REACTIONS OF THAILAND'S STOCK MARKET TO THE 2020 U.S. PRESIDENTIAL ELECTION

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Abstract

The U.S. presidential election is one of the most important events in the world, to which the stock markets of other countries react. The 2020 U.S. presidential election was unique due to delayed vote counts, the incumbent president's false election-fraud claims, and the violent riots at the U.S. Capitol Building. In this study, the reactions of Thailand's stock market are examined using the event-conditioning method for event-study analyses. The sample period ranges from August 6, 2019, to January 28, 2021. The period overlaps the period of the COVID-19 pandemic and Thailand's youth protest, thus constituting parameter-instability and confounding-event problems. This study relies on the international capital asset pricing model to mitigate the parameter-instability problem, as it constructs event-dummy control variables to resolve the confounding-event problem. The data comprises daily log returns of Morgan Stanley Global Investable Market Indices portfolios for Thailand and the world, in excess of the 1-month U.S. treasury bill rate. The reactions are found to be significant for the election, the final election results, and the presidential inauguration; they are non-significant for the Capitol riots and the incumbent president's false claims. For the same events, there is dissimilarity between the reactions of the Thai and U.S. markets.

Keywords: abnormal return; event-study analyses; political uncertainty

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1. INTRODUCTION

General elections influence stock market returns and risk. Investors closely follow elections. They revise expectations with respect to new information regarding political policies and decisions that may potentially affect the economy. Stock returns fluctuate to reflect revised expectations (Pantzalis, Stangeland, & Turtle, 2000). In addition to elections in their own country, investors are interested in those in foreign countries (Cunha & Kern, 2018). The U.S. presidential election is the most interesting, and is extensively covered by the media worldwide (Boomgaarden, Vliegenthart, & de Vreese, 2012). The United States is one of the most influential countries, whose military, foreign, trade, and financial policies have significant effects on other countries' political stability, economic performance, corporate profits, and stock-market returns and volatility (Aizenman, Chinn, & Ito, 2016). Previous studies have found significant effects of the U.S. presidential elections on stock markets in Canada and Mexico (Nippani & Arize, 2005), Indonesia (Evelyn & Basana, 2018), Taiwan (Hung, 2013), and Russia (Nandy & Sussan, 2019). However, Hoe, and Nippani (2017), did not find any significant effect of the U.S. presidential election on the Chinese market.

This study investigates the reactions of Thailand's stock market to the 2020 U.S. presidential election. The election was unique and interesting for three reasons. First, due to the coronavirus 2019 (COVID-19), postal voting was an option in 33 states and the District of Columbia. Therefore, vote counts were delayed. Rather than announcing the outcome by the end of the election day– November 3, 2020, or the following day, the outcome was finalized on December 9, 2020, when West Virginia certified its election results (Stark & Cohen, 2020). Second, the incumbent President Donald J. Trump claimed the prevalence of election fraud and filed lawsuits in key battleground states on November 4, 2020, to overturn vote counts (Shubber, 2020). Trump also pressured Mike Pence, who would preside over a joint session of Congress to formally tally the Electoral College results, to eliminate the electoral votes (Schmidt, 2021). Finally, Trump allegedly incited the riots at the U.S. Capitol building on January 6, 2021, to disrupt the confirmation of Joseph R. Biden, Jr. as the next president (Macias & Mangan, 2021). This incident is considered an attack on the U.S. democratic process (Rempfer, 2021). The delay of vote counts and the attempt to overturn the election results raised uncertainty regarding the election outcome (Nippani & Medlin, 2002). The Capitol riots, as an attack on the democratic process, triggered concerns among local and international investors (Morales & Andreosso-O'Callaghan, 2019). For these reasons, it is likely that stock markets reacted differently during the

2020 election compared to the periods during previous elections (Niederhoffer, Gibbs, & Bullock, 1970; Nippani & Medlin, 2002; Oehler, Walker, & Wendt, 2013; Pham, Ramiah, Moosa, Huynh, & Pham, 2018).

Table 1 summarizes the events focused on by this study, along with their occurrence and event dates. The event dates for the Thai market recognize the 12-hour time difference between the U.S. Eastern Standard Time (EST) and Bangkok time. Moreover, certain events ended after the market's trading hours. Hence, the event dates correspond to the Thai market's trading dates on or following the days on which the events ended. For the U.S. market, if the events ended during the U.S. market's trading hours, the event dates are the occurrence dates. Otherwise, they are the following trading days.

The election day has been considered because the study focuses on the reactions of the Thai stock market to the U.S. presidential election. The vote-count completion day is important because uncertainty as to which candidate had won the election was resolved on this day (Nippani & Medlin, 2002). The Capitol-riots day has also been included. Morales and Andreosso-O'Callaghan (2019) argued that the riots raised concerns among local and international investors regarding stock markets. Finally, even after the election results were finalized, new information such as the President's new policies, detailed policy implementation, and names of cabinet members, would arrive (Chandra, 2015; Khanthavit, 2020a). Stock returns on the days surrounding the inauguration day should capture this information.

