

Effects of intra-state political protests on stock returns in emerging market economies
An empirical study of stock markets in Brazil, Thailand, and Turkey

Master Thesis



Stockholm School of Economics

Department of Finance

Spring 2016

Tutor: Michael Halling

Abstract

This empirical study investigates the effects of intra-state protests and political uncertainty on stock returns in Brazil, Thailand, and Turkey by analyzing three large-scale events between 2013 and 2014. Although distinct by nature, the studied events combine common characteristics as they turned from a single catalyst event into mass protests that targeted several aspects of public discontent. We study cumulative abnormal returns (CARs) by separating the events into five distinct event windows, and conduct empirical analyses on both market level and firm level. We find significant negative CARs for Brazil and Turkey, which increase in magnitude as protests become larger and violent, and we also find a significant reversal effect once the protests stop. In Thailand, we find inconclusive results as significant positive CARs occur during the main period of protests. Through OLS regressions on a market level, we identify a link between protest size and abnormal returns only for the Turkish market. On a firm level, we find that ex ante trading volume and volatility have a significant explanatory effect for negative CARs during protest periods, and we also find support for explanatory links between government ownership and negative abnormal returns. Our study contributes to existing literature and broadens the understanding of political protests in emerging markets. Furthermore, the study's findings provide valuable insight for the investment community for future political protests.

Tobias Brickel ♠

Malte Melnyk ♦

16 May 2016

♠ M.Sc. Finance, specialization in Investment Management, 40737@student.hhs.se

♦ M.Sc. Finance, specialization in Corporate Finance, 40770@student.hhs.se

Acknowledgements: We wish to thank our tutor Michael Halling, Associate Professor at the Stockholm School of Economics and Research Fellow at the Swedish House of Finance, for his valuable guidance and constant support. We would also like to thank Song'En Chen for his technical support with the STATA software package used in our regressions.

Table of Contents

<u>1.</u>	<u>Introduction</u>	<u>1</u>
<u>2.</u>	<u>Literature review</u>	<u>3</u>
2.1.	Political uncertainty and its effects on stock markets	3
2.2.	Political uncertainty and its effects on stock markets in emerging markets	5
2.3.	Political protests and their effects on stock markets in emerging markets	6
<u>3.</u>	<u>Country Overview</u>	<u>7</u>
3.1.	Thailand	7
3.1.1.	Politics	7
3.1.2.	Economy	8
3.2.	Brazil	10
3.2.1.	Politics	10
3.2.2.	Economy	11
3.3.	Turkey	13
3.3.1.	Politics	13
3.3.2.	Economy	14
<u>4.</u>	<u>Methodology</u>	<u>16</u>
4.1.	Determining event windows	16
4.2.	Measuring normal returns	18
4.3.	Calculation of abnormal returns	19
4.4.	OLS regressions to identify explanatory variables of ARs on a market level	20
4.5.	OLS regressions to identify explanatory variables of CARs on a firm level	21
4.6.	Statistical significance testing	22
<u>5.</u>	<u>Data</u>	<u>23</u>
5.1.	Selection of Firm Sample and Data Gathering	23
5.2.	Variables for the market level analysis	27
5.3.	Variables for the firm level analysis	27
5.4.	Discussion of Caveats	29
<u>6.</u>	<u>Hypotheses</u>	<u>30</u>
6.1.	Hypotheses pertaining to the market level	30
6.2.	Hypotheses pertaining to the firm level	31
<u>7.</u>	<u>Empirical Work and Results</u>	<u>32</u>
7.1.	Market level analysis	32
7.1.1.	CAR results on a country level	32
7.1.2.	CAR results on a sectorial level	35
7.1.3.	Market level regression	36
7.1.4.	Discussion of market level results	37
7.2.	Firm level analysis	38
7.2.1.	Firm level regression across all three countries	38
7.2.2.	Firm level regression for Thailand sample	40
7.2.3.	Firm level regression for Brazil sample	42
7.2.4.	Firm level regression for Turkey sample	43
7.2.5.	Discussion of firm level results	44
<u>8.</u>	<u>Summary and concluding remarks</u>	<u>46</u>
	<u>References</u>	<u>47</u>
	<u>Appendix</u>	<u>52</u>

List of Figures

Figure 1: Long-term development of the emerging market equity indices.....	1
Figure 2: Overview of firms in our sample.....	26
Figure 3: Event horizons, firm sample returns, and currency returns.....	34

List of Tables

Table 1: Key events during the Thai crisis 2013/2014.....	9
Table 2: Key events during the Brazilian crisis 2013.....	12
Table 3: Key events during the Turkey crisis 2013.....	15
Table 4: Event windows classification.....	17
Table 5: Derivation of the firm sample in Thailand.....	25
Table 6: Derivation of the firm sample in Brazil.....	25
Table 7: Derivation of the firm sample in Turkey.....	26
Table 8: Overview of variables in the market level analysis.....	28
Table 9: Overview of variables in the firm level analysis.....	29
Table 10: Average CARs for the event periods at a country level.....	33
Table 11: CARs for the Thai event periods at a country and sector level.....	35
Table 12: CARs for the Brazilian event periods at a country and sector level.....	35
Table 13: CARs for the Turkey event periods at a country and sector level.....	36
Table 14: Regression results of our market level regression.....	36
Table 15: Regression results across all three countries on a firm level.....	39
Table 16: Regression results for Thailand at a firm level.....	41
Table 17: Regression results for Brazil at a firm level.....	42
Table 18: Regression results for Turkey at a firm level.....	44

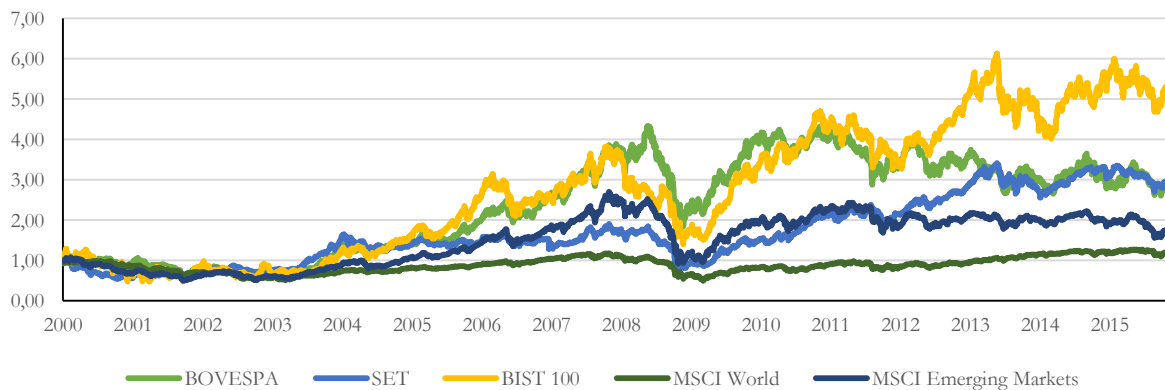
List of Abbreviations

AK	Adalet ve Kalkinma Partisi (Justice and Development Party)
AR	Abnormal Return
BRL	Brazilian Real
CAPM	Capital Asset Pricing Model
CAR	Cumulative Abnormal Returns
EU	European Union
FX	Foreign Exchange
GDP	Gross Domestic Product
GNI	Gross National Income
IFC	International Finance Corporation
ISE	Istanbul Stock Exchange
MENA	Middle East and North Africa
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Squares
PAD	People's Alliance for Democracy
PT	Partido de Trabalhadores (Workers' Party)
REIT	Real Estate Investment Trust
THB	Thai Baht
TRY	Turkish Lira
UK	United Kingdom
US	United States
USD	U.S. Dollar
WCI	World Commodity Index

1. Introduction

Rapid economic growth vastly increased investor interest in emerging markets¹ over the last three decades. During that timeframe, investors in emerging markets were rewarded with relatively higher returns compared to investments in indices of developed markets. In particular, the leading stock market indices of the countries analyzed in this study, Brazil, Thailand, and Turkey, have significantly outperformed the MSCI World Index (cf. Figure 1).

Figure 1: Long-term development of the emerging market equity indices



Description: data is indexed to 1 at January 1, 2000. The chart illustrates the development of the major equity indices of the three countries studied in this report: BOVESPA (Brazil), SET (Thailand), BIST (Turkey).

Despite the strong economic growth, political crises and protests have erupted the political landscape as well as the domestic economy in each of the three countries. Political and economic risks are the main risk factors that emerging market investors cope with (Girard & Kiyamaz, 2009), and historical evidence suggests that both factors are often closely interlinked. Conversations with emerging market equity investors have served as anecdotal evidence to us that stock market effects of political crises are not yet well understood. Hence there is a reason to analyze such relationships in a study focusing on recent events that have heavily impacted major emerging market economies: Brazil in 2013, Thailand in 2013-2014, and Turkey in 2013. We believe that our research question is highly relevant for both practitioners and scholars: *How do political uncertainty and anti-government protests affect stock market returns in emerging markets?* This issue comes along with various additional questions which we strive to address throughout this study:

- How do stock markets react when political protests occur?
- Do investors anticipate the turbulence, i.e. does the market decline prior to the events, at the beginning of small protests, or are the largest effects seen at the peak of the crisis?
- Do investors overreact, i.e. is there a reversal of returns once the crisis is resolved?

¹ A term first mentioned by economists at the International Finance Corporation (IFC) of the World Bank in 1981, Emerging Markets is not universally defined, but widely used to describe fast growing countries that yet have low income per capita.

- Do firms with specific characteristics show larger/smaller reactions to political protests? In particular, do leverage, trading volume, volatility, or government ownership determine abnormal returns?

Not only are these questions of interest to investment professionals, we also find that these issues have been widely left unaddressed in academia, in particular in terms of these very recent events of political protests. Existing research has mainly focused on political risk related to changes in government and related to elections in developed countries as well as terror attacks. Although we appreciate the distinct characteristics and the complexity of all information surrounding our selected events in Brazil, Thailand, and Turkey, we strive to identify patterns within each event and commonalities across the three. Hence, we not only analyze these countries separately, we also provide insights in how protests and the related effects compare across all countries.

We find a clear cadence throughout the events of political protests with significant negative cumulative abnormal returns (CAR) during crises in Brazil and Turkey, which increase as protests become larger and violent. These are followed by a reversal effect once the protests stop. In Thailand, we find inconclusive results as significant negative CARs occur at the start of the protests. These are followed by positive CARs despite continued protests. Through an ordinary least squares (OLS) regression, we also find a significant link between protest size and abnormal returns during the event period in Turkey, whereas we cannot identify such a link for the other two countries.

On a firm level, our OLS regressions reveal a significant link between several variables and abnormal returns. Namely, our results suggest that stocks with higher trading volume and volatility exhibit stronger negative CARs during the main periods of protests, and are then subject to a strong reversal of these effects after protests end. Our results also suggest that government ownership in firms relates to negative returns during protests, emphasizing the important relationship between political protests and effects on companies that have strong ties to the government.

The results of this study contribute to a widely neglected area of research on stock markets. We believe that our results provide insights that improve understanding of political protests and emerging market stock returns. With increasing geopolitical tensions and fears of political crises in various emerging market economies, this topic is gaining both interest and importance.

Our thesis begins with a short introduction to existing literature of the effects of political uncertainty and political protests globally as well as specific studies on emerging markets (2.). We then provide a political and economic overview of the countries studied in this paper (3.) which we accompany with a discussion of the respective crisis events. After discussing the background of the intra-state political protests, we outline our empirical approach of analyzing these events in the methodology section (4.). Subsequently, we provide an overview of the data and variables construction (5.) as well as our hypotheses (6.). This is followed by an overview of our empirical

work and results (7.). Finally, we synthesize our work in a final section with concluding remarks (8.).

2. Literature review

Recent years have seen a large increase in research on political uncertainty and its effects on stock markets. Yet most articles focus on political uncertainty induced by elections and policy-making decisions as well as terrorist attacks. This literature review starts with a broad overview of research conducted in this area on a global level, which is then followed by a review of articles on political uncertainty and its effects on stock markets in emerging markets. While little research has been conducted on the effects of political protests on stock markets, we will review the few existing articles in a final section since these effects are the focus of our thesis.

2.1. Political uncertainty and its effects on stock markets

Political uncertainty in terms of uncertainty about policy choice and elections and their effects on stock markets has been widely researched. Lubos & Veronesi (2013) built a model in which stock prices are affected by economic shocks as well as political shocks. The validity of this model is then empirically verified. They find that uncertainty about government policy choice induces a political risk premium and higher volatility on stock markets, while also increasing correlation among stocks. The magnitude of both risk premia and volatility is found to be higher under high levels of political uncertainty. Lubos & Veronesi (2013) show that this is also true under weak economic conditions as such conditions are assumed to increase the probability of policy changes, which induces political uncertainty. Similar findings were incorporated in another model by Lubos & Veronesi (2012) that predicts the effects of policy changes on stock prices. Stock prices are expected to fall when policy changes are announced, with the magnitude of the decline being larger under higher levels of political uncertainty and under weaker economic conditions.

Bialkowski et al. (2008) looked at political uncertainty as a result of elections. They examined stock market volatility in 27 OECD countries in the weeks surrounding elections. Their results show that elections cause temporary volatility, which is higher when the elections outcome is uncertain, when there is a change in ruling parties, and when there is no clear majority after an election. They also found that the volatility increase is higher in countries with shorter trading histories. Li & Born (2006) made similar findings for the United States (US) during periods of election. Pantzalis et al. (2000) examined how stock markets reacted during election periods in 33 countries between 1974 and 1995. Their findings show abnormal returns in the two weeks prior to an election, which were highest in countries with little political freedom and in countries where the incumbents lost.

Pastor et al. (2015) also found effects of elections and global summits on the equity option market. Their paper indicates that options which expire after political events are priced higher than options which expire earlier. They explain these high prices with the added protection against risks related to these events. Pastor et al. (2015) also find that weak economic conditions and higher levels of political uncertainty result in higher option prices, which is similar to the results by Lubos & Veronesi (2012) for the equity market.

Apart from elections and policy-making decisions, political uncertainty is also caused by other political events. Bittlingmayer (1998) looked at Germany during the period of 1880-1940, during which the country saw World War I, the switch from an empire to the democratic Weimar Republic, and then the switch to the Nazi regime. He finds that stock volatility is lower in years of higher political stability and higher in years of large uncertainty. Voth (2002) made similar findings in his study of increased stock volatility during the Great Depression in 1929. His research shows that political risks, such as fear of social unrest, increased in the period between World War I and 1929, and largely account for the increase in volatility. Zach (2003) also found political events related to the Israeli–Palestinian peace process affecting stock volatility on the Tel Aviv Stock Exchange. Stock volatility was higher on dates following political events related to the peace process. Kim & Mei (1994) and Chan & Wei (1996) looked at the Hong Kong stock market during the transition period from a British colony to the handover to China in 1997, which came with a high degree of political uncertainty due to the different economic and political systems of China and the United Kingdom (UK). They argue that political news about the handover process affected stock volatility and stock returns, with unfavorable news leading to a greater increase in volatility. The effects of political uncertainty as a result of terrorist effects were studied by Karolyi and Martell (2006). In their study, they analyzed the effects of 75 terrorist attacks between 1995 and 2002 and found a statistically significant negative abnormal return of -0.83% on average. Their results also indicate that the return effect is larger in wealthier countries, and that attacks involving casualties lead to a stronger stock market reaction than attacks with purely physical damage.

