figure 1 and Table 2, the volatility decreased. If the information had leaked, political-risk sensitive foreign investors would have expected political stability, reacted positively, and bought the bonds.

In addition to information leakage, it is also possible that other reasons, e.g. media speculations from domestic and abroad about the coups, help to explain abnormal behaviors of the variables. From Figure 1, reversals are observed for some of the abnormal cumulative variables such as returns, volatility, and net foreign volume in 2014. If it were pure information leakage, no reversals should have been observed.

Result Comparison for the Bond Market with the Stock and FX Markets

Lumjiak et al. (2014) and Lumjiak et al. (2018) studied the impacts of the 2006 and the 2006 and 2014 coups on the stock and FX markets. The researchers chose the occurrence dates for the event dates. The pre- and postevent windows were 60 days, while the estimation windows were 60 days preceding the pre-event windows.

The Stock Market

The researchers' results for the abnormal stock return and volatility are similar to those in this study. The abnormal bond and stock returns for the pre-event window are lower (higher) than their levels for the postevent window for the 2006 (2014) coup; volatility fell in the two coups.

The rising volume for bond and stock markets matches for the 2004 coups. For the 2006 coup, the volume fell in the stock market while it rose in the bond market. A reason for the difference could be that the 2006 coup is the first of Thai-style democracy (Maisrikrod, 2007), and the compositions of investor groups in the two markets were different. Individual investors are the majority of the stock market (Khanthavit & Chowalerd, 2016), and institutional investors are the majority of the bond market (Khanthavit, 2015). Because the 2006 coup was unprecedented, the individual investors might have delayed their trading decisions for fears of later regrets (Fogel & Berry, 2006).

The FX Market

The FX and bond market results for the abnormal volatility are consistent. The levels fall with the 2006 and 2014 coups. The results for the abnormal returns show opposite

behaviors. In 2006 (2014), the baht depreciated (appreciated), while the bond prices rose (fell). In Table 2, net buying by foreign investors was insignificant, positive and negative in the 2006 and 2014 post-event windows, respectively.

I further estimate the abnormal net foreign buying for the stock market and find that the results are the same as those of the bond market. The stock market results are available upon request. The net foreign buying is consistent with the price changes. As a part of foreign capital flows, however, it cannot explain the FX behavior.

The FX behavior might be dominated by the seasonality of the country's net exports rather than the coup events. When I regress the demeaned monthly net export from January 1995 to November 2018 with a time trend and month-of-the-year dummy variables, I find that the coefficients for June and October are + 699.68 and -2,969.57 million baht. Although the statistics are not significant, the signs and sizes are consistent with the appreciating and depreciating baht in the 2014 and 2006 post-event windows.

Occurrence Dates vs. Event Dates

The 2006 and 2014 coups were announced after the market's trading hours. The investors did not have the opportunity to react to the announcement. While previous studies (e.g., Lumjiak et al., 2018), chose the occurrence date for the event date, I follow Ahmed (2017a) in identifying the event date by the trading day following the occurrence date. Identification of the event date is important. In the last rows of panels 2.1 and 2.2 in Table 2, I report the abnormal variables for day $t = -1$, the occurrence date. The signs, levels, and significance on that day are very different to those on day $t = 0$, the event date. The results are sensitive to correct identification of the event date.

Conclusion

I examine the bond market's behavior around Thailand's 2006 and 2014 military coups using the market volume, bond return, volatility and gross, and net foreign investors' trading volume. The event dates and the lengths of estimation windows are determined carefully. The abnormal, cumulative abnormal, and average abnormal variables suggest that the coups had significant impacts on the market. Most variables react positively to the two coups.

The coups benefited the market by ending the prolonged violent anti-government protests. While volatility fell in the time around the two coups, the abnormal return reacted positively for the 2006 coup but negatively for the 2014 coup. Despite falling volatility and lower political risk, the 2014 negative return reaction was probably due to the market's conjecture of inexperienced military-connected cabinet members during the planned political reform.

There is evidence to suggest that information about the planned coups leaked to the market. The abnormal volume and returns showed positive trends, and foreign investors were net buyers even before the coup occurrence dates.

The CUSUM test for choosing appropriate lengths of the estimation window is a contribution of this study. For the same variables, the lengths can be different for the two coups. Combined tests for the 2006 and 2014 by the bootstrap method are not possible. I leave the development of combined tests to future research.

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