The study does not consider December 14, 2020, on which members of the Electoral College met and formally recognized Biden as the next president. The meeting was only a formality; the result was readily acknowledged on December 9, 2020, when West Virginia issued its certification. For the same reason, January 6, 2021, is interpreted as being the Capitol-riots day.

Because of the time zone difference, the event dates on which West Virginia certified the presidential election results are 6 days apart for the United States and Thailand. December 9, 2020 for the United States was December 10, 2020 for Thailand. Moreover, December 10, 2020 was Thailand's Constitution Day—a national holiday; the following trading day was December 14, 2020.

The Thai market was chosen as the sample market for this study. Thailand is one of the world's leading emerging markets. In November 2020, the market capitalization of the Stock Exchange of Thailand (SET) was USD 519.62 billion. According to the World Federation of Exchanges (2021), the SET ranked 10th among markets in the Asia-Pacific region and was the 23rd largest market in the world. Thailand is a key U.S. ally in Asia, with strong relationships on economic, military, law and governance, politics, and healthcare

Table 1 Description of Events

Occurrence Date	Event Date		Description
	U.S. Date	Thai Date	
11/03/20	11/04/20	11/04/20	U.S. presidential election day. The last poll was closed at 1.00 a.m. (EST) on 11/04/2020 for Alaska.
12/09/20	12/09/20	12/14/20	West Virginia was the last state to certify the presidential election results. The certification was issued at 3.00 p.m. (EST).
01/06/21	01/06-07/21	01/07/21	At 1.00 p.m. (EST), the Congress started the session to count the electoral votes. At 2.20 p.m. (EST), the Congress adjourned and started to evacuate as rioters attacked the Capitol Building. The riots ended at 17.39 p.m. (EST). At 8.16 p.m (EST), the Congress reconvened.
01/07/21	01/07/21	01/07/21	At 3.32 a.m. (EST), Vice President Mike Pence declared Joseph R. Biden, Jr. the winner of the presidential election.
01/20/21	01/20/21	01/21/21	Inauguration day. At 12.00 p.m. (EST), Biden (Kamala D. Harris) took the oath of office as President (Vice President).

fronts (U.S. Department of State, 2021). In 2020, the United States was Thailand's largest importer and third largest exporter, with aggregate trading values of 35.53 and 15.54 billion dollars, respectively. Fund flows to and from the United States are significant. In the past four quarters—from the fourth quarter of 2019 to the third quarter of 2020, the net flows of portfolio investment were -1.10, -0.73, 0.20, and 0.16 billion dollars, respectively, whereas the net flows of direct investment were 0.26, -0.20, 0.15, and -0.18 billion dollars, respectively. Despite the strong relationship between Thailand and the United States, few studies have examined the effects of the U.S. presidential election on the Thai stock market. In an international study, Cunha and Kern (2018) reported that the 2016 U.S. presidential election negatively affected Thai stock returns.

The effects were significant. This study adds to the literature in this area for the Thai stock market.

The 2020 U.S. presidentialelection is not a single event, but a series of events (Khanthavit, 2020a). In the study's long estimation and event periods (362 trading days from August 6, 2019, to January 28, 2021), Thailand experienced two major incidents: the COVID-19 pandemic and the youth protest. The pandemic was first known to the world on November 17, 2019. It spread to Thailand and caused the first infection and death on January 13, 2020, and March 1, 2020, respectively (Khanthavit, 2020b). Khanthavit (2021) reported that COVID-19 led to low expected stock returns and high volatility. COVID-19 spread in the country beyond the last day of the sample period (January 28, 2021).

Thailand's youth protest started on November 11, 2019, when the constitutional court disqualified an opposition leader—Thanathorn Juangroongruangkit, as a member of parliament for violating the electoral law. The movement, joined mostly by university and school students, comprised a series of protests (Tanakasempipat & Thepgumpanat, 2020). The last protest was held on January 16, 2021. The protesters declared that their movement would continue (Duangdee, 2021). The protests concerned local and foreign investors, thus affecting stock market returns (Morales & Andreosso-O'Callaghan, 2019).

The study makes three contributions to the literature on reactions of stock markets to the U.S. election. Firstly, the delayed vote counts, Trump's attempt to overturn the election results, and the Capitol-Hill riots are unique to the 2020 election. This study reveals how the Thai market reacted to this election of unique characteristics and adds to the literature of U.S. presidential elections. Secondly, the sample period overlaps the period of the COVID-19 pandemic and youth protests in Thailand. The events linked to the COVID-19 pandemic and youth protests were considered exogenous events. The market's reactions to these events are interesting. The study incorporates these events into the model; the findings help to understand how and how important these events are to the market. Finally, the COVID-19 pandemic and youth protest cause parameter-instability and confounding-effect problems in the estimation for the event-study analyses, which is a methodological challenge. This study proposes a statistical model to mitigate the problems and ensure that the results are unbiased and reflect the pure effects of the events being focused on.

The study has limitations. It uses abnormal returns to measure the market's reactions. The abnormal returns are computed from the international capital asset pricing model (international CAPM). Therefore, the results are usable under the assumptions that the Thai market is integrated with the world market

and the international CAPM is the correct model for stock returns.