Chesney et al. (2011) studied the effects of terror attacks on stock, commodity and bond markets. Similar to Karolyi and Martell (2006), they also found significant negative effects on stock returns, but only in two-thirds of the terrorist attacks covered in their study. Larger negative abnormal returns were discovered for the airline and insurance sector, whereas the banking sector was less sensitive to attacks.

In contrast, Broun and Derwall (2010) find that most terrorist attacks after 1990 did not lead to statistically significant negative return effects, even though their study also shows that abnormal returns after such attacks are larger than after natural disasters. Broun and Derwall (2010) further analyze which industries are most affected by terrorist attacks and identify the financial sector and

sectors directly affected by such attacks (for example the airline industry after 9/11) as the main culprits.

Kollias et al. (2011) studied the stock market reaction in Spain and the UK respectively after the terrorist attacks in Madrid in 2004 and in London in 2005. While their results show significant negative returns for Spain, the attacks in London did not have a significant effect on stock returns in the UK. In addition, Kollias et al. (2011) argue that if terrorist attacks have an effect, it is only of temporary nature and that a reversal of negative returns occurs shortly after the attack. Eldor and Melnick (2004) look at 639 terrorist attacks in Israel between 1993 and 2009. In contrast to Kollias et al. (2011), they find permanent effects on stock returns, but only in case of suicide attacks and attacks with a large number of casualties.

The effects of general political uncertainty on stock volatility were studied by Boutchkova et al. (2011) on an industry level. Their research shows that an increase in stock volatility due to political uncertainty is higher for industries which are more dependent on international trade, which are more exposed to contract enforcement risks, and which feature a higher labor intensity. They also argue that an increase in political uncertainty in a firm's home country increases the systematic part of volatility, whereas an increase in global risks rather affects the idiosyncratic part.

Huang et al. (2011) examine the effects of corporate governance on stock volatility during a period of political uncertainty. They looked at stock data during the Taiwanese presidential election in 2004, when an assassination attempt on the president made the stock index drop by more than 10% within a week. Their study indicates that firms with better corporate governance had a lower increase in stock volatility.

2.2. Political uncertainty and its effects on stock markets in emerging markets

While articles presented in section 2.1 relate to a global level, a number of studies have also focused on the effects of political uncertainty on stock markets in emerging countries. Similar to results found in studies on a global scale, Bilson et al. (2002) and Erb et al. (1996) see that increases in political risks are positively correlated with increases in stock volatility in emerging markets. Lehkonen & Heimonen (2015) also study the effects of democracy and political uncertainty on stock markets in 49 emerging markets between 2000 and 2012. Similarly, their results suggest that political uncertainty has a negative impact on stock returns. Diamonte et al. (1996) even find that the effect of political risks on stock returns is stronger in emerging markets than in developed economies.

Leon et al. (2000) examine stock volatility on the stock exchange of Trinidad and Tobago through the use of GARCH models. In relation to political uncertainty, they find that stock volatility increases during periods of political unrest. In one example, they refer to 1990 when a militant

Islamic organization attempted to overthrow the country's government (Danopoulos & Collihan, 1993).

Boubaker et al. (2015) study the effects of political uncertainty on the Egyptian stock exchange, for which they only find temporary effects. In the case of terrorist attacks, their study shows negative abnormal returns for the three days following an attack with a reversal on day four. This is in line with the results of Kollias et al. (2011) for developed countries, which also only indicated temporary or no effects. For tensions in the Middle East, Boubaker et al. (2015) only find negative abnormal returns for one day. For a change in government, their analysis does not find any abnormal returns at all after the election. This may be in contrast to the findings by Bialkowski et al. (2008) and Pantzalis et al. (2000) who found abnormal returns after a change in governments in their sample of countries, but it may also be a result of the change in government being anticipated in Egypt and priced into stock returns before the actual election.

The effects of military regimes in ten emerging markets on stock performance were studied by Civilize et al. (2015). They did not find that stock returns were negatively affected by military regimes with statistical significance, in Thailand and Pakistan they even found a positive impact. Civilize et al. (2015) suggest that military involvement may actually reduce political uncertainty through resolving turbulence. Referring to Bunbongkran (1992), Durrani and Grare (2006), Maisirikrod (2007), Mikami and Inoguchi (2008), and Zaidi (2009), they propose that citizens in Thailand and Pakistan may have a positive perception of military takeovers which lead to positive return premia on the local stock markets.

2.3. Political protests and their effects on stock markets in emerging markets

While the effects of political uncertainty on stock markets have been studied extensively, we found only two studies focusing on the effects of political protests and movements. Chau et al. (2014) examine the stock market reaction to political protests in the Middle East and North Africa (MENA). During the so-called "Arab Spring" from December 2010 to mid-2012, a number of violent and non-violent protests, riots, and strikes spread through Arab countries, forcing authoritarian regimes out of power (Cutler, 2012). Using GARCH models, they find an increase in stock volatility in most MENA stock indices, which is in line with other studies analyzing the effects of political uncertainty.

Jeribi & Fakhfekh (2015) focus on the effects of political protests in Tunisia in 2011. They find that the political uncertainty both during the revolution and even after that increased stock market volatility on the Tunisian Stock Exchange significantly. In particular, this was the case in the construction, industries, consumer services, and financial services sectors, whereas the effects on the banking, automobile, and raw material sectors were only of temporary nature. Jeribi & Fakhfekh

(2015) referred to social protests by trade unions in the construction sector and to declines in oil and mining production and increased inflation due to social unrests as potential reasons for these differences.

3. Country Overview

In this section we provide a short overview of the political and economic developments in the three countries examined in this study. In addition, we briefly describe the events during the 2013/2014 protests in each of these countries. This section serves as a crucial source of background information for the analysis in this study.

3.1. Thailand

Thailand is the 27th largest country in the world by GDP according to the IMF (2016). The country has gone through frequent political changes and periods of uncertainty, yet also demonstrated rapid economic development. We study the impact of the events during the period of political uncertainty from October 2013 to May 2014.

3.1.1. Politics

Since a revolution in 1932, Thailand has been a constitutional monarchy. With eighteen successful coups d'état² leading to (temporary) rule under military regimes, the country has witnessed numerous extended periods of political uncertainty and its political system can best be described as volatile. However, only two coups happened since 1991: one in 2006 and one in 2014 (Chaichalearmmongkol, 2014).

In the 2006 coup d'état, the Royal Thai Army overthrew Prime Minister Thaksin Shinawatra who was first elected in 2001 and re-elected in 2005. The military referred to corruption, abuse of power, and interference in checks and balances system as main reasons for the coup (Council for National Security, 2006). While observers agree that some of these allegations against Shinawatra were accurate, there is also the view that the coup was a response to his policies for the poor which the establishment was opposed to (The Economist, 2006). Another explanation is brought up by Handley (2006) who argues that the coup resulted from fears that Shinawatra would exert influence on the throne succession should King Bhumibol pass away. By January 2008, a democratically elected government took over the reins from the military again (Thep gumpanat, 2008).

² A military takeover of government duties through force or the threat of using force.

The new government soon came under pressure from the People's Alliance for Democracy (PAD). Domestic unrest and protests continued until a final clash between protesters and government in May 2010. The period between then and November 2013 is seen as a time of political stability.

In November 2013, a wave of protests started after the government announced an amnesty bill, which would allow for a return of former premier Shinawatra. This led to a political crisis which ended with a coup d'état in May 2014. Since then, Thailand is governed by a military junta led by prime minister Prayuth Chan-ocha, a former army chief of the Royal Thai Army. The events leading to this coup are outlined in greater detail in Table 1 and form the basis of our empirical analysis.

3.1.2. Economy

Despite various periods of heightened political risk, Thailand has experienced high economic growth in combination with a significant reduction of poverty over the past decades. With a population of 67 million, the country is the second largest economy in Southeast Asia after Indonesia today (Peel, 2015). Thailand had GDP growth rates of eight to nine percent in the 1980s and 1990s, and growth rates between four and seven percent in the early 2000s. Yet, since 2013, GDP growth has remained below four percent and is expected to remain at this level until 2017 (World Bank Group, 2015a).

The World Bank suggests that recent political uncertainty, which affected investment volumes negatively, has been a key reason for the subdued level of growth (World Bank Group, 2015b). Inflation rates have trended between two and five percent for most of the 2000s except for the period during the global financial crisis 2008-2009 where inflation turned negative (International Monetary Fund, 2016). One phenomenon that receives wide attention by economists working with Thailand is the low unemployment rate of less than one percent, which is among the lowest in the world. It has stayed around or below one percent since 2011. The Bank of Thailand describes the reason to lie within the structure of the Thai labor market. Those who cannot find jobs in the service or manufacturing sectors will either start their own small businesses or work in the agricultural sector (Yuvejwattana, 2015).

With exports accounting for 75 percent of Thailand's GDP in 2014, the country's economy is largely export-focused (World Bank Group, 2015c). Services and industry are key sectors of the country and comprise 55.8 and 32.6 percent of GDP respectively (Central Intelligence Agency, 2015).

Due to strong economic growth, the Stock Exchange of Thailand has developed into a leading stock exchange in Emerging Asia since the 1970s. Thailand is an important market for emerging market investors, and foreign investors account for approximately 25 percent of the stock exchange's transaction volume (The Stock Exchange of Thailand, 2016).

Table 1: Key events during the Thai crisis 2013/2014

Event Period	Timeframe	Trading Days	Key Events
1	31-Oct-2013 – 30-Nov-2013	22	On October 31, protests started after the government announced an amnesty bill, which would have allowed a return of former premier Shinawatra. This bill was passed by the lower house on November 1, 2013. Subsequently, protest numbers increased, forcing the upper house of parliament to reject the bill. On November 20, the Constitutional Court ruled that a government-proposed bill, which would have amended the constitution, was unconstitutional. This further increased outrage amongst protesters, resulting in the besieging of government offices on November 25.
2	1-Dec-2013 – 12-Jan-2014	30	Violent clashes between government supporters and opposition first broke out on December 1, resulting in four casualties and 57 wounded. On December 8, oppositional members of parliament resign, leading to a call for new elections on the next day. On December 22 and 26, large anti-government protests followed, which resulted in violence between protesters and police. More than 200 people were injured. The following weeks saw further protests.
3	13-Jan-2014 – 28-Feb-2014	35	On January 13, protesters attempt to “shut down” Bangkok. On January 21, the government declares a state of emergency. During a speech on January 26, a protest leader is killed, resulting in an increasing number of protesters. Elections were scheduled for February 2, but protesters prevented the opening of 10,000 polling stations. On February 11, new elections were set for April 27 for polling stations which were blocked. On February 19, a court ruled that use of force against protesters is not permitted, after five were killed by police.
4	1-Mar-2014 – 19-May-2014	56	On March 1, the blockade of Bangkok ended. The state of emergency was lifted on March 18. On April 30, new elections were scheduled for July 20, after the existing election results had been annulled by the constitutional court. On May 7, the prime minister and a number of ministers were removed from office through a court decision. During subsequent protests, demonstrators call for overthrowing the government. On May 15, the election initially scheduled for July 20, is cancelled due to lack of support by protesters.
5	20-May-2014 – 30-Jun-2014	30	On May 20, the Thai army declares martial law, and on May 22, the army stages a coup d'état against the government. Political gatherings were banned and a curfew as well as restrictions on freedom of press were imposed. This ends the protests and the period 5 reflects the “crisis resolved” period of 30 trading days.

Sources: ABC News (2014), BBC (2015), AP News (2014), The Inquirer (2014)

3.2. Brazil

Brazil is the fifth largest country in the world in terms of size and the largest country in both South America and the southern hemisphere. Since the mid-1980s, Brazil's social and economic development has progressed rapidly, and today Brazil constitutes the world's seventh largest economy by nominal GDP and ranks fifth by population with 204.5 million inhabitants (IMF, 2015). Brazil's stock market BOVESPA is among the largest in the world and has attracted international investors seeking to participate in the growth potential of the Brazilian economy. However, the country faces concurrent economic and political crises. Both have strong ties to the events of political uncertainty in 2013, which we investigate in this paper.

3.2.1. Politics

As in many Latin American countries, Brazil's historic political development has been significantly marked by periods of political turmoil and change. Among the most notable events was the defeat of the military regime in 1985, which determined the political transition towards democracy. After a military-led coup d'état in 1964, the country had been ruled by a military dictatorship from 1964 to 1985 (Green, 2010). Growing dissatisfaction and a severe economic crisis led to the civil unrest movement *Diretas Já* (Direct Elections Now) which culminated with the election of Tancredo Neves as president of Brazil. In 1992, a new wave of protests erupted against president Fernando Collor de Mello, who was accused of corruption (Weyland, 1993).

Under Fernando Henrique Cardoso, first as Minister of Economy and later president, and the introduced economic plan (Plano Real), Brazil stopped its high inflation and rising levels of unemployment. After two terms in office, Cardoso was succeeded by Luiz Inácio Lula da Silva (Lula) from the center-left party PT (*Partido de Trabalhadores*) in January 2003. Political scandals surrounding corruption have increased during Lula's presidency, and significantly impacted both the people's satisfaction with the government and also the (domestic and foreign) investors' trust in the country's political stability (Balán, 2014).

Most notable was the Mensalão scandal which evolved in 2005. The scandal related to corruption accusations and bribes-for-votes against numerous PT party members, including president Lula. In addition, the Sanguessugas scandal, a scheme in which the government purchased overpriced ambulances in order to receive kickbacks, has caused severe political turmoil. Other scandals such as the attempted purchase of a dossier that implicated opposition members in the Sanguessugas scandal just before Lula's reelection have affected the political environment (Reuters, 2007). Lula was succeeded by Dilma Rousseff, his former Chief of Staff, in 2011. Rousseff has not managed to free the Brazilian politics from corruption and hence her tenure has been impacted by corruption scandals as well. Growing inequality in an economic downturn, accusations of corruption in

politics, and dissatisfaction with the use of public funds including insufficient spending on education and health have led to several protests in 2012 and early 2013, eventually leading to the mass protests and the period of political uncertainty in 2013 which we study in this research thesis. The events of this period are described in Table 2.

3.2.2. Economy

Brazil's economy has historically been characterized by commodity-driven swings. During the 16th to 19th centuries, Brazil became the world's largest sugar producer, it experienced a gold boom with major discoveries, and developed into the world's largest coffee producer. Rapid economic growth under the military government in the 1970s was stopped due to the oil crises. An increase in public debt and rising inequalities led to political turmoil. Brazil's turbulent development continued with a debt rescheduling in 1987 and a period of hyperinflation that peaked in 1990. The introduction of Plano Real in 1994 came with significant changes to the economy and public spending, and introduced the Real as Brazil's new currency. The Brazilian Real became floated in 1999, while being pegged to the US Dollar before. In the early 2000s, Brazil's economy benefited from the increasing global demand for its commodities, among which are iron ore, coffee, sugar, wheat, corn, meat, and soy. Due to weak domestic demand and social inequalities, the fall in commodity prices could not be compensated by the domestic economy and Brazil entered a period of economic contraction in 2011.

China is Brazil's largest trading partner due to Brazil's reliance on commodity exports. Its other large trading partners include the United States, Argentina, the European Union, and other Latin American economies. Today, Brazil's economy suffers from a number of factors, including low commodity prices, high public tariffs and taxes, weak domestic demand and historically high income inequality, inflation, and rising unemployment (Central Intelligence Agency, 2015).

Lower demand for Brazil's main export commodities from the mining and agricultural sector have caused the export-oriented sectors to decline substantially. High public tariffs and taxes for Brazilian consumers leave the country's population with insufficient purchasing power to support the economy with domestic demand. Inflation is currently above a ten percent annual run-rate, the highest in more than twelve years, according to November 2015 data (IPCA-15 inflation data). Economists argue that Brazil faces a confluence of two separate, yet interrelated crises: one economic, and one political (CNBC, 2013). The political crisis relates to corruption scandals as well as the inability to address the economic crisis and mass protests against the government.

Table 2: Key events during the Brazilian crisis 2013

Event Period	Timeframe	Trading Days	Key Events
1	1-Mar-2013 – 19-Apr-2013	36	Local protests against proposed hikes in public transport fares occurred as the <i>Revolta do Busão (Bus Rebellion)</i> on a small local scale with first protests in Natal since August 2012, but the number of protests and in particular public attention and media coverage increased starting in March 2013. Protests spilled over to larger economic centers such as Porto Alegre. In the capital of Rio Grande do Sul, protesters against public transport price hikes attempted to enter the city hall in a violent dispute with police.
2	22-Apr-2013 – 5-Jun-2013	33	On April 22, 2013, protests experienced a decisive change. In period 1, protesters' demands focused on opposition to increases in public transportation prices, whereas in period 2, protests also included matters of education, healthcare, safety and poverty. The first nationwide protest day occurred on April 22 with several protests across the country. Protesters stormed into government buildings in Paraná, Rio de Janeiro, Belo Horizonte and Porto Alegre. Two protesters died in violent clashes with police in Rio. Protests continued throughout May and early June.
3	6-Jun-2013 – 12-Jul-2013	27	The first large protest in the capital São Paulo occurred on Avenida Paulista on June 6. The protests increasingly focused on corruption and as the Confederations Cup started in June, protesters took on the excessive spending on the FIFA World Cup 2014 as a key criticism. News reports appeared on June 13 that the Brazilian police had lost control over the situation and reacted with violence to nationwide protests on June 12. More than 1 million Brazilians protested on June 23. The last nationwide large protest occurred during July 11, although the government started to address the public's concerns, i.e. president Rousseff negotiated with protesters on June 24 and agreed that 50 billion BRL would be spent on public transport.
4	13-Jul-2013 – 22-Aug-2013	29	The situation became more controlled during the fourth period although protests continued on a smaller scale. The Brazilian government responded with various actions to address the protesters' demands, including a reduction in prices of public transport and increased spending on health and education. Global media coverage of protests significantly decreased.
5	23-Aug-2013 – 2-Oct-2013	30	The fifth event period entails the time after the protests and main events ended. The Brazilian government tried to control the situation with military police actions in the prior periods and stopped protests, although the public unrest had calmed down since some of the demands were addressed by the government.

Sources: *Globo (2013)*, *Time (2013)*, *BBC (2013)*, *Valor (2013)*, *Jucelino da Luz (2013)*

3.3. Turkey

Turkey ranks 18th globally by nominal GDP and is part of the G-20 major economies. Turkey is often described as being between a developed and an emerging economy. The accession of Turkey to the European Union has widely been discussed since the start of membership negotiations in 2005 given some opposition from European countries and within the Turkish population. The country has exhibited strong growth rates and increasingly attracted international investors. In this thesis, we study the impact of the protests and events of political uncertainty from May to October 2013, widely described as the Gezi Park protests.

3.3.1. Politics

Turkey has been part of the United Nations as one of its original members since 1945. Soon after, in 1946, a multi-party system was introduced by Ismet İnönü, the second president of the Republic of Turkey, who succeeded Mustafa Kemal Atatürk. Thereafter, Turkey was impacted by several major political changes with the military often playing a key role in the political environment. In 1960, Turkey was showplace of a military coup d'état which removed president Celal Bayar from power. Further coups d'état occurred in 1980 as well as in 1997, when the military demanded president Necmettin Erbakan to resign. In 2002, Recep Tayyip Erdoğan, a former mayor of Istanbul, won the elections with his party Adalet ve Kalkınma Partisi (AK, Justice Development Party). The country, which has been affected by a severe economic downturn prior to 2002, has enjoyed economic prosperity since the AK party has been in power, which has provided it with the necessary support to win the subsequent elections as well.

Although the economic growth that the country experienced increased the party's popularity among some parts of the population, the party and some of its members have been involved in corruption allegations. Most severe, the 2013 corruption scandal titled "gas for gold", involved 52 people who were detained for their actions related to bribery, corruption, and fraud, among others. All have been linked to the ruling AK party (Kelley, 2013).

Also in 2013, the events that we study in this thesis took place. The government intended to remove the Gezi Park in Istanbul and rebuild the Taksim Military Barracks which were destroyed in 1909. The park in the western part of the city is iconic to the city's inhabitants. Already in 2012, opposition to the plans to remove the Gezi Park started with a petition. However, protests only occurred starting from May 2013. These protests, and in particular the government and police reaction, have caused mass demonstrations that later involved various other issues including the

freedom of press and expression (Hürriyet Daily News, 2013). The events of this period are described in Table 3.

3.3.2. Economy

With a population of 78.7 million inhabitants (Turkish Statistical Institute, 2016), the country generated a GDP of 732 billion USD in 2015 (IMF World Fact Book, 2015). Turkey has experienced rapid economic growth in particular in the period after the dotcom bubble at the turn of the millennium. GDP growth rates have reached 9.2 percent in 2010 and 8.8 percent in 2011 (World Bank, 2016) after the financial crisis due to aggressive stimuli and tax cuts introduced by the government. Also, according to the World Bank database, growth has slowed down between 2012 and 2014 to the range of two to four percent in line with more developed countries.

Along with the economic growth, wealth indicators such as the life expectancy and the GNI per capita have also improved over the last decade. Concerning the sector contribution to GDP, Turkey retains a large and important agricultural sector and remains the largest global producer of several agricultural products including hazelnuts and apricots. In the industrial sector, Turkey remains a hub for the textile industry that largely exports to continental Europe and the EU member states, although other industrial sub-sectors have benefited from the economic upswing and increased domestic demand. In services, tourism remains a key economic sector for Turkey, and in particular for some of the touristic areas within the country.

In line with the economic development, Turkey has established an important stock exchange. The Istanbul Stock Exchange (ISE) is an increasingly active market for domestic and international investors in Turkish securities. The Turkish economy and the stock market have both performed well, but were affected by political uncertainty events such as the mentioned corruption scandals or the political protests in 2013, which are subject of this study.

The country's international political actions are highly important to the domestic economy due to the reliance on import partners (#1 Russia, #2 China, #3 Germany) and its main export partners Germany, Iraq, and the United Kingdom (Central Intelligence Agency, 2016).

Table 3: Key events during the Turkey crisis 2013

Event Period	Timeframe	Trading Days	Key Events
1	1-May-2013 – 14-May-2013	10	On May 1, events leading up to the large-scale protests and civil unrest started when May Day marchers clashed with police near the Taksim square, which was held closed. Several further events occurred in May that led to increased tensions between the population and the Turkish government. On May 11, a car bomb killed several people near the Syrian border, for which many accused the government’s policies being at the core of the conflict.
2	15-May-2013 – 2-Jun-2013	13	On May 27, environmental activists attempted to block the Gezi Park. As the construction company tried to start the demolition of the park on May 28, environmentalists camped there to protest. Police used tear gas and burned down the tents of protesters. On May 29, public outrage about the police’s violent intervention led to an increasing number of protesters.
3	3-Jun-2013 – 1-Jul-2013	21	Protests started in Ankara and Antalya among other cities, and protests increased significantly in size and number as violent clashes with police occurred between June 3 and 5. Tens of thousands of protesters continually stayed at Gezi Park. Protests calmed down on June 6, which was an Islamic holy night. Yet in the following days, protests continued. On June 11, police entered the square for the first time again after June 1 and broke the barricades built by protesters. President Erdogan rallied pro-government protesters, which clashed with anti-government initiatives, and retained a radical stance against protesters. Several protesters lost their lives during the June confrontations. Mass demonstrations and country-wide protests started again on the weekend of June 28/29 due to the release of the police officer who shot a protester.
4	2-Jul-2013 – 8-Sep-2013	49	On July 2, the disputed redevelopment project of Taksim Park was blocked by a court. A government’s appeal against the decision was accepted on July 22 by another court, but the conflict remained disputed, although the protests have calmed since period 3. On September 7, protests occurred in Istanbul and Izmir as the police conflicts with protesters of university construction program.
5	9-Sep-2013 – 18-Oct-2013	30	In this “quiet period”, the protests have stopped and media coverage of the conflicts has stopped. We use this event period to test for post-event effects such as a potential reversal.

Sources: *Hürriyet Daily News* (2013), *Amnesty International* (2013), *The Guardian* (2013)

4. Methodology

In this section we explain our approach for the methodology of the empirical analysis, including how the event study methodology is applied to measure abnormal returns. Abnormal returns need to be determined to identify whether the events in this study had a significant impact on stock returns. In addition, we explain how we perform OLS regressions on a market level to determine potential links between protest size and abnormal returns (ARs) (Section 4.4). Finally, we explain how we perform OLS regressions on a firm level to identify links between firm characteristics and CARs (Section 4.5).

4.1. Determining event windows

Based on MacKinlay (1997), we define three different time windows in our event studies for Thailand, Turkey and Brazil: the estimation, the event, and the post-event windows. The event window is further discerned into five separate event periods. We use stock data from the estimation window to estimate normal returns for the event window. As Sorokina et al. (2013) indicate, there is no agreement on the optimal length of the estimation window, referencing studies in which the length ranges between 100 and 500 days. In our study, we use an estimation window of 150 days as a longer period would have significantly affected the number of firms in our sample due to data availability. The estimation window ends ten days before the first event in the respective countries starts. This is to ensure that our normal returns are not impacted by potential prior announcements about protest or policy plans.

Within the scope of our analysis, we have identified that the three separate cases of intra-state political protests share common characteristics in terms of progression of sub-events. We identified patterns that allowed us to split the protests into five distinct event periods. This provides the study with two main advantages. First, it allows for an analysis of effects in separate event phases within a larger event. Secondly, the respective event periods allow for a comparison across the three countries that we study. Table 4 depicts how we classified event windows in our study.

Table 4: Event windows classification

Event Period	Name	Description of Common Characteristics
1	Early stage	<ul style="list-style-type: none"> • The early stage starts with first actions within the public that indicate dissent with political matters and decreasing popularity of the ruling party • Small scale protests that often occur on a local scale, but may spread to a wider scale, but in a controlled manner without severe violence • Media coverage remains regional and/or national and international media does not give significant attention towards the event
2	Protest expansion	<ul style="list-style-type: none"> • The protests spread across several regions • The protesters include now more matters than the initial cause into their demands and the reasons for public protests expand • The increased intensity of protests leads to violent clashes between protesters and the state forces (i.e. military or police) • Often, protesters direct their actions against government entities and attack government buildings
3	Crisis peak	<ul style="list-style-type: none"> • The intensity of protests increases further compared to the heating up/violence phase • Mass protests occur and media often describes the government as losing control of the situation • Increased violence and clashes between the different parties • The crisis peak period does not end before there is a substantial sign of the situation calming down significantly
4	Resolution process	<ul style="list-style-type: none"> • There is a significant change between phase 3 and phase 4 as the government either accepts the demands of the protesters, or enacts changes in another way to directly address the protest causes • Protests occur on a smaller scale and calm down from the mass protest events that occurred during period 3 • National and international media attention decreases and media attention tends to look back at the events rather than introducing fear of increasing uncertainty/protests
5	Crisis resolved	<ul style="list-style-type: none"> • This period starts with the end of the protests and it lasts for 30 trading days in our analysis • The government is under control of the situation • The government has enacted, or is in process to enact, most of the changes agreed on in period 4 • We use this period as the control period for reversal effects after the resolution of the crisis

4.2. Measuring normal returns

The measurement of abnormal returns during the event window requires the estimation of expected or normal returns. A number of statistical and economic models exist for this purpose. Economic models such as the Capital Asset Pricing Model (CAPM) or the Arbitrage Pricing Theory have been applied in a number of event studies, but those two models introduce biases to the estimation of normal returns. Therefore, statistical models are more common to be found in event studies today (MacKinlay, 1997).

In our event study, we will apply the market model to determine expected returns. Cable & Holland (1999) find that the market model is most suitable for this purpose, outperforming both other statistical models and the CAPM. The market model measures the movement of a security in relation to a market portfolio. The return R_{it} for firm i at any given time t is as follows:

$$\begin{aligned} R_{it} &= \alpha_i + \beta_i R_{mt} + \epsilon_{it} \\ E(\epsilon_{it}) &= 0 \qquad \qquad \qquad \text{Var}(\epsilon_{it}) = \sigma_{\epsilon_i}^2 \end{aligned} \quad (1)$$

where R_{mt} is the return of the market portfolio at time t and ϵ_t the noise term. The parameters of the market model, α_i , β_i , and $\sigma_{\epsilon_i}^2$ are determined for each company based on data from the estimation window through an OLS regression, which MacKinlay (1997) deems consistent with the market model. These parameters are defined as follows:

$$\hat{\beta}_i = \frac{\sum_t^T (R_{it} - \hat{\mu}_i)(R_{mt} - \hat{\mu}_m)}{\sum_t^T (R_{mt} - \hat{\mu}_m)^2} \quad (2)$$

$$\hat{\alpha}_i = \hat{\mu}_i - \hat{\beta}_i \hat{\mu}_m \quad (3)$$

$$\hat{\sigma}_{\epsilon_i}^2 = \frac{1}{L_1 - 2} \sum_t^T (R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt})^2, \quad (4)$$

where

$$\hat{\beta}_i = \frac{1}{L_1} \sum_t^T R_{it} \quad (5)$$

and

$$\hat{\beta}_m = \frac{1}{L_1} \sum_t^T R_{mt} \quad (6)$$

α_i represents the intercept of returns of firm i that is unrelated to market returns, while β_i measures the co-movement of the returns of firm i with the returns of the market. For our study, parameters α_i and β_i are only determined once for each firm, even though we apply the market model for events starting at different dates. As most of the events in our study happen in close succession, the estimation of parameters α_i and β_i could be affected by earlier events if we were to choose an estimation window that only starts after the first events have occurred. As stated in section 4.1, our estimation windows comprise 150 days and end 10 days before the first events happen.