2. THE MODEL

2.1 Event-Conditioning Regression for Event-Study Analyses

2.1.1 Key Events

The study measures the reactions of the Thai market to the events mentioned using the event-study method of De Jong, Kemna, and Kloek (1992), Malatesta (1986), and Thompson (1985). This method involves regression that conditions the stock return on its normal expected value and event variables, as shown in Equation (1).

$$\tilde{r}_t = \sum_{k=1}^{K}\{\sum_{a=-A_{Pre}}^{-1} \delta_a^k D_{a,t}^k + \delta_0^k D_{0,t}^k + \sum_{b=+1}^{+B_{Post}} \delta_b^k D_{b,t}^k\} + \mu_t + +\tilde{e}_t, \quad (1)$$

where $\tilde{r}_t$ is the stock return and μ_t is the normal expected value. Subscript $t = -A_{Pre}, \dots, -1, 0, +1, \dots, +B_{Post}$ indicates event day $t = 0$ and its surrounding days, whereas superscript k labels the event $k = 1, 2, \dots, K$ of interest. In this study, $K = 4$ events– (i) the election day, (ii) West Virginia's vote-count completion day, (iii) the Capitol-riots day, and (iv) the inauguration day. With respect to Fama, Fisher, Jensen, and Roll (1969), the period from $t = -N$ to $t = -A_{Pre} - 1$ of event k =1 is the estimation window. The dummy variable $D_{(\tau=a,0,b),t}^{k=1,2,\dots,K}$ is 1.00 if day t of event k is τ. Otherwise, it is 0.00. The regression coefficient δ_τ^k measures the abnormal return on day τ of event k. If the market reacts to event k, δ_τ^k is significantly different from zero.

2.1.2 The Period of Uncertainty

In their study of the 2000 U.S. presidential election, Nippani and Medlin (2002) were aware of the uncertainty period from November 8, 2000, to December 13, 2000, during which Albert A. Gore, Jr., and George W. Bush–the presidential candidates, appealed and counter-appealed to various courts regarding vote counting in Florida. The uncertainty was put to an end by a U.S. Supreme Court ruling on December 13, 2000. The uncertainty resulted in a falling market.

The 2020 election was similar. Trump filed lawsuits on November 4, 2020, to overturn the election results in key battleground states and pressured Pence to reject the Electoral College results. The uncertainty ended on January 7, 2021, when Pence declared Biden as the next president of the United States.

Following Nippani and Medlin (2002), this study examines whether the uncertainty during the 2020 election resulted in a negative stock return. Equation (1) is adjusted by the uncertainty-period dummy variable, as shown in Equation (2).

$$\tilde{r}_t = \sum_{k=1}^{K=4}\{\sum_{a=-A_{Pre}}^{-1} \delta_a^k D_{a,t}^k + \delta_0^k D_{0,t}^k + \sum_{b=+1}^{+B_{Post}} \delta_b^k D_{b,t}^k\} + \delta_U D_t^U + \mu_t + \tilde{e}_t, \quad (2)$$

where D_t^U is 1.00 if day t is from November 5, 2020, to January 7, 2021. Otherwise, the variable is 0.00. If the uncertainty leads to a negative stock return, as suggested by Nippani and Medlin (2002), the coefficient δ_U is negative and significant.

2.2 Pre-Event, Post-Event, and Estimation Periods

In this study, the full event window covers four interesting events. Each event is assigned a window of its own. The individual windows cannot be very long, otherwise the windows overlap, and it is not clear as to which event contributes to the abnormal returns. This study follows researchers such as Khanthavit (2020a) to set the pre- and post-event windows to five days (A_{Pre}=$B_{Post} = 5$), constituting an 11-day window for the events.

For accuracy of the estimates, Salinger (1992) recommends long estimation windows. Typical lengths of the estimation window range from 100 to 300 days (Peterson, 1989). This study chose 300 days, following Khanthavit (2020a, 2020b).

2.3 The Normal Expected Return

In event-study analyses, an average return generally serves as the normal expected return of the national stock market return (Khanthavit, 2020b). It is important to note that the full period begins on August 6, 2019, and ends on January 28, 2021. This period overlaps the COVID-19 pandemic period, which began on November 17, 2019. Khanthavit (2021) reported that COVID-19 caused a structural change in Thai stocks. The event study suffers from a parameter-instability problem. The average is biased and cannot be used.

This study recognizes that the COVID-19 pandemic is a global event. Its risk is systematic with respect to the world market portfolio. For this reason, the study chooses the normal expected return, which is prescribed by the international CAPM (Adler & Dumas, 1983; Solnik, 1974). The CAPM and average returns serve well in the analyses (Brown & Warner, 1985).

Under the international CAPM, the expected return μ_t is described by Equation (3).

$$\mu_t = r_{F,t} + \beta E\{\tilde{r}_{W,t} - r_{F,t}\}. \quad (3)$$

Variables $r_{F,t}$ and $\tilde{r}_{W,t}$ are the risk-free return and the return on the world market portfolio, respectively. Parameter β is a measure of systematic risk, whereas $E\{\tilde{x}_t\}$ is the expectation operator of the variable $\tilde{x}_t$ in curly brackets.