While the market model is a one-factor model, other potential factors could be added to make the model more precise. For example, Fama and French (1993) suggest the addition of two factors which measure the excess returns of firms with a small market capitalization over firms with a high market capitalization and the excess returns of firms with high book-to-market ratios over firms with low book-to-market ratios. However, as MacKinlay (1997) explains, the addition of more factors only has a limited impact in event studies as their additional explanatory power over the market factor is small. Therefore, and due to issues pertaining to data availability, we decided to focus on the market model and avoid implementing additional factors.

4.3. Calculation of abnormal returns

Abnormal returns of firm i on day t denote the actual return of firm i on day t during the event window minus the expected return of firm i on day t :

$$AR_{it} = R_{it} - E(R_{it}) \quad (7)$$

Applying the market model established in section 4.2 to determine expected returns, abnormal returns are determined as follows:

$$\widehat{AR}_{it} = R_{it} - \hat{\alpha}_i - \hat{\beta}_i R_{mt} \quad (8)$$

The variance of abnormal returns under the null hypothesis is defined as

$$\sigma_{\widehat{AR}_{it}}^2 = \sigma_{\epsilon_i}^2 + \frac{1}{L_1} \left(1 + \frac{(R_{mt} - \hat{\mu}_m)^2}{\hat{\sigma}_m^2} \right) \quad (9)$$

where the variance is composed of the variance of the noise term of normal returns from (1) and the variance related to the sampling error in α_i and β_i . As the length of the estimation window (L_1) increases, the variance of the sampling error decreases.

Since the event periods in our study typically last more than one day, we aggregate abnormal returns. The cumulated abnormal returns from the beginning of the event period t till the end T of the event window for each firm i is the sum of abnormal returns:

$$\widehat{CAR}_i(t, T) = \sum_t^T \widehat{AR}_{it} \quad (10)$$

The corresponding variance of cumulated abnormal returns can be computed as follows:

$$\sigma_{\widehat{CAR}_i}^2(t, T) = (T - t + 1)\sigma_{\epsilon_i}^2 \quad (11)$$

As we look at cumulated abnormal returns at a country and sector level, we calculate the arithmetic average of cumulated abnormal returns of all firms from our sample for each of the three countries:

$$\overline{CAR}(t, T) = \frac{1}{N} \sum_{i=1}^N \widehat{CAR}_i(t, T) \quad (12)$$

where N denotes the number of firms in a country or in a sector in a specific country. The corresponding variance of the arithmetic average is as follows:

$$\sigma_{\overline{CAR}}^2(t, T) = \frac{1}{N^2} \sum_{i=1}^N \sigma_{\widehat{CAR}_i}^2(t, T) \quad (13)$$

4.4. OLS regressions to identify explanatory variables of ARs on a market level

To identify potential explanatory variables for the abnormal returns, we conduct OLS regressions. The general multiple OLS regression model can be written as

$$Y_i = \beta_0 + \beta_1 * X_1 + \beta_2 * X_2 + \beta_k * X_k + u, \quad (14)$$

where β_0 is the intercept, β_1 to β_k are the parameters associated with X_1 to X_k respectively, and u is the error term (Wooldridge, 2009). X_1 to X_k are the explanatory and control variables in the model. To identify whether political protests could be explanatory for abnormal returns in the three markets examined in this thesis, we run OLS regressions on a market level for each country separately. For that purpose, we conduct three distinct regressions, which all feature the same setup:

$$\overline{AR}_t = \beta_0 + \beta_1 * protest_size_t + \beta_2 * world_commodity_index_t + \beta_3 * oil_price_t + \beta_4 * US_5yr_yield_t \quad (15)$$

where:

\overline{AR}_t is the average abnormal return in a given country at time t,

$protest_size_t$ represents the size of the protests in a given country at time t,

$world_commodity_index_t$ represents the global price of 22 commodities at time t,

oil_price_t is the oil price at time t as displayed in the WTI Generic Oil Future,

$US_5yr_yield_t$ is the US generic 5-year government yield at time t.

In our model, \overline{AR}_t is the dependent variable, while $protest_size_t$ is set as the explanatory variable. As control variables, we chose $world_commodity_index_t$, oil_price_t , and $US_5yr_yield_t$. A more detailed description of the respective variables can be found in section 5.2.

We perform this regression with three distinct data samples:

- a data sample only comprising data for Thailand (where applicable) during the timeframe of political protests in Thailand in 2013/2014,
- a data sample only comprising data for Brazil (where applicable) during the timeframe of political protests in Brazil in 2013,
- a data sample only comprising data for Turkey (where applicable) during the timeframe of political protests in Turkey in 2013.

4.5. OLS regressions to identify explanatory variables of CARs on a firm level

To identify potential determinants of abnormal returns on a firm level, we also performed separate OLS regressions in which firm characteristics are used as independent variables.

Our multiple regression model is set up as follows:

$$\begin{aligned}
 CAR_{fc}(t, T) = & \beta_1 * trading_volume_{fc} + \beta_2 * volatility_{fc} + \beta_3 * government_ownership_{fc} + \\
 & \beta_4 * net_debt_to_shareholder_equity_{fc} + \beta_5 * institutional_ownership_{fc} + \\
 & \beta_6 * market_capitalization_{fc} + \beta_7 * price_to_book_{fc} + \beta_8 * profit_margin_{fc} + a_c + u_{fc}
 \end{aligned} \tag{16}$$

where:

$CAR_{fc}(t, T)$ is the cumulative abnormal return of firm f in country c in a given period t to T,
 $trading_volume_{fc}$ is the amount of shares of firm f in country c traded divided by total shares outstanding,

$volatility_{fc}$ refers to the volatility of the share price of firm f in country c,

$government_ownership_{fc}$ represents the stake the government holds in a firm f in country c,

$net_debt_to_shareholder_equity_{fc}$ represents the leverage of firm f in country c,

$institutional_ownership_{fc}$ represents the stake institutional investors hold in a firm f in country c,

$market_capitalization_{fc}$ is the market capitalization of firm f in country c,

$price_to_book_{fc}$ is the share price to book value ratio of firm f in country c,

$profit_margin_{fc}$ represents the profit margin of firm f in country c,

a_c represents unobserved effects that are fixed in country c,

u_{fc} represents the error term.

In this model, we use $CAR_f(t, T)$ as the dependent variable, whereas $trading_volume_{fc}$, $volatility_{fc}$, $government_ownership_{fc}$, and $net_debt_to_shareholder_equity_{fc}$ are used as explanatory variables. $Institutional_ownership_{fc}$, $market_capitalization_{fc}$, $price_to_book_{fc}$ and $profit_margin_{fc}$ represent control variables. A detailed description of the variables can be found in section 5.3.

As we intend to yield country- and period-specific results, we perform this regression with 20 distinct data samples:

- five data samples comprising data for firms of all three countries studied in this group and for each of the five event periods respectively,
- five data samples comprising data only for Thai firms for each of the five event periods,
- five data samples comprising data only for Brazilian firms for each of the five event periods,
- five data samples comprising data only for Turkish firms for each of the five event periods.

In the regressions with data of firms of all three countries, we might have unobserved country-fixed effects. By controlling for such effects, we can eliminate a potential source of bias. Therefore, based on Wooldridge (2009), we first calculate the average of each variable for each country. We get:

$$\begin{aligned} \overline{CAR}_c(t, T) = & \beta_1 * \overline{trading_volume}_c + \beta_2 * \overline{volatility}_c + \beta_3 * \overline{government_ownership}_c + \\ & \beta_4 * \overline{net_debt_to_shareholder_equity}_c + \beta_5 * \overline{institutional_ownership}_c + \\ & \beta_6 * \overline{market_capitalization}_c + \beta_7 * \overline{price_to_book}_c + \beta_8 * \overline{profit_margin}_c + a_c + \bar{u}_c \end{aligned} \quad (17)$$

As a_c is fixed in each country, it appears in both formula 16 and 17. By subtracting (17) from (16), we can eliminate this factor:

$$\begin{aligned} \frac{CAR_{f_c}(t, T) - \overline{CAR}_c(t, T)}{\overline{CAR}_c(t, T)} = & \beta_1 * (trading_volume_{f_c} - \overline{trading_volume}_c) + \beta_2 * (volatility_{f_c} - \overline{volatility}_c) + \\ & \beta_3 * (government_ownership_{f_c} - \overline{government_ownership}_c) + \\ & \beta_4 * (net_debt_to_shareholder_equity_{f_c} - \overline{net_debt_to_shareholder_equity}_c) + \\ & \beta_5 * (institutional_ownership_{f_c} - \overline{institutional_ownership}_c) + \\ & \beta_6 * (market_capitalization_{f_c} - \overline{market_capitalization}_c) + \\ & \beta_7 * (price_to_book_{f_c} - \overline{price_to_book}_c) + \beta_8 * (profit_margin_{f_c} - \overline{profit_margin}_c) \\ & + (\mathbf{u}_{f_c} - \bar{u}_c) \end{aligned} \quad (18)$$

The OLS regressions for the samples that include firms of all countries is performed with these country-demeaned variables and thus eliminates unobserved country-fixed effects.

4.6. Statistical significance testing

To determine whether our cumulative abnormal returns at a country and sector level and our regression coefficients are statistically significant, we perform traditional two-tailed t-tests. This is necessary to identify if our results are significant enough to draw conclusions from our sample to

the entire population of firms. Formulating the null hypothesis that CARs are expected to be zero, we receive

$$H_0 : \overline{CAR}(t, T) = 0 . \quad (19)$$

This can be tested using

$$\theta_1 = \frac{\overline{CAR}(t, T)}{\text{var}(\overline{CAR}(t, T))^{0.5}} \sim N(0, 1) \quad (20)$$

where the variance of the average CAR is

$$V(\overline{CAR}(t, T)) = \frac{1}{N^2} \sum_{i=1}^N \hat{\sigma}_i^2(t, T) = \frac{T - t + 1}{N^2} \sum_{i=1}^N \sigma(\widehat{AR}_{it})^2 \quad (21)$$

The CARs are statistically significant if the absolute value of θ_1 (t-value) exceeds the critical value of the two-tailed t-distribution at a confidence level of 95% ($\alpha=0.05$) and with $n-1$ degrees of freedom, where n equals the number of firms in the sample. In all other cases, the null hypothesis is rejected (MacKinlay, 1997). Similarly, we perform significance tests for the regression coefficients which we retrieve from our OLS regressions. The coefficients are statistically significant if the absolute values of their t-values exceed the critical value of the two-tailed t-distribution at a confidence level of 95% ($\alpha=0.05$) and with $n-1$ degrees of freedom, where n equals the number of observations in the sample.

5. Data

Throughout this section, we outline our data gathering approach for sample data both on the market level and on the firm level. Moreover, we also discuss our choice of regression variables and the data gathering and calculation approaches for these. We conclude this section by discussing potential caveats inherent in the data used in our analysis.

5.1. Selection of Firm Sample and Data Gathering

Our study of intra-state political protests on stock markets is conducted based on observations that are found within a sample of publicly listed companies in the three countries covered in our study: Brazil, Thailand, and Turkey. For each individual country, we focus on analyzing companies that have their *domicile* in that country. The underlying rationale for this is that companies with a legal domicile are likely to be most affected by political protests within that given country. In addition, companies with legal domicile in either Brazil, Turkey, or Thailand have, in the majority of the cases, significant business operations within those countries.

As a starting point in assembling our data sample, we extracted stock market and accounting data on a firm level from the Bloomberg database and calculated daily log returns on market closing prices for all available firms with the following formula:

$$r_t = \ln \frac{P_t - P_{t-1}}{P_t} \quad (22)$$

This allowed us to derive a first set of firms of all listed companies with domicile in either of the countries. Due to the nature of our empirical study, we had to progress and exclude specific companies that have infrequent trading activity and infrequent daily returns in our event periods. We have applied a consistent approach across all three countries and only considered companies that had trading activity on their main stock exchange on more than 90 percent of the trading days throughout the estimation, the event, and the post-event windows (MacKinlay, 1997). Further, we excluded companies that have an aggregate market capitalization of less than USD 1 million since we believe that among the purposes of this study, the results should provide insights to institutional investors – which are unlikely to invest in penny stocks. After the previous two steps, we have a materially smaller sample size. However, we further excluded companies that we identified as Real Estate Investment Trusts (REITs) as companies in this sector are exposed to different stock price drivers due to REITs' specific characteristics. After this final step, we define the remaining companies as our firm sample for the analysis on market level.

As we already discussed before, we also conduct an analysis on the firm level. For this, our sample of firms requires more specific data on firm characteristics and metrics. For some companies, we have been successful in manually gathering the required data that was missing on the Bloomberg database, whereas in other cases, we had to exclude these firms from our sample due to a lack of data. Tables 5, 6, and 7 show how we derived the data samples both for the market level analysis and the firm level analysis, while Figure 2 illustrates the sectorial segmentation of our sample.

In addition, we gathered data on our reference/benchmark index. We chose to calculate abnormal returns in relation to the MSCI World Index since we believe that this is the index that is most representative of global equity returns and the most widely used benchmark for global equity investors. We expect it to show little impact from the events in Thailand, Turkey, and Brazil as these markets only account for a small percentage of companies and value in that index. MSCI closing price data was extracted from Bloomberg and returns were calculated with the same approach as for individual firm returns.

Table 5: Derivation of the firm sample in Thailand

This table illustrates how the firm sample for the analysis of Thailand was derived

	Sample Size
All listed companies with domicile in Thailand	727
Exclusions: Infrequent trading activity	-183
Exclusions: Market capitalization <1m USD	-96
Exclusions: Observations REITs and other non-applicable sectors	-11
<i>Final market level sample</i>	437
Exclusions: Observations with insufficient firm-level data	-12
<i>Final firm level sample</i>	425

Description: Our firm sample in Thailand yielded 437 firms for the market-level analysis and 425 firms for the firm-level analysis, out of 727 listed companies that are domiciled in Thailand. Therefore, we include 60% of the initial data set in the market-level analysis and 58% in the firm-level analysis.

Table 6: Derivation of the firm sample in Brazil

This table illustrates how the firm sample for the analysis of Brazil was derived

	Sample Size
All listed companies with domicile in Brazil	473
Exclusions: Infrequent trading activity	-130
Exclusions: Market capitalization <1m USD	-102
Exclusions: Observations REITs and other non-applicable sectors	-40
<i>Final market level sample</i>	201
Exclusions: Observations with insufficient firm-level data	-23
<i>Final firm level sample</i>	178

Description: Our firm sample in Brazil yielded 201 firms for the market-level analysis and 178 firms for the firm-level analysis, out of 473 listed companies that are domiciled in Brazil. Therefore, we include 43% of the initial data set in the market-level analysis and 38% in the firm-level analysis, indicating a lower degree of data quality compared to the Thai sample.