As the expectation is unobserved, the study must work with the observed returns $\tilde{r}_{W,t}$ and $r_{F,t}$ with respect to the relationship in Equation (4).

$$\tilde{r}_{W,t} - r_{F,t} = E\{\tilde{r}_{W,t} - r_{F,t}\} + \tilde{v}_t, \quad (4)$$

where $\tilde{v}_t$ is the expectation error.

Combining Equations (2), (3), and (4) and rearranging terms provides the event-conditioning

regression model in Equation (5) for the event-study analyses.

$$\widetilde{R}_t = \sum_{k=1}^{K=4}\{\sum_{a=-A_{Pre}}^{-1} \delta_a^k D_{a,t}^k + \delta_0^k D_{0,t}^k + \sum_{b=+1}^{+B_{Post}} \delta_b^k D_{b,t}^k\} + \delta_U D_t^U + \beta\widetilde{R}_{W,t} + \tilde{\varepsilon}_t. \quad (5)$$

Variables $\widetilde{R}_t$ and $\widetilde{R}_{W,t}$ denote $\tilde{r}_t - r_{F,t}$ and $\tilde{r}_{W,t} - r_{F,t}$, respectively. The sum, $\tilde{e}_t + \beta\tilde{v}_t$, becomes $\tilde{\varepsilon}_t$.

The international CAPM relies on an integrated-market assumption. If the assumption is violated, the model is not usable. For Thailand, early studies (Bruner, Li, Kritzman, Myrgren, & Page, 2008; Khanthavit & Sungkaew, 1993) rejected the integrated-market assumption. Recent studies such as Frijns, Tourani-Rad, and Indriawan (2012) and Nujmudin, Syarif, Wahyudi, and Muharam (2017) suggest that the degree of Thailand's market integration has been increasing, such that the Thai market is now fully integrated with the world market.

2.4 Control Variables

Although the international CAPM can resolve the parameter-instability problem arising from the COVID-19 systematic risk, it cannot capture the effects on stock returns from measures to control the pandemic specific to Thailand. The Thai government imposed preventive measures to limit COVID-19's first and second waves from March 26, 2020, to June 30, 2020, and from December 25, 2020, to January 31, 2021, respectively. These measures could affect the stock market positively or negatively, as the market translated the preventive measures into different messages (Khanthavit, 2020b). To control the effect of the two preventive measures, a control variable was added to Equation (5) (Acemoglu, Hassan, & Tahoun, 2018). The preventive-measure dummy variable D_t^M is 1.00 if day t falls in the periods from March 26, 2020 to June 30, 2020, and from December 25, 2020 to January 28, 2021 (the last day of the sample period). Otherwise, the variable is 0.00. After the addition, Equation (5) becomes

$$\widetilde{R}_t = \sum_{k=1}^{K=4}\{\sum_{a=-A_{Pre}}^{-1} \delta_a^k D_{a,t}^k + \delta_0^k D_{0,t}^k + \sum_{b=+1}^{+B_{Post}} \delta_b^k D_{b,t}^k\} + \delta_U D_t^U + \delta_M D_t^M + \beta\widetilde{R}_{W,t} + \tilde{\varepsilon}_t, \quad (6)$$

where δ_M is the estimate of return impact from the preventive measures.

The full sample period also overlaps with the period of Thailand's youth protest. The protest began on November 20, 2019. At the time of writing this study, the protest had not ended. If the protests and protest-related events affected the stock return and they occurred during the estimation period, the study will suffer from a parameter-instability problem. If it occurred at a time close to the four event dates, a confounding-event problem will arise. Protests and protest-related events have not been reported; interested readers can obtain data regarding them from the author upon request.

The study experienced both

parameter-instability and confounding-event problems. For the parameter-instability problem for example, the first protest-related event (the disqualification of Juangroongruangkit as a member of parliament for violating the electoral law) was on November 20, 2020. This date is within the estimation period. For the confounding-event problem, the last protest for 2020 was held on December 10, 2020, while West Virginia's formal results were released on December 9, 2020.

The international CAPM cannot correct the effects of the youth protest. The protest does not constitute a systematic risk vis-à-vis the world market portfolio. Therefore, this study uses the control-variable approach to mitigate the parameter-instability and confounding-event problems (Acemoglu et al., 2018).

There are five protest-related events, including (i) the disqualification of Juangroongruangkit (November 20, 2019), (ii) the dissolution of the opposition Future Forward Party (February 21, 2020), (iii) the Thai parliament's vote to delay the constitutional amendment (September 24, 2020), (iv) the Thai parliament's vote on alternative proposals for the constitutional amendment (November 18, 2020), and (v) the constitutional court's ruling in favor of General Prayuth Chan-o-cha on residing in army housing (December 2, 2020). This study considers the five protest-related events covering a period of 11 days—five days before and after the event day, and one day being the event day. The dummy variables for the events are 1.00, if day t is within the eleven-day period. Otherwise, the variables are 0.00.

The youth protest is a series of events. These events are clustered heavily between August 2020 and November 2020. Due to the event clustering, a protest dummy variable D_t^P was constructed for the purpose of the study, where D_t^P is 1.00 if day t is a protest day. It is 0.00, otherwise. The approach follows that of Acemoglu et al. (2018) and Chan and Wei (1996). These researchers experienced similar event-clustering problems.

On October 15, 2020, Prime Minister Chan-o-cha declared a state of emergency for the Bangkok area to limit escalation of the protest; he later lifted the emergency decree on October 21, 2020. The period from October 15, 2020, to October 21, 2020 is within the estimation period. If the protest affected the market (Morales & Andreosso-O'Callaghan, 2019) and the emergency decree was effective, the decree would cause parameter instability in the analyses. An emergency-decree dummy variable D_t^E was added in to this study to correct this possible problem. The dummy, D_t^E, is 1.00 if day t lies between October 15, 2020, and October 21, 2020. Otherwise, it is 0.00.

Adding the dummy variables to control the effects of the protests, protest-related events, and emergency decree to Equation (6) results in the regression model shown in Equation (7).

$$\widetilde{R}_t = \sum_{k=1}^{K=4}\{\sum_{a=-A_{Pre}}^{-1} \delta_a^k D_{a,t}^k + \delta_0^k D_{0,t}^k + \sum_{b=+1}^{+B_{Post}} \delta_b^k D_{b,t}^k\} + \delta_U D_t^U + \delta_M D_t^M + \sum_{j=1}^{J=5} \delta_j D_t^j + \delta_P D_t^P + \delta_E D_t^E + \beta \widetilde{R}_{W,t} + \tilde{\varepsilon}_t. \quad (7)$$

In Equation (7), coefficient δ_j reflects the effects of protest-related event j, averaged over the eleven-day period surrounding the event. Coefficients δ_P and δ_E estimate the effects of the protest and the emergency decree.

2.5 Model Estimation and Hypothesis Tests

The model in Equation (7) was estimated using linear ordinary-least-squares (OLS) regression. If the Thai stock market reacts to event k, at least one of the coefficients δ_a^k, δ_0^k, and δ_b^k must be different from zero. Khanthavit (2021) reported that Thai stock returns and volatility went through structural changes due to COVID-19. Hence, the hypothesis test would be conducted from Newey and West's (1994) heteroscedasticity and autocorrelation consistent (HAC) covariance matrix.

3. THE DATA

This study examines the stock returns on days surrounding the four events related to the 2020 U.S. presidential elections. The full sample consists of 362 days, while the event window is 62 days. The 300-day estimation window covers the days from August 6, 2019, to October 27, 2020. The first day of the event window is October 28, 2020, and the last day is January 28, 2021.

The returns in regression equation (7) are the daily returns in excess of the risk-free return. The Thai and world-market returns are log returns derived from the closing Morgan Stanley Global Investable Market Indexes for Thailand and the world, respectively. The indexes are in U.S. dollars. The risk-free return is computed from the 1-month U.S. treasury bill rate, divided by 365 (Roberd, Runkle, & Whiteman, 1996). The choice of the 1-month treasury bill rate follows that of Fama and French (2006). The study retrieved the Morgan Stanley Global Investable Market Indexes from the Morgan Stanley database, while the 1-month U.S. treasury bill rate was retrieved from the U.S. Department of the Treasury database.

It is important to note that there is a 12-hour time difference between EST and Bangkok time. The New York Stock Exchange and Toronto Stock Exchange contribute significantly to the Morgan Stanley world-market index. The two markets close for the day at 4.00 p.m. (EST) (WorldTimeZone, 2021). To compute the excess returns for day t, the study uses the Thai return on day t and the world and risk-free returns on day $t-1$ (Engle, Ito, & Lin, 1990).

Table 2 reports the descriptive statistics for the excess returns on the Thai and world stock market portfolios. The Thai-market excess return is negative during the full and

during the event period. The world-market excess return is positive during all three periods. The standard deviations of the Thai returns are not very different for the full, estimation, and event periods; the standard deviations for the world-market returns are much higher for the full and estimation periods than for the event period. These statistics are different from the ones reported earlier by Khanthavit (2021) for the two markets. In this study, the estimation period comprises more volatile and poorer performing markets because the estimation period covers the period when COVID-19 was discovered and began spreading worldwide. The world was unsure as to how to manage the situation, hence, the markets responded dramatically.

The returns are negatively skewed and fat-tailed. The Jarque-Bera statistics reject the normality hypothesis of the returns in all three periods. The first-order autocorrelation (AR1) coefficients are negative and significant for the full and estimation samples. The ones in the event period are positive, but non-significant.

Although the returns are not distributed normally, OLS regression can be used. As the events are exogenous, the OLS estimator is consistent and unbiased (Greene, 2018). Changing volatility and significant autocorrelation of the returns support the choice of Newey and West's (1994) HAC for hypothesis testing. HAC works in cases where return autocorrelation and heteroscedasticity are present and absent.