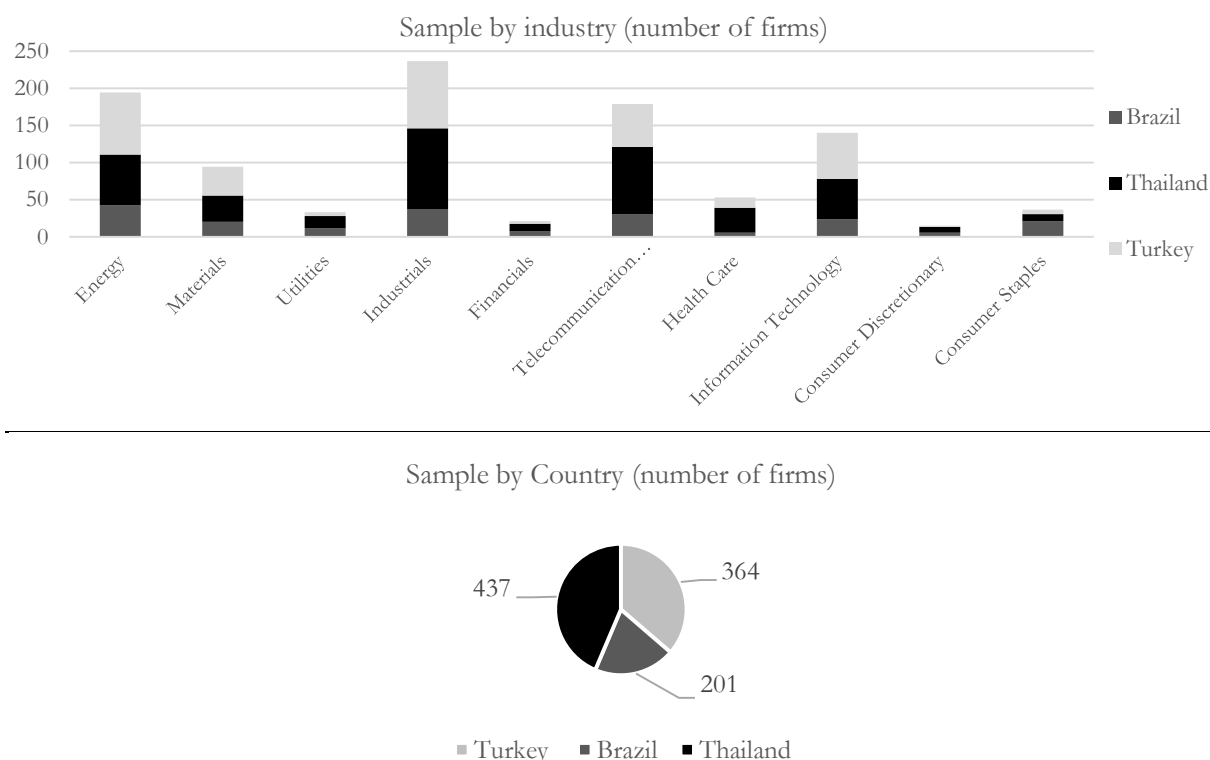
Table 7: Derivation of the firm sample in Turkey

This table illustrates how the firm sample for the analysis of Turkey was derived

	Sample Size
All listed companies with domicile in Turkey	446
Exclusions: Infrequent trading activity	-40
Exclusions: Market capitalization <1m USD	-23
Exclusions: Observations REITs and other non-applicable sectors	-19
Final market level sample	364
Exclusions: Observations with insufficient firm-level data	-17
Final firm level sample	347

Description: Our firm sample in Turkey has yielded 364 firms for the market-level analysis and 347 firms for the firm-level analysis, out of 473 listed companies that are domiciled in Turkey. Therefore, we include 82% of the initial data set in the market-level analysis and 73% in the firm-level analysis. This ratio indicates the higher number of companies with regular trading activity as well as the higher average market capitalization per firm in the Turkish market.

Figure 2: Overview of firms in our sample



5.2. Variables for the market level analysis

In the market level analysis, we use, as described in section 4, four independent variables. For this purpose, we gathered data on protest size as we believe that this variable could have explanatory power for abnormal returns experienced throughout political protests. Due to the absence of reliable data on protest numbers, we used the number of Google search queries on the respective events as a proxy for protest size. In fact, we found that the number of search queries increased with the scale of protests, and thus deemed the data to be an adequate proxy.

Further, we introduce standard variables used in regressions to control for external effects as well as to test for significance on stock returns. These are the World Commodity Index, oil price, and 5-year US Treasury Yields. Emerging markets are often highly export oriented countries with a strong dependence on commodities, as we explained in the respective country sections. Therefore, stock markets may be driven by commodity prices. The oil price is a proxy for the state of the global economy as well as industrial demand, which serves as a further appropriate control variable. Lastly, emerging markets investments economies are driven and dependent on foreign exchange rates and interest rates. Therefore, we include the US 5-year Treasury Yields to control for effects on abnormal returns.

Table 8 provides a detailed overview of the variables used in our market level analysis.

5.3. Variables for the firm level analysis

In the firm level analysis, we use, as described in section 4, eight independent variables. For this purpose, we use trading volume and volatility as explanatory variables. Both represent risk factors of a firm and could be linked to firms' abnormal returns during crises. Similarly, we chose leverage (net debt to shareholders' equity) as an explanatory variable as it represents a proxy for financial risks. With the potential of capital outflow, financing opportunities might be limited and this may cause negative abnormal returns (Chaichalearmmongkol & Chu, 2014). Finally, we chose government ownership as an explanatory variable as existing research indicates a relationship between this variable and firm value (Vermaelen & Eckel, 1986).

In addition, we decided to include control variables: the price-to-book ratio as a valuation metric, the profit margin as a quality metric, and market capitalization as a proxy for firm size in our regression. These variables could affect volatility and trading volume, and thus we use them in our regression to reduce the potential bias. Moreover, we use institutional ownership to control for a potential relationship with government ownership.

All data is extracted from Bloomberg. Data for trading volume and annualized volatility was calculated based on Bloomberg primary data. To ensure that our variables have not been affected by the protests, we use the 90-day average (ending the day before the first event period begins) for

all independent variables. For the two variables pertaining to ownership, we used data from the day before protests began.

Table 9 provides a detailed overview of the variables used in our market level analysis.

Table 8: Overview of variables in the market level analysis

Variable	Source	Description
Protest size	Google Trends	Google Trends³ search of protest-related articles and news. In absence of reliable data on protest size throughout the entire protest periods, we use data from Google Trends as a proxy to estimate protest size. The Google Trends tool allows users to see how many search queries on the Google search engine have been conducted under specific terms that relate to i.e. “Brazil protests” within a certain timeframe or day. For our study, we used data pertaining to search queries that referenced the political protests within the respective country and in the country’s respective major language. This allowed us to effectively capture the size and attention that the protests received. Data from Google Trends is indexed from 0 to 100.
World Commodity Index	Bloomberg	S&P World Commodity index (Bloomberg ticker: SPWISF Index). The World Commodity Index (WCI) is based on traded futures and is a world-production-weighted commodity index including 22 commodities that range from the Agriculture sector to Energy and Metals (Bloomberg, 2016).
Oil price	Bloomberg	WTI Generic Oil Future (Bloomberg ticker: CL1 Comdty). The WTI future reflects the price trends of crude oil known as West Texas Intermediate, or Texas light sweet. Futures are traded at the New York Mercantile Exchange.
US 5-year yield	Bloomberg	US Generic 5-year Government Yield (Bloomberg ticker: USGG5YR Index). The index captures the yield to maturity of US treasury bonds. The rates are based on a basket of Generic United States on-the-run-government bonds which can be found on Bloomberg (Bloomberg, 2016).

³ Google Trends can be accessed under <https://www.google.com/trends/>

Table 9: Overview of variables in the firm level analysis

Variable	Source	Description
Trading Volume	Own calculation based on Bloomberg data	Based on data retrieved from Bloomberg, we calculate trading volume (as a percentage of outstanding shares) that was traded on average per day in the 90 trading day period prior to event period 1.
Volatility	Own calculation based on Bloomberg data	In calculating volatility , use the average of the 90 trading day period prior to event period 1.
Government Ownership	Bloomberg	Government ownership in % of common shares outstanding. This variable describes the percentage shareholding by government institutions in a specific company.
Net Debt to Shareholder Equity	Bloomberg	Net Debt in % of Shareholder Equity. This variable provides information about the balance sheet leverage applied by the companies in the sample. We use the average of the 90 trading day period prior to event period 1.
Institutional Ownership	Bloomberg	Institutional ownership in % of common shares outstanding. This variable describes the percentage shareholding by institutional owners (i.e. professional asset managers, insurance firms, banks) in a specific company.
Market Capitalization	Bloomberg	Market Capitalization (in local currency). The market capitalization is a proxy for the size of the company and this variable is often used in academic research. We use the average of the 90 trading day period prior to event period 1.
Price to Book Ratio (P/B)	Bloomberg	Price to Book Value Ratio. This ratio specifies the market price compared to the book value of equity of a firm. It is a widely used proxy for “value”. We use the average of the 90 trading day period prior to event period 1.
Profit Margin	Bloomberg	The Profit Margin variable is the percentage of net profit over total sales of a company. We use the average of the 90 trading day period prior to event period 1.

5.4. Discussion of Caveats

We appreciate that the effects of intra-state political protests may not only affect firms with domicile in the respective countries, but may also have a significant impact on foreign firms with substantial business interest in one of three countries of our thesis. Since Thailand, Brazil, and Turkey are large emerging market economies, they represent a large percentage of firm sales for a

wide number of global companies. However, due to a lack of data, we experienced difficulty in identifying and sampling such companies at a broad scale.

In addition, for the firm level analysis, several explanatory variables have been calculated as the 90 trading day average prior to the event period to avoid protest-related effects on these. Whilst we believe this is a sensible approach, one may argue that a forward-looking metric may describe the characteristics of a stock better. However, we still believe that historical data can be used as a reasonable estimate.

6. Hypotheses

This section deals with the development of hypotheses related to the effects of political protests in emerging markets on stock returns. These hypotheses are partly derived from previous literature which has been outlined in section 2, and will be tested in the empirical part of this thesis.

6.1. Hypotheses pertaining to the market level

The following three hypotheses pertain to our analysis on a market level. They are either related to the calculation of CARs or to our market level regression. They are as follows:

Hypothesis 1a (H1a): Political protests coincide with negative CARs, which are statistically significant.

Based on the literature outlined in section 2, political uncertainty leads to negative stock returns. Chau et al. (2014) and Jeribi & Fakhfekh (2015) specifically looked at political protests in the Arab world and found that these both led to an increase in political uncertainty and had negative effects on local stock markets. Since our study focuses on political protests in Brazil, Turkey, and Thailand, we expect to obtain similar results for stock returns in those markets.

Hypothesis 1b (H1b): After political protests end, negative effects of protests on stock returns are reversed within 30 days.

Boubaker et al. (2015) found that negative stock returns caused by political uncertainty only had temporary effects on the Egyptian stock market. Therefore, we are also testing for potential reversal effects. While Boubaker et al. (2015) only tested short-term events such as terrorist attacks, political tensions, and government changes, we consider protests lasting for several months in our study. Investors might be more reluctant to invest in a market after such a long period of uncertainty, and political changes implemented after such protests may also take time. Therefore, we choose 30 days as a timeframe to test whether reversal effects occur, even though Boubaker et al. (2015) write that reversal effects happened within four days in Egypt.

Hypothesis 1c (H1c): Protest size can be identified as an explanatory variable for negative CARs.

Based on the previous hypotheses, we expect negative CARs to increase with the size of protests: the more people participate in a protest, the stronger the negative effects on stock markets.

6.2. Hypotheses pertaining to the firm level

In addition to the hypotheses that relate to our market level analysis, we also have four hypotheses pertaining to our firm level regressions. These are as follows:

Hypothesis 2a (H2a): Firms with high trading volumes show more negative abnormal returns than firms with low trading volume during periods of protests

We expect firms with high trading volumes prior to protests to show larger abnormal returns during protests. On the one hand, we believe that such stocks would still show higher trading activity during protests and thus could be sold off more easily. On the other hand, we would expect firms with low trading volumes to have more long-term oriented investors who would keep their stockholding even during times of crisis.

Hypothesis 2b (H2b): Firms with high stock volatility prior to protests show larger negative abnormal returns during protests than firms with lower stock volatility.

Perceived risk of an equity security is reflected in the securities' volatility. Girard and Kıymaz (2009) find that Turkish stocks show higher volatility than stocks of countries that joined the EU and the authors relate this to the higher economic and political risk. We hypothesize that investors already price the political risk and therefore, firms with higher volatility are more prone to political instability. When such events materialize (as in the events that we study in this analysis), stocks that are particularly vulnerable to political instability are expected to drop in value, or demand an even higher risk premium, both leading to more negative abnormal returns during the event periods/protest periods.

Hypothesis 2c (H2c): Firms in which the government has a large stake show larger negative abnormal returns during protests than firms with no shareholding from government institutions.

We expect that government ownership has a negative effect on stock returns during times of political protests. On the one hand, investors could see government involvement as a risk factor by itself as governments are active parties in protests. As governments are often involved in business and funding decisions of companies they hold a stake in, protests may lead to profitable projects being halted or postponed, thus lowering the market value of the firm. On the other hand,

governments could decide to divest their firm holdings to finance social programs with the intention of curbing protests. In such a case, the stock price might drop significantly, which other stockholders would want to avoid. Lastly, government officials are often directly involved in the decision making processes in these companies and in case of political unrest and uncertainty, investors may require a risk premium for the uncertainty over the future direction of the government-held company.

Hypothesis 2d (H2d): Firms with higher leverage ratios show larger negative abnormal returns during protests than firms with lower leverage ratios.

Higher debt levels are often linked to higher risks due to the costs of financial distress. In fact, for the Thai protests reports have emerged stating that investors are reluctant to provide additional funding to firms while protests are ongoing (Chaichalearmmongkol & Chu, 2014). Political protests are also often interlinked with economic crises, as we discussed in the case of Brazil. In this case, firms particularly dependent on debt financing may have trouble funding their operations or new projects as the risk rises and the economy is at risk to slow down. Equity investors might be aware of such issues, and thus sell shares of firms with high leverage ratios. As a result, we expect these firms to realize larger negative abnormal returns.

7. Empirical Work and Results

This section provides an overview of the results from our empirical work. We start with the main findings for the three countries on a market level. After that, we present and discuss the results from our firm level regressions.

7.1. Market level analysis

In this sub-section, we discuss our findings of CARs on a country and sectorial level. We further present results from our market level regressions. Finally, we discuss our results on a market level and provide interpretation of the observed results.

7.1.1. CAR results on a country level

The calculation of cumulative abnormal returns for the Thai, Brazilian and Turkish markets provides the following two main findings:

- **H1a:** Our data samples containing Turkish and Brazilian firms support our hypothesis that negative CARs and political protests coincide, whereas the Thai sample does not

- **H1b**: Only our data sample containing Turkish firms supports our hypothesis that a reversal process starts when the crisis has been resolved (*Crisis Resolved* period 5). The data sets for the Thai and Brazilian markets indicate that the reversal process may set in at an earlier stage and therefore suggests that investors already anticipate a crisis resolution

Table 10: Average CARs for the event periods at a country level

	<i>Period 1</i>	<i>Period 2</i>	<i>Period 3</i>	<i>Period 4</i>	<i>Period 5</i>	<i>Number of Firms</i>
Thailand	-2.04%*	-7.49%*	12.47%*	14.97%*	11.68%*	437
Brazil	-6.13%*	-4.27%*	-15.51%*	4.16%*	2.28%	201
Turkey	0.97%*	-1.27%*	-6.82%*	-14.01%*	9.37%*	364

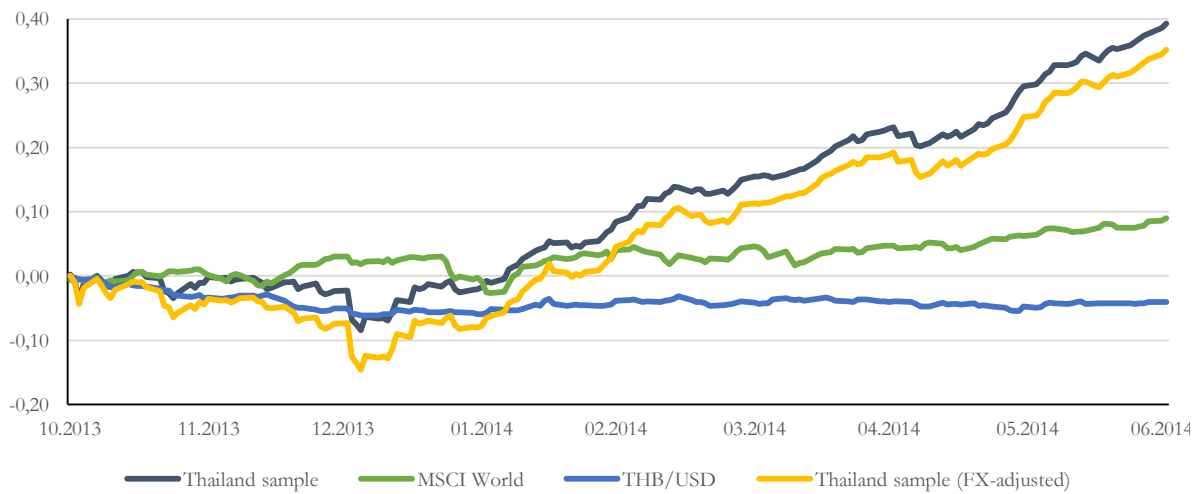
Note: Asterisk indicates statistical significance at a confidence level of 95%.

Above results suggest that negative CARs start to appear with the *Early Stage* of the crisis (although we find slightly positive returns in Turkey). These negative abnormal returns increase in size in period 2 as the protests expand, where we find statistically significant negative CARs across all three countries. As illustrated in Table 10 and Figure 3, we found statistically significant negative CARs in the main protest period (i.e. period 3) only in Brazil and Turkey (in addition to figure 3, we refer to Appendices 2, 4, and 6 for a more detailed illustration of CARs across all event periods). However, for Thailand, we did not find statistically significant negative CARs; instead our empirical analysis revealed statistically significant positive CARs for period 3. This is in direct contrast to the results of the other two countries, yet a possible explanation may be found in country-specific factors. In terms of our **hypothesis 1a**, in which we argue that negative CARs and political protests coincide, we find support from our results for Brazil and Turkey. The results in Thailand do not support **hypothesis 1a**.

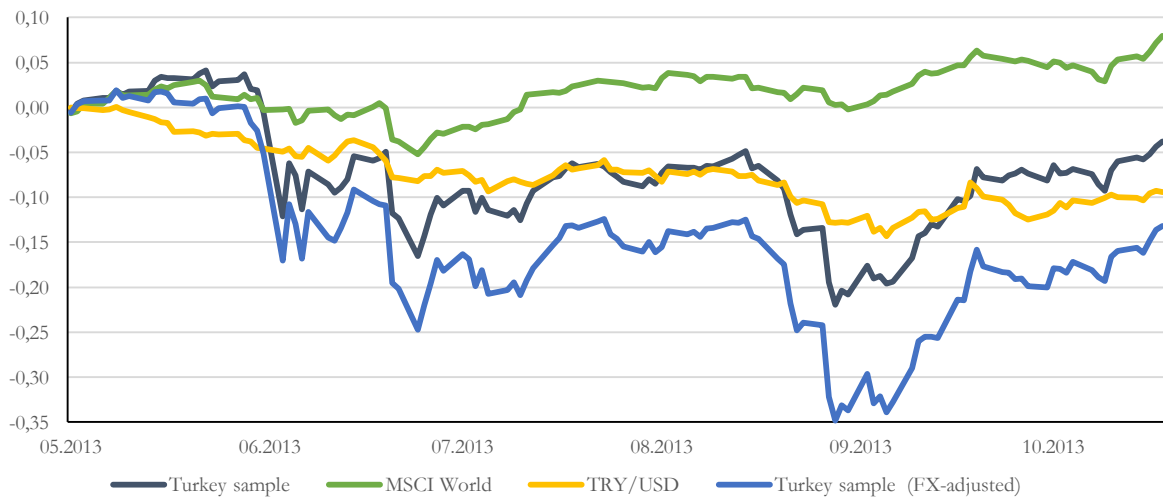
A reversal of negative CARs can be observed in all three countries. While the reversal in Thailand already occurred during the *Crisis Peak* period (period 3) and continued even beyond the horizon of the *Resolution Process* and *Crisis Resolved* periods (period 4 and 5), a statistically significant reversal in Brazil can be seen during the *Resolution Process* (period 4). In contrast, in Turkey, we only find the reversal process to set in after protests and the crisis has been resolved (i.e. in period 5). Therefore, results from Turkey would be in line with our **hypothesis 1b**, in which we assumed a reversal process to set in after protests have ended. While we also observe a reversal of CARs in Thailand and Brazil, these already occur during or at the end of the protests, and not as **hypothesis 1b** would have assumed at a later stage.

Figure 3: Event horizons, firm sample returns, and currency returns

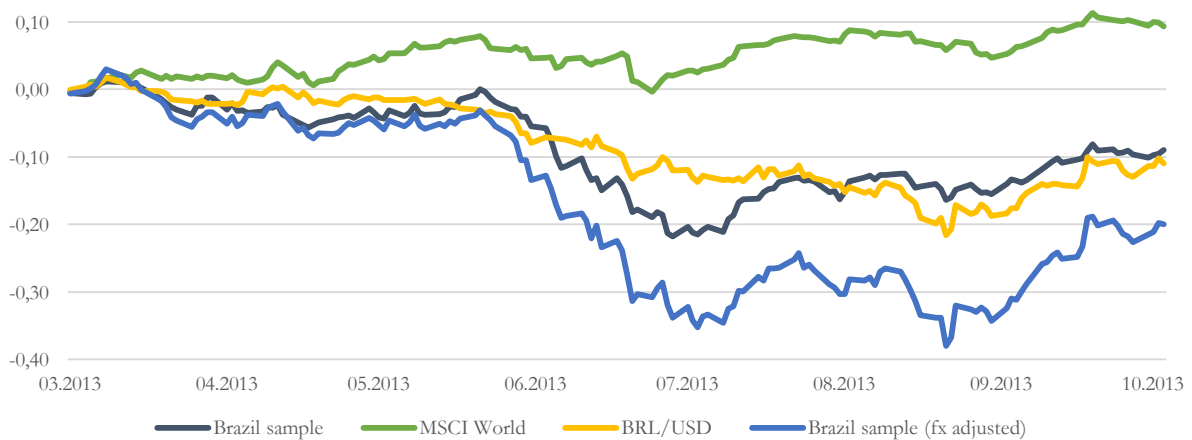
Thailand event period (log returns indexed 31 October 2013)



Turkey event period (long returns indexed 1 May 2013)



Brazil event period (indexed to 1 on 1 March 2013)



Description: These graphs illustrate the returns of the firm samples on market level for each country. In addition, the respective foreign exchange development during the event periods is shown, in order to illustrate the returns which an unhedged foreign investor may have incurred during the event periods.

7.1.2. CAR results on a sectorial level

In addition to CARs across countries, we obtained CAR results on a sectorial level for each of the individual country samples (cf. Tables 11-13 and Appendices 3, 5, and 7). These results highlight several interesting findings across sectors. However, there have been no sectorial patterns that we could describe as consistent across all three countries. In Thailand, we find the largest statistically significant negative CARs in period 2 across the Financials and Telecommunications sectors, two sectors that have a large percentage of domestic operations compared to a generally more export-oriented Thai economy. In Brazil, as equity markets lose significant value in period 3, Industrials, Energy, and Consumer Discretionary lead the declines. In Turkey, we find less dispersion of CARs across sectors. This highlights that equity markets have sold off generally during the crisis period without regards to sector-specific characteristics.

Table 11: CARs for the Thai event periods at a country and sector level

	Period 1	Period 2	Period 3	Period 4	Period 5	Number of Firms	
Average CAR on Country Level	-2.04%*	-7.49%*	12.47%*	14.97%*	11.68%*	437	
Sectors	Consumer Discretionary	-1.86%	-8.17%*	12.07%*	15.85%*	9.48%*	69
	Consumer Staples	1.31%	-0.93%	8.89%*	16.48%*	8.06%*	35
	Energy	0.55%	-7.88%	10.16%*	12.45%*	5.26%	17
	Financials	-1.83%	-9.33%*	11.63%*	14.14%*	12.87%*	109
	Health Care	-0.04%	-4.72%	8.26%	27.36%*	17.51%*	10
	Industrials	-3.77%*	-7.41%*	15.55%*	16.46%*	15.76%*	91
	Information Technology	-3.69%	-7.25%*	14.23%*	9.56%	7.17%	34
	Materials	-1.89%	-6.83%*	12.77%*	14.41%*	13.07%*	55
	Telecommunication	-7.27%	-15.06%*	9.42%	7.92%	-2.03%	8
	Utilities	1.37%	-6.94%	11.65%	18.54%*	13.12%*	9

Note: Asterisk indicates statistical significance at a confidence level of 95%.

Table 12: CARs for the Brazilian event periods at a country and sector level

	Period 1	Period 2	Period 3	Period 4	Period 5	Number of Firms	
Average CAR on Country Level	-6.13%*	-4.27%*	-15.51%*	4.16%*	2.28%	201	
Sectors	Consumer Discretionary	-6.70%*	-4.63%*	-20.28%*	-0.13%	3.95%	42
	Consumer Staples	-8.83%*	-0.97%	-13.89%*	1.64%	3.07%	20
	Energy	-13.90%	-5.42%	-38.64%*	13.82%	-12.07%	11
	Financials	-6.14%*	-5.25%*	-13.63%*	-2.51%	4.59%	37
	Health Care	-4.31%	-3.22%	-7.03%	4.47%	-1.55%	7
	Industrials	-4.44%	-2.77%	-14.66%*	4.39%	-1.52%	30
	Information Technology	-11.08%	-8.39%	-10.76%	2.40%	1.07%	5
	Materials	-7.36%	-12.39%	-10.80%	18.35%*	-0.55%	23
	Telecommunication	-12.57%	-5.50%	-17.19%	16.65%	16.70%	5
	Utilities	2.71%	3.34%	-8.65%*	3.28%	8.27%*	21

Note: Asterisk indicates statistical significance at a confidence level of 95%.

Table 13: CARs for the Turkey event periods at a country and sector level

	Period 1	Period 2	Period 3	Period 4	Period 5	Number of Firms	
Average CAR on Country Level	0.97%*	-1.27%*	-6.82%*	-14.01%*	9.37%*	364	
Sectors	Consumer Discretionary	0.60%	-0.81%	-7.15%*	-12.98%*	9.06%*	83
	Consumer Staples	3.52%*	-3.18%*	-3.33%*	-17.53%*	10.60%*	39
	Energy	3.60%	-11.91%*	-4.82%	-19.10%*	11.84%	5
	Financials	1.17%	-0.53%	-9.68%*	-12.48%*	9.03%*	91
	Health Care	-3.59%	13.58%	-7.88%	-28.43%	1.27%	4
	Industrials	-0.61%	-1.78%	-4.90%*	-13.88%*	11.41%*	58
	Information Technology	-0.08%	-0.84%	-6.29%*	-18.24%*	8.49%*	14
	Materials	1.05%	-0.86%	-5.67%*	-12.46%*	8.12%*	62
	Telecommunication	2.00%	-4.34%	0.01%	-15.50%	13.71%	2
	Utilities	4.07%	-6.70%*	-16.38%*	-21.76%*	7.89%	6

Note: Asterisk indicates statistical significance at a confidence level of 95%.

7.1.3. Market level regression

The OLS regressions on the market level provide the following main finding:

- **H1c:** Our results for the Turkish market indicate that there is a strong link between protest size and abnormal returns at times of protests. For our samples containing Brazilian and Thai data, we could not find support for such a link.

Table 14: Regression results of our market level regression

	<i>Thailand</i>	<i>Brazil</i>	<i>Turkey</i>
protest_size	-0.1022	0.1150	-7.8840*
world_commodity_index	0.0093	0.0030	-0.0057
oil_price	0.0066	0.0503*	-0.0467
US_5-year_yield	-0.7118	-0.4866	-0.0320
constant	-1.5108	-5.4560	6.5205
<i>Number of observations</i>	<i>173</i>	<i>155</i>	<i>123</i>
<i>R-squared</i>	<i>0.0210</i>	<i>0.0612</i>	<i>0.1544</i>
<i>Adj R-squared</i>	<i>-0.0023</i>	<i>0.0362</i>	<i>0.1258</i>

Note: Asterisk and shading indicate statistical significance at a confidence level of 95%. Number of observations refers to the number of days in the event window. This regression was conducted across each country, where each observation represents one trading day and therefore, the number of observation indicates the length of the combined event windows for each country.

In our market-level regressions we aimed to identify explanatory links between the size of protests and abnormal returns. By running this regression for each country separately with data only from the respective country, we found such a link for the Turkish stock market (Table 14). For the

sample comprising data for the Turkish events, our regression resulted in a statistically significant coefficient of -7.88 for protest size. The negative sign suggests that the larger the protests, the lower the CARs (or the more negative the CARs in this case).

For the other two countries, we found no support for our *hypothesis 1c* that protest size is a significant determinant of stock returns at times of protests.