Table 2 Descriptive Statistics

Statistic	Full Period (08/06/19–01/28/21)		Estimation Period (08/06/19–10/27/20)		Event Period (10/28/20–01/28/21)	
	Thai	World	Thai	World	Thai	World
Average	-0.0444	0.0614	-0.1317	0.0308	0.3781	0.2099
Standard Deviation	1.8770	1.6050	1.8871	1.7156	1.7822	0.8900
Skewness	-1.6070	-1.4117	-1.8691	-1.3364	-0.1671	-0.7712
Excess Kurtosis	12.7407	13.5851	14.0993	12.2108	4.6557	2.8586
AR(1) Coefficient	-0.1003**	-0.1440***	-0.1335**	-0.1642***	0.0016	0.1795
Jarque-Bera Statistic	2.60E+03***	2.90E+03***	2.66E+03***	1.95E+03***	56.2846***	27.2552***
Observations	362	362	300	300	62	62

Note: ** and *** indicate significance at the 95% and 99% confidence levels, respectively.

4. EMPIRICAL RESULTS

The results for the event-conditioning regression in Equation (7) are reported in the Column "Thai Market Return" in Table 3. The Thai market reacted significantly to the events of the presidential election, West Virginia's certification of election results, and the presidential inauguration. The market did not react to the Capitol riots. Furthermore, the uncertainty from Trump's attempt to overturn the election results was not valued by the Thai market.

The significant and positive reactions before and after the election day are consistent with the uncertain information hypothesis (UIH) (Brown, Harlow, & Tinic, 1988). As the election date came closer, the uncertainty regarding the election result decreased. After the election, on November 7, 2020, based on close monitoring of vote counts, major news agencies such as *USA Today* believed Biden had won the election and he accepted the title of president-elect (Santucci & King, 2020). The significant, negative reaction on the election day probably reflected the rising uncertainty when vote counting started and the results were seen to be very close (McCarthy & Greve, 2020).

The significant positive reaction to West Virginia's certification of the results is consistent with the UIH. The market followed the vote count closely, and therefore, was able to estimate the final results. The non-significant uncertainty from Trump's attempt to overturn the election results could be attributed to Trump being unable to provide evidence to show election fraud (Shubber, 2020). Moreover, the pressure on Pence was unconvincing. Pence did not have the authority to overturn electoral votes (Sheth, 2021).

The market reaction surrounding the inauguration days was significant and negative. There were concerns about the negative effects of Biden's upcoming policies on trade, human rights, democracy promotion, and environmental issues (Raksaseri & Mala, 2021).

Table 3 Results for the Event-Study Analyses using Event-Conditioning Regression

Event and Control Variables		Thai Market		U.S. Market Return
		Return	Volatility	
U.S. Presidential Election	Days -5 to -1 $(\delta_a^{k=1})$	0.5967*	-0.3488	-0.0157
	Day 0 $(\delta_0^{k=1})$	-1.0372***	-0.8312***	-0.0327
	Days +1 to +5 $(\delta_b^{k=1})$	2.7657***	1.0810**	-0.3333***
West Virginia's Certification	Days -5 to -1 $(\delta_a^{k=2})$	0.8128**	-0.1733	0.0137
	Day 0 $(\delta_0^{k=2})$	-0.2682	-0.7064***	-0.3424***
	Days +1 to +5 $(\delta_b^{k=2})$	-1.2619	-0.1372	-0.0049

Table 3 Results for the Event-Study Analyses using Event-Conditioning Regression (continued)

Event and Control Variables		Thai Market		U.S. Market
		Return	Volatility	Return
U.S. Capitol Rots	Days -5 to -1 $(\delta_a^{k=3})$	0.3705	-0.4956	-0.1069
	Day 0 $(\delta_0^{k=3})$	0.3686	-1.0639***	0.0382
	Days +1 to +5 $(\delta_b^{k=3})$	0.0068	-0.5359***	-0.0657
U.S. Presidential Inauguration	Days -5 to -1 $(\delta_a^{k=4})$	-0.5848**	-0.2104	0.0326
	Day 0 $(\delta_0^{k=4})$	-0.0824	-0.8553***	0.1180***
	Days +1 to +5 $(\delta_b^{k=4})$	-0.8995***	-0.0545	-0.0036
Uncertainty from to Trump's Lawsuits and Pressure on Pence		0.0862	0.7715***	-0.0258
Thailand's Preventive Measures for COVID-19		0.3085	0.2248	N.A.
Thailand's Disqualification of Opposition Leader Juangroongruangkit $(\delta_{j=1})$		-0.1337	-0.4408***	N.A.
Thailand's Dissolution of the opposition Future Forward Party $(\delta_{j=2})$		-1.0427***	0.8114	N.A.
Thai Parliament's vote to delay the constitutional amendment $(\delta_{j=3})$		-0.4967***	0.1089	N.A.
Thai parliament's vote on alternative proposals for the constitutional amendment $(\delta_{j=4})$		0.7102	-0.6260	N.A.
Thai constitutional court's ruling in favor of Chan-o-cha $(\delta_{j=5})$		0.2856	-0.3856	N.A.
Thailand's Youth Protest Day (δ_P)		-0.6126**	0.0288	N.A.
Thailand's Emergency Decree to Limit Escalation of Protests (δ_E)		-0.1888	0.0637	N.A.
Excess Return on World Market Portfolio (β)		0.2198**	0.3288***	1.1673***
Intercept (α)		N.A.	0.7464***	N.A.