7.1.4. Discussion of market level results

For our samples of Brazilian and Turkish firms, we found that political uncertainty leads to negative abnormal returns. These findings are confirmative of existing literature. However, for Thailand, we found strong positive abnormal returns during the Crisis Peak of protests, which may relate to the peculiarities of the political system in Thailand. With a long history of military coups, research focusing on Thailand even suggest that a coup d'état might be seen favorably by investors and the population as it could be a source of new-found stability (Civilize et al., 2015). An alternative explanation may be that investors had accumulated sufficient knowledge during the Thai protests to anticipate a reversal. The Crisis Peak in Thailand occurred in 2014 whereas the crisis in Brazil and Turkey already occurred during 2013. Both were highly debated events for emerging market investors and that may have allowed these investors to study such events and the applicability of findings to the Thai situation. Such an explanation would be a strong indication that our research topic is highly relevant. However, we were not able to find enough evidence to support this theory.

Despite finding significant negative CARs during the high phase of protests in both Turkey and Brazil, we were only able to identify links between these negative effects and the size of protests in Turkey. While such a link may also exist for Brazil, the quality of available data may not have been sufficient to show such a relationship. For Thailand, our regression result was not surprising: as we found significant positive CARs during the high phase of protests, the lack of a link between CARs and protest size was to be expected.

While results for the negative effects of protests were not fully conclusive across all three countries, the occurrence of reversal effects was. However, reversal effects did not occur at the same protest period in all three countries. While such effects only set in in Turkey after protests had ended, they already occurred during the resolution process in Brazil, and in Thailand already during the main phase of protests. Yet, the general occurrence of reversal effects after periods of political uncertainty is in line with existing research by Kollias et al. (2011) and Boubaker et al. (2015). In our view, reversal effects may indicate that there is no permanent impairment of intrinsic firm value during political protest events. Rather, initially negative CARs may suggest an increase in the risk

premium that investors apply, which is then reversed towards the end of the events, thus resulting in a reversal effect.

On a sectorial level, our results did not show a uniform picture across all three countries. It appears as if there are no common sector-specific effects. This indicates that the degree to which individual sectors are affected by political protests depends very much on the country-specific economic structure. For instance, in Brazil, we found significant negative CARs for the Energy sector, which is a highly regulated sector with government ownership in many companies. For investors, these results imply that country-specific characteristics, such as the degree of regulation of certain sectors, need to be considered when political protests emerge, as those factors could significantly affect the exposure to effects of political protests. The non-uniform results from the sectorial analysis have prompted us to further analyze firm specific characteristics and their effects on abnormal returns in the firm level analysis following in 7.2.

The results of the market level analysis highlight several key aspects of political protests. CAR developments across countries and sectors provide useful insights for investment managers, although our results also suggest that there are country- and crisis-specific characteristics pertaining to these events that cannot easily be captured by empirical models, and therefore need individual consideration for each event of political protests.

7.2. Firm level analysis

In this section, we start with a presentation of the results of regression results across a data set consisting of firms of all three countries. After their evaluation, we move on to describing firm level results for each country separately. We conclude the section with interpreting the findings.

7.2.1. Firm level regression across all three countries

The main findings of our firm-level regression with a sample containing firms of all three countries (cf. Table 15) are as follows:

- **H2a:** Our data sample provides evidence that firms with high trading volume prior to protests exhibit stronger negative CARs during the protest period, but we also find that they show significant positive CARs in periods 4 and 5, indicating a reversal.
- **H2b:** Our data sample does support the hypothesis that high stock price volatility prior to protests is linked to larger negative abnormal returns at times of protests. However, we only find evidence in period 1 and 2, whereas period 3 suggests the opposite.
- **H2c:** Our results provide partial support for the hypothesis that government ownership is linked to negative abnormal returns at times of political protests. While the coefficients

from our firm level regression are negative during the main periods of protests, they lack statistical significance.

- **H2d:** Our sample provides partial support to the hypothesis that firms with high levels of debt show larger negative abnormal returns at times of political protests; however, our regression results lack statistical significance.

Table 15: Regression results across all three countries on a firm level

	<i>Period 1</i>	<i>Period 2</i>	<i>Period 3</i>	<i>Period 4</i>	<i>Period 5</i>
Trading Volume	-0.44167*	-0.94771*	-0.28148*	1.61342*	0.82852*
Annualized Volatility	-0.04203*	-0.09068*	0.11167*	0.09183*	0.05414*
Government Ownership	0.03473	-0.02124	-0.00784*	-0.07135	0.00199
Net Debt to Shareholder Equity	0.00065	-0.00189	-0.00247*	0.00064	0.00430*
<i>Institutional Ownership</i>	0.04349*	0.01559	0.06548*	-0.04160	0.02694
<i>Market Cap</i>	-0.00001	0.00000	-0.00002*	0.00000	-0.00002*
<i>Share Price to Book Value</i>	-0.08327	-0.21600	0.28055*	-0.39756	-0.03223
<i>Profit Margin</i>	0.00008	0.00007	0.00011*	0.00051	0.00003
<i>Constant</i>	-0.00439	-0.00093	-0.02762*	-0.06700	-0.00835
<i>Number of observations</i>	950	950	950	950	950
<i>R-squared</i>	0.0266	0.0527	0.0408	0.0397	0.0344
<i>Adj R-squared</i>	0.0183	0.0446	0.0326	0.0316	0.0262

Note: Asterisk and shading indicate statistical significance at a confidence level of 95%.

For trading volume, we find that higher trading volume prior to protests tends to be linked to negative effects on stock returns in periods 1 to 3. At the same time, we find a significant positive link in periods 4 and 5, during which the protests are getting resolved. In terms of our **hypothesis 2a**, in which we suggested that higher trading volume prior to protests is linked to larger abnormal returns at times of protests, our results strongly suggest that this is the case.

In addition, we find that higher stock price volatility prior to protests is linked to slightly negative effects in the first two periods when political protests begin, whereas there are slightly positive effects in the *Crisis Peak* period (period 3) as well as during the *Resolution Process* (period 4) and in the *Crisis Resolved* period (period 5). While these effects were all statistically significant in our study and support our **hypothesis 2b** that higher stock volatility prior to protests leads to larger negative abnormal returns during protests, we only find such effects in periods 1 and 2, whereas period 3 exhibits a positive coefficient.

Moreover, in our sample of firms across all three countries, we find that government ownership is linked to mildly negative effects on stock returns during the major periods of protests (periods 2-4), and slightly positive effects after the protests have been resolved. This would support our **hypothesis 2c**. However, results for government ownership are not statistically significant and the

effects themselves are relatively small, therefore only limited conclusions suggesting explanatory power of the variable can be drawn based on our sample.

Finally, for the leverage ratio, we found only small effects. In periods 2 and 3, when protests increased and were the largest, a high leverage ratio coincided with larger negative stock returns. While the observed coefficients for leverage would support our *hypothesis 2d* that firms with high debt levels are exposed to larger abnormal returns at times of protests, not all coefficients are statistically significant. Yet, the leverage coefficient for the fifth period may allow for a further hypothesis. As we find a statistically significant positive coefficient in period 5, it could indicate that investors overestimate the negative effects on high-debt firms during protests and thus a larger reversal occurs once the protests end.

7.2.2. Firm level regression for Thailand sample

The main findings of our firm-level regression with a sample containing firms only from the Thai stock market (cf. Table 16) indicate that:

- **H2a:** Our data sample does not provide conclusive results on the assumption that high trading volume prior to protests leads to larger abnormal returns at times of protests.
- **H2b:** Our data sample does not provide sufficient support to the hypothesis that high stock price volatility prior to protests is linked to larger negative abnormal returns at times of protests, however such relationship is present in periods 1 and 2.
- **H2c:** Our results provide strong support for the hypothesis that government ownership is linked to negative abnormal returns at times of political protests. However, we find coefficients in our firm level regression that are negative during all event periods, indicating that there are negative effects at all times.
- **H2d:** Our sample provides support for the hypothesis that firms with high levels of debt show larger negative abnormal returns at times of political protests.

For trading volume, our regression results suggest a significant negative effect during the first two periods of the protests in Thailand, for which we also discovered negative CARs. This would support our *hypothesis 2a* that firms with high trading volumes are exposed to larger abnormal returns than firms with low trading volume. However, results for periods 3 to 5 are not quite conclusive as we find both positive and negative coefficients despite only finding statistically significant positive CARs in these periods.

Table 16: Regression results for Thailand at a firm level

	<i>Period 1</i>	<i>Period 2</i>	<i>Period 3</i>	<i>Period 4</i>	<i>Period 5</i>
Trading Volume	-1.60538*	-5.89903*	1.77634*	-2.45440	0.68358
Annualized Volatility	-0.01991	-0.04343	0.10817*	0.08486	0.09445*
Government Ownership	-0.01980	-0.07721	-0.02757*	-0.08304	-0.09283
Net Debt to Shareholder Equity	0.00197	-0.00152	-0.00356*	0.00536	0.00931*
<i>Institutional Ownership</i>	-0.01975	-0.09096	0.07591*	0.00420	-0.05731
<i>Market Cap</i>	0.00000	0.00000	-0.00002*	0.00000	-0.00001
<i>Share Price to Book Value</i>	-0.07770	-0.49801*	-0.08358*	-0.51050	-0.51925*
<i>Profit Margin</i>	-0.00077	-0.00336	0.00081*	-0.00290	0.00077
<i>Constant</i>	-0.20262	-0.81236	7.62320*	14.12684*	9.21466*
<i>Number of observations</i>	425	425	425	425	425
<i>R-squared</i>	0.0449	0.2256	0.0998	0.0243	0.0890
<i>Adj R-squared</i>	0.0265	0.2107	0.0825	0.0056	0.0714

Note: Asterisk and shading indicate statistical significance at a confidence level of 95%.

Furthermore, for annualized volatility, we find similar results as in our sample across all three countries. In the first two periods, we find mildly negative and statistically insignificant coefficients, whereas periods 3 and 5 show statistically significant positive coefficients. For Thailand, this would indicate that stocks with high volatility prior to the crisis tend to have a stronger performance after investors regain confidence in the market (i.e. the stock market displays positive abnormal returns). However, in terms of our **hypothesis 2b** that high stock price volatility prior to protests is linked to larger negative abnormal returns at times of protests, we thus do not find sufficient support in our sample.

In addition, our results from the Thailand sample provide support for **hypothesis 2c**, which suggested that government-owned firms show larger negative abnormal returns at times of political protests. In our firm-level regression we find negative coefficients for all periods during which protests occur. However, we also find a negative coefficient for the post-protest period, indicating that government-owned firms in Thailand might underperform at all times and not only during times of protests.

For leverage, our results are also similar to the results in our sample across all three countries. We find that high levels of leverage coincide with negative returns during the main periods of protests (periods 2 and 3). Thus our **hypothesis 2d** on the effects of leverage finds support in the sample comprising firms of the Thai stock market. Nonetheless, only the coefficient for the third period is statistically significant.

7.2.3. Firm level regression for Brazil sample

The main findings of the firm-level regression with a sample containing firms only from the Brazilian stock market (cf. Table 17) suggests that:

- **H2a:** Our data sample provides strong support to the hypothesis that high trading volume prior to protests leads to larger abnormal returns at times of protests. However, we also find such a link for the period when the crisis has already been resolved, which is not fully conclusive.
- **H2b:** Our data sample does not support the hypothesis that high stock price volatility prior to protests is linked to larger negative abnormal returns at times of protests.
- **H2c:** Our results do not provide support for the hypothesis that government ownership is linked to negative abnormal returns at times of political protests.
- **H2d:** Our sample provides support for the hypothesis that firms with high levels of debt show larger negative abnormal returns at times of political protests.

Table 17: Regression results for Brazil at a firm level

	<i>Period 1</i>	<i>Period 2</i>	<i>Period 3</i>	<i>Period 4</i>	<i>Period 5</i>
Trading Volume	-14.32968*	-4.76123	-22.74955*	13.27187*	-10.74127*
Annualized Volatility	-0.09814	0.08634	0.14157*	0.59395*	0.19540
Government Ownership	0.10043	0.03887	0.00339*	-0.08950	0.08764
Net Debt to Shareholder Equity	0.00715	-0.02659*	-0.01525*	-0.01694	-0.01068
<i>Institutional Ownership</i>	0.09377*	0.06156	0.13562*	-0.07927	0.11844*
<i>Market Cap</i>	-0.00001	0.00001	0.00001*	0.00010*	-0.00001
<i>Share Price to Book Value</i>	0.21063	-0.11516	0.29387*	-0.76494*	0.33204
<i>Profit Margin</i>	-0.00990*	0.01140*	-0.00630*	0.01414*	0.00452
<i>Constant</i>	-4.50701	-6.86582	-19.10562*	-15.04260*	-7.84808
<i>Number of observations</i>	178	178	178	178	178
<i>R-squared</i>	0.1573	0.1770	0.2033	0.3032	0.0872
<i>Adj R-squared</i>	0.1174	0.1381	0.1656	0.2702	0.0440

Note: Asterisk and shading indicate statistical significance at a confidence level of 95%.

During the first three periods we find negative coefficients for trading volume which are large in magnitude. For the fourth period, when we also find a reversal of negative CARs on the Brazilian stock market, trading volume appears to have a positive link with stock returns. These results are in support of our **hypothesis 2a** that high trading volume prior to protests coincides with larger abnormal returns during protests. However, we also find a significant positive coefficient during the resolution process when protests are still ongoing (period 4). Therefore, our results in terms of **hypothesis 2a** are inconclusive.

For volatility, we did not find fully conclusive results. Coefficients for volatility are positive in all periods apart from the first, despite finding negative CARs in the first three periods. This does not support our *hypothesis 2b* that high stock price volatility prior to protests is linked to larger negative abnormal returns at times of protests.

In addition, for government ownership, we find positive coefficients both during the protests (periods 1-3) and after the crisis has been resolved (period 5), whereas a negative coefficient can be found during the resolution process (period 4). These results do not support our *hypothesis 2c* that government ownership has negative stock market effects during protests. However, our results would also not support the opposite, especially as most of the period-specific coefficients for government ownership are not statistically significant.

With regards to *hypothesis 2d*, we find that higher leverage leads to negative results in periods 2 and 3, which is confirming our hypothesis. We also find such results in period 4 and 5, although the coefficients are smaller and non-significant.

7.2.4. Firm level regression for Turkey sample

Based on our firm-level regression with a sample containing firms only from the Turkish stock market (cf. Table 18), we find that:

- *H2a*: Our data sample does not provide sufficient support to the hypothesis that high trading volume prior to protests leads to larger abnormal returns at times of protests.
- *H2b*: Our data sample does not support the hypothesis that high stock price volatility prior to protests is linked to larger negative abnormal returns at times of protests.
- *H2c*: Our results provide strong support for the hypothesis that government ownership is linked to negative abnormal returns at times of political protests.
- *H2d*: Our sample provides strong support for the hypothesis that firms with high levels of debt show larger negative abnormal returns at times of political protests.

The regression results at a firm level do, in contrast in Thailand and Brazil, not indicate that there is a link between trading volume prior to protests and stock returns during political protests. We find negative effects in the first three periods, during which the protests began and escalated, and during which we also find negative CARs on the Turkish stock market. However, these results are only statistically significant in the third period. In the fourth period, during which our analysis still showed large negative CARs for the Turkish market, we find a statistically significant positive coefficient. Therefore, we do not find sufficient support for our *hypothesis 2a* on the relation between trading volume and abnormal returns.