Note: *, **, and *** indicate significance at the 90%, 95%, and 99% confidence levels, respectively. N.A. = not applicable.

5. DISCUSSION

5.1 Market-Integration Assumption

This study uses the international CAPM to identify the expected returns. The model relies principally on the integration assumption. To ensure that the assumption is not violated, the study ran three regressions. Two regressions were based on the equation, $\widetilde{R}_t = \gamma + \beta\widetilde{R}_{W,t} + \tilde{\varepsilon}_t$, using the full sample and the sample before the discovery of COVID-19, from August 6, 2019, to November 15, 2019. Another regression was based on Equation (7) with an intercept γ, using the full sample. These regressions follow Khanthavit and Sungkaew (1993). If the assumption is correct, intercept γ must be zero. The γ-intercepts for the three regressions are non-significant, at -0.0605, -0.0617, and -0.1697, respectively. The study, thus, concludes that the international CAPM is usable to fix the expected return for the analyses.

5.2 Changing World-Market Beta

The full sample overlaps the COVID-19 period. The COVID-19 pandemic induced structural changes in market returns worldwide (Khanthavit, 2021); there is evidence to suggest beta changes due to global crises (Liow & Ye, 2017). It is possible that COVID-19 altered the relationship between the Thai and world market returns, leading to a parameter-instability problem. The study checked whether the analysis was affected by this problem. The term $\beta^C D_t^C \widetilde{R}_{W,t}$ was thus added to Equation (7) to re-estimate the equation. The dummy variable D_t^C identifies the COVID-19 period. The dummy variable is 1.00, if day t is within the period from November 17, 2019, to January 28, 2021. Otherwise, the variable is zero. If COVID-19 changed the relationship of the Thai return with the world return, the coefficient β^C must be different from zero. The regression shows that β^C is 0.0409 and is non-significant. Thus, COVID-19 did not alter the relationship of the Thai-market return with the world-market return. The potential parameter-instability problem did not exist.

5.3 Comparison with Reactions of the U.S. Markets

Nippani and Arize (2005) compared the reactions of the Canadian and Mexican markets to the 2000 U.S. presidential election with those for the U.S. market (Nippani & Medlin, 2002). The researchers found that the results were similar. This study compares the reaction of the Thai market to the 2020 U.S. presidential election with those of the U.S. market. For comparison, this study estimated the model—$\widetilde{R}_t^{US} = \sum_{k=1}^{K=4}\{\sum_{a=-A_{Pre}}^{-1} \delta_a^k D_{a,t}^k + \delta_0^k D_{0,t}^k + \sum_{b=+1}^{+B_{Post}} \delta_b^k D_{b,t}^k\} + \delta_U D_t^U + \tilde{\varepsilon}_t$, where $\widetilde{R}_t^{US}$ denotes the return on the U.S. market over the 1-month treasury bill rate. The U.S.-market return is

derived from the closing Morgan Stanley Global Investable Market Index for the United States. In the construction of the excess-return series, the U.S. and world market returns are for the same day, t. There was no time-zone difference.

The event variables are the same as those in Equation (7). The control variables for the Thai market are excluded; these variables are irrelevant to the U.S. market. The results are reported in the column "U.S. Market Return" in Table 3. These results are similar with respect to non-significant reactions to the Capitol riots and Trump's attempt to overturn the election results.

There are three major differences. First, the U.S. reactions in the post-election period are negative. This difference may be explained by the different interpretations of vote-counting results by investors in the Thai and U.S. markets (Kandel & Pearson, 1995). An alternative explanation can be the U.S. market's preference for a Republican president over a Democratic president (Niederhoffer et al., 1970; Oehler et al., 2013).

Second, the reactions on the day West Virginia issued the election certificate are negative. For Thai investors, the results were clear and should have been final. However, U.S. investors might have some concerns. West Virginia Governor Jim Justice supported Trump to overturn the election results (Adams, 2020), which may have heightened the uncertainty.

Third, the reactions of the U.S. market on the inauguration day are positive, whereas those of the Thai market surrounding the date are negative. Two explanations are possible: There had been threats of violent protests on the inauguration day (Hansen, 2021a). The event was quiet and calm throughout the country (Hansen, 2021b). Hence, it is good news. Two, Biden's policies are good news for the United States. However, some policies, such as those on U.S. trade deficit, are bad news for Thailand (Raksaseri & Mala, 2021).

5.4 Control Variables

In Equation (7), the control variables denote the excess return on the world-market portfolio and event variables for Thailand's COVID-19 preventive measures and youth protests. As shown in Table 3, the β coefficient is significant at 0.2198, suggesting a positive relationship between the Thai market and the world market. Compared with the United States' β of 1.1673, the level is not very high. One of the reasons for this level is the time-zone difference. If the study chose the same day, t, for the world-market return as in the case of the Thai-market return, the et al., 1990). However, the regression would be incorrect (Engle beta coefficient increases to 0.5740.

Before the second wave of COVID-19 spread in December 2020, Thailand was one of the countries with the best recovery rates from COVID-19 (Khanthavit, 2021). The

country's preventive measures had been successful and were relaxed after infections and deaths fell to zero for a long period of time. However, the measures were reinstated on December 25, 2020. If the market believes in the government's measures, coefficient δ_M for the COVID-19 preventive-measure, variable D_t^M must be positive and significant. In Table 3, δ_M is 0.3085; however, it is non-significant. Thus, the market does not believe that the measures are effective.

Thailand's youth protest is an interesting event for event-study analyses. Protests raise concerns among local and foreign investors, thereby affecting stock market returns (Morales & Andreosso-O'Callaghan, 2019). Thailand's youth protest consists of a series of protests and protest-related events. If the concerns are serious, market reactions must be negative. Data in Table 3 indicates that although the disqualification of Juangroongruangkit was the first event in the series, the market did not respond to it. The average return surrounding the day was -0.1337 and non-significant. Significant reactions were noted for the dissolution of the Opposition Future Forward Party and parliament's vote to delay the constitutional amendment. Their average returns were -1.0427 and -0.4967, respectively. The dissolution led to a large protest joined by many more protesters than the one organized for the Juangroongruangkit's disqualification (Setboonsarng, 2020). The vote to delay the constitutional amendment enraged the protesters; the constitutional amendment was among their most important demands (Harmer, 2020).

5.5 Reactions Measured by Abnormal Volatility

Reactions of a market to events can be measured by abnormal volatility (Khanthavit, 2019). The study estimated the model— $\left|\widetilde{R}_t\right| = \sum_{k=1}^{K=4}\{\sum_{a=-A_{Pre}}^{-1}\delta_a^k D_{a,t}^k + \delta_0^k D_{0,t}^k + \sum_{b=+1}^{+B_{Post}}\delta_b^k D_{b,t}^k\} + \delta_U D_t^U + \delta_M D_t^M + \sum_{j=1}^{J=5}\delta_j D_t^j + \delta_P D_t^P + \delta_E D_t^E + \beta\left|\widetilde{R}_{W,t}\right| + \alpha + \tilde{\varepsilon}_t$, to examine how the volatility of the Thai market changed due to the 2020 U.S. presidential election. The normal volatility is $\beta\left|\widetilde{R}_{W,t}\right| + \alpha$. It is not based on the international CAPM, but a linear projection of $\left|\widetilde{R}_t\right|$ onto $\left|\widetilde{R}_{W,t}\right|$. The coefficients β and α are the slope coefficient and intercept, respectively. Following Khanthavit (2019), the volatility is proxied by the absolute daily return. The results are reported in the column "Thai Market Volatility" in Table 3. The volatility reactions are negative and significant for Day 0 for the presidential election, West Virginia's certification, the U.S. Capitol Riots, and presidential inauguration. For Days $+1$ to $+5$ for the presidential election and U.S. Capitol riots, the volatility reactions are significantly positive and significantly negative, respectively.

The negative abnormal volatility for Day 0 for the presidential election,

West Virginia's certification, and presidential inauguration can be explained by the fact that the uncertainty about events were resolved on the days. The negative abnormal volatility on Day 0 for the U.S. Capitol riots can be explained by the resolution of uncertainty too; it was the same day that Vice President Pence declared Biden the winner of the presidential election. The positive abnormal volatility for Days +1 to +5 for the presidential election could reflect rising uncertainty induced by Trump's lawsuits to overturn the election, whereas the negative abnormal volatility for Days +1 to +5 for the U.S. Capitol riots could result from the fact that the riots did not continue or spread.

6. CONCLUSION

The stock market of one country can be influenced by general elections in foreign countries, especially major countries such as the United States. This study tests the Thai market's reactions to the 2020 U.S. presidential election. The election is unique and interesting in terms of delayed vote counts, Trump's attempt to overturn the election results, and the violent Capitol riots. Using event-study analyses on the sample returns from August 6, 2019, to January 28, 2021, the study finds significant reactions of the Thai market to the presidential election, the final election results, and the presidential inauguration. The market did not respond to the Capitol riots, nor did it respond to Trump's attempt to overturn the election results. For the same events, however, the Thai and U.S. markets' reactions are not similar.

While the effects of political uncertainty in major countries to other countries have been studied extensively, the ones in emerging countries have attracted little interest. Recently, the armed forces in Myanmar committed a coup on February 1, 2021, against the civilian government. Myanmar is Thailand's neighboring country. In Thailand, the importance of Myanmar relates to Thailand's security, trade, and immigration-labor supplies. The coup can serve as a case study for the reactions of a market to political events in an emerging foreign country. This study leaves this issue for future research.

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