Table 18: Regression results for Turkey at a firm level

	<i>Period 1</i>	<i>Period 2</i>	<i>Period 3</i>	<i>Period 4</i>	<i>Period 5</i>
Trading Volume	-0.27247	-0.50725	-0.40890*	1.95572*	0.96968*
Annualized Volatility	-0.01710	-0.01359	0.11798*	0.10277	0.00244
Government Ownership	0.02476	-0.03776	-0.02442*	-0.05730	0.00102
Net Debt to Shareholder Equity	0.00122	-0.00040	-0.00106*	-0.00242	0.00441
<i>Institutional Ownership</i>	0.03677	0.06692	0.03798*	-0.00229	0.00843
<i>Market Cap</i>	0.00012	-0.00034*	-0.00038*	-0.00031	-0.00017
<i>Share Price to Book Value</i>	-0.26013	-0.01600	0.49891*	0.28511	0.06273
<i>Profit Margin</i>	-0.00001	-0.00002	0.00011*	0.00026	-0.00005
<i>Constant</i>	2.00542	-0.12098	-11.32692*	-19.76841*	8.12537*
<i>Number of observations</i>	347	347	347	347	347
<i>R-squared</i>	0.0367	0.0348	0.0509	0.0791	0.0414
<i>Adj R-squared</i>	0.0139	0.0120	0.0284	0.0573	0.0187

Note: Asterisk and shading indicate statistical significance at a confidence level of 95%.

Our results for the volatility coefficients resemble those in our sample that comprises all countries as well as our sample that comprises all Thai firms. We find negative coefficients in the first two periods and positive coefficients in the final three. However, with the Turkish stock market having negative CARs in the first four periods, these results do not qualify as evidence to our **hypothesis 2b** that high volatility prior to protests leads to higher negative abnormal returns during protests.

In addition, our regression coefficients indicate that government ownership and stock returns have a negative link at times of protests. We find negative coefficients for all periods during which protests occur (periods 1-4) and a positive coefficient for the post-crisis period (period 5). This provides strong support to our **hypothesis 2c**, which suggested that government ownership has negative effects on stock returns at times of political protests.

Finally, we find support for the **hypothesis 2d** that firms with high levels of debt show larger negative abnormal returns at times of political protests. We find negative coefficients for leverage during the main protests periods (period 2-4), suggesting there is a negative link between leverage and returns. However, only the coefficient for period 3 is statistically significant.

7.2.5. Discussion of firm level results

Our regression results provide a number of insights in terms of potential explanatory links between negative abnormal returns during protests and the variables chosen in our regressions. We focus our discussion mainly on the results obtained across all three countries given the importance of common findings for future crises.

Firms with higher trading volume prior to protests exhibit stronger negative CARs during the protest period. This may be explained, as outlined in our hypothesis, by institutional investors

finding it easier to sell stocks very quickly after the protests when they have higher trading volume. Stocks with high trading volume may also be stocks known as *trading stocks*, which have an ownership base more related to short-term holders. These holders may be more willing to sell of shares quickly during a protest. Likewise, we believe that the reversal effect in these stocks suggests that investors can more quickly re-enter the market once the protests decrease in size and get resolved, therefore, there is a significant reversal effect.

We find similar support for ***hypothesis 2b*** that stocks with higher volatility exhibit more negative results. We believe that stocks that already have higher volatility before the events are perceived as even riskier when political protests occur. The risk premium for these stocks may even increase, leading to negative returns in the early stages of the protest. However, as we do not find such a relationship starting from period 3, it may appear that investors feel more confident with this risk after an early *shock*, and therefore we do not see a further deterioration of returns.

In terms of government ownership, our results suggest that there may be a link that indicates lower returns for government-owned public entities during the early stages of protests. There may be several explanations for such a relationship. Increased uncertainty over the role of the government shareholder in these companies increases corporate governance risk. Also, investors may fear that the government could sell its stake in order to finance measures that are intended to address the protests. This would create a share overhang and could cause downside pressure on the stock price. Our results regarding government ownership on firm leave room for interpretation and we think that the dispersion of results may be due to the diverse ways of government involvement, i.e. in one case an investor may perceive a government shareholder as positive in a crisis, whereas in other firms, such a relationship may be seen as negative.

Regarding the leverage ratio, our hypothesis finds directional support, but we did not find fully conclusive results across all three countries as we could not find statistical significance in all protest periods. We conclude that leverage may be a less important firm characteristic to the majority of investors in a political crisis.

Several of our results provide interesting insights into firm-specific effects of political protests. These results are adding to existing literature, and provide useful data points for the investment community.

8. Summary and concluding remarks

The aim of this research project was to identify whether political protests in emerging markets have an effect on stock returns. Consistent with previous research on the effects of political uncertainty, we found that political protests in Brazil and Turkey coincided with negative abnormal returns on the local stock markets. The magnitude of these abnormal returns was higher as the intensity of protests increased. After the end of the protests, a partial reversal of the negative effects occurred. In contrast, the effects that we found for Thailand were inconclusive. While there were significant negative CARs in the initial stages of the protests, a reversal occurred at a time when protest numbers were still increasing and clashes between police and protesters happened. We find evidence that negative CARs increase with protest size in one of the three studied countries.

Based on our firm level regressions, we aimed to identify firm characteristics affecting stock performance at times of political protests. We find that companies that exhibit higher trading volume and higher volatility prior to the event, incur higher negative abnormal returns during the main protest periods. A similar link can be identified for government ownership and negative abnormal returns, even though evidence is not as strong as for the other two variables. While political protests might be distinct in nature, we find evidence across three different event periods in different countries, thus suggesting that investors may draw conclusions for future crises based on these results.

Effects of political protests in emerging markets are important to consider for both global financial investors and managers. In a globalizing economy, political movements can affect returns even of foreign, well-diversified investors, while managers of multi-national corporations have to take the effects of such protests into account in their decisions.

The topic of this thesis has been widely disregarded in literature until today. Future research could investigate the reasons for discrepancies between the effects in affected countries, and thus allow for further recommendations for future crises. A larger sample of firms and countries could provide more information on the existence of systematic effects. As similar protests occurred in Hong Kong and Pakistan in 2014, and in Macedonia and Venezuela in 2015, political movements remain a very important issue for global investors and managers. In our case, protests in all three countries started in response to allegations of cronyism and corruption, and then extended to a wider field of social problems due to general dissatisfaction with the political system. In future conflicts, investors could thus anticipate such events and abnormal returns if they observe such dissatisfaction.

References

- ABC News. (2014, May 23). *Timeline: Events in the lead-up to Thailand's political unrest*. Retrieved January 7, 2016, from ABC News: <http://www.abc.net.au/news/2014-02-04/timeline-of-the-lead-up-to-thailands-political-unrest/5234094>
- Agency, C. I. (2016, 1 31). *Central Intelligence Agency*. Retrieved from <https://www.cia.gov/library/publications/the-world-factbook/geos/br.html>
- Amnesty International. (2013, October 2). *Turkey accused of gross human rights violations in Gezi Park protests*. Retrieved from Amnesty International: <https://www.amnesty.org/en/latest/news/2013/10/turkey-accused-gross-human-rights-violations-gezi-park-protests/>
- AP News. (2014, January 13). <https://asiancorrespondent.com/2014/01/2006-2014-thailand-political-crisis-timeline/>. Retrieved January 12, 2016, from Asian Correspondent: <https://asiancorrespondent.com/2014/05/thailand-coup-live/>
- Balán, M. (2014). Surviving Corruption in Brazil: Lula's and Dilma's Success Despite Corruption Allegations, and its Consequences. *Journal of Politics in Latin America* , 67-93.
- BBC. (2015, August 19). *Thailand profile - timeline*. Retrieved February 1, 2016, from BBC NEWS: <http://www.bbc.com/news/world-asia-15641745>
- Bialkowski, J., Gottschalk, K., & Wisniewski, T. P. (2008). Stock market volatility around national elections. *Journal of Banking & Finance*(32), 1941–1953.
- Bilson, C. M., Brailsford, T. J., & Hooper, V. C. (2002). The explanatory power of political risk in emerging markets. *International Review of Financial Analysis*, 11, 1-27.
- Bloomberg. (2016, April 22). Bloomberg Terminal.
- Boubaker, S., Farag, H., & Nguyen, D. K. (2015). Short-term overreaction to specific events: Evidence from an emerging market. *Research in International Business and Finance*(35), 153-165.
- Boutchkova, M., Molchanov, A., Doshi, H., & Durney, A. (2012). Precarious Politics and Return Volatility. *The Review of Financial Studies*, 25(4), 1111-1154.
- Broun, D., & Derwall, J. (2010). The Impact of Terrorist Attacks on International Stock Markets. *European Financial Management*, 16(4), 585–598. doi:10.1111/j.1468-036X.2009.00502.x
- Bunbonkran, S. (1992). Thailand in 1991: coping with military guardianship. *Asian Survey*(32), 131-139.
- Cable, J., & Holland, K. (1999). Modelling normal returns in event studies: a model-selection approach and pilot study. *European Journal of Finance*, 5(4), 331-341.
- Central Intelligence Agency. (2015). *The World Factbook*. Retrieved November 1, 2015, from Central Intelligence Agency: <https://www.cia.gov/library/publications/the-world-factbook/fields/2012.html>
- Central Intelligence Agency. (2016, 1 30). Retrieved from World Fact Book: <https://www.cia.gov/library/publications/the-world-factbook/fields/2050.html#tu>
- Chaichalearmmongkol, N. (2014, April 23). *History in the Making? A Look Back at Thailand's Coup-Riddled Past*. Retrieved November 2, 2015, from The Wall Street Journal:

<http://blogs.wsj.com/indonesiarealtime/2014/05/23/history-in-the-making-a-look-back-at-thailands-coup-riddled-past/>

Chaichalearmmongkol, N., & Chu, K. (2014, January 8). *Thai Protests Put Foreign Investment at Risk*. Retrieved April 12, 2016, from The Wall Street Journal: <http://www.wsj.com/articles/SB10001424052702303754404579308042512208898>

Chan, Y.-c., & Wei, K. J. (1996). Political risk and stock price volatility: The case of Hong Kong. *Pacific-Basin Finance Journal*(4), 259-275.

Council for National Security. (2006, November 22). *Summary of Council for National Security's "White Paper" detailing Thaksin's alleged wrongdoings*. Retrieved November 2, 2015, from The Nation: http://www.nationmultimedia.com/2006/11/22/headlines/headlines_30019578.php

Cutler, D. (2012, January 14). *TIMELINE - Arab Spring: a year that shook the Arab world*. Retrieved December 4, 2015, from Reuters: <http://in.reuters.com/article/tunisia-revolution-anniversary-idINDEE80C0IT20120113>

Danopoulos, C. P., & Collihan, K. M. (1993). Coup d'Etat Attempt in Trinidad: Its Causes and Failure. *Armed Forces & Society*, 19(3), 435-450.

Diamonte, R. L., Liew, J. M., & Stevens, R. L. (1996, May/June). Political Risk in Emerging and Developed Markets. *Financial Analysts Journal*.

Duffy, G. (2013, June 21). *Brazil unrest: 'Million' join protests in 100 cities*. Retrieved from BBC : <http://www.bbc.com/news/world-latin-america-22992410>

Durrani, A., & Grare, F. (2006, October 17). *Disengaging the Military from Politics in Pakistan*. Retrieved December 1, 2015, from Carnegie - Endowment for Peace: <http://carnegieendowment.org/2006/10/17/disengaging-military-from-politics-in-pakistan/7ue>

Eldor, R., & Melnick, R. (2004). Financial markets and terrorism. *European Journal of Political Economy*, 20, 367-386.

Erb, C. B., Harvey, C. R., & Viskanta, T. E. (1996). Political Risk, Economic Risk and Financial Risk. *Fuqua School of Business Working Paper No. 9606*.

Filho, M. R. (2013, April 22). *Protestos se espalham e reúnem milhares de pessoas; grupos invadem Congresso, e novas manifestações vão aumentar por toda parte*. Retrieved from Jucelino da Luz: <http://www.jucelinaluz.com.br/protestos.htm>

French, K. R., & Fama, E. F. (1993, February). Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33(1), 3-56.

Girard, E., & Kiyamaz, H. (2009). The Risk Factors Associated with Investing in an Emerging Equity Market During the EU . *The International Journal of Business and Finance Research*, Vol. 3, 1-17.

Globo, O. (2013, June 28). <http://g1.globo.com/brasil/linha-tempo-manifestacoes-2013/platb/> <http://g1.globo.com/brasil/linha-tempo-manifestacoes-2013/platb/>. Retrieved from O Globo : <http://g1.globo.com/brasil/linha-tempo-manifestacoes-2013/platb/>

Green, J. (2010). *We Cannot Remain Silent: Opposition to the Brazilian Military Dictatorship in the United States*. Duke University Press.

Gupta, G. (2013, June 18). *Brazil's Protests: Social Inequality and World Cup Spending Fuel Mass Unrest*. Retrieved from Time: <http://world.time.com/2013/06/18/brazils-protests-social-inequality-and-world-cup-spending-fuel-mass-unrest/>

- Hürriyet Daily News. (2013, June 6). *Timeline of Gezi Park Protests*. Retrieved from Hürriyet Daily News: <http://www.hurriyetdailynews.com/timeline-of-gezi-park-protests-.aspx?pageID=238&nID=48321&NewsCatID=341>
- Huang, H.-H., Chan, M.-L., Huang, I.-H., & Chang, C.-H. (2011). Stock price volatility and overreaction in a political crisis: The effects of corporate governance and performance. *Pacific-Basin Finance Journal*, 19, 1-20.
- IMF. (2015). *Population estimates*. Retrieved May 1, 2016, from International Monetary Fund: <http://www.imf.org/en/Data>
- IMF. (2016). *Report for Selected Countries and Subjects*. Retrieved May 1, 2016, from International Monetary Fund: <http://www.imf.org/external/pubs/ft/weo/2016/01/weodata/index.aspx>
- International Monetary Fund*. (2016, 5 2). Retrieved from World Economic Outlook Database April 2016: <http://www.imf.org/external/pubs/ft/weo/2016/01/weodata/weoselser.aspx?c=578&t=1>
- Jeribi, A., Fakhfekh, M., & Jarboui, A. (2015). Tunisian revolution and stock market volatility: evidence from FIEGARCH model. *Managerial Finance*, 41(10), 1112 - 1135.
- Kelley, M. B. (2013, 12 27). *A 2-Minute Guide To The Crisis In Turkey That Sent Markets Tanking And Put The Government In Its Weakest Position Yet*. Retrieved from Business Insider: <http://www.businessinsider.com/recap-of-corruption-scandal-in-turkey-2013-12>
- Kim, H. Y., & Mei, J. (1994, December). Political Risk and Stock Returns: The Case of Hong Kong. *NYU Working Paper*(FIN-94-039).
- Kollias, C., Papadamou, S., & Stagiannis, A. (2011). Terrorism and capital markets: The effects of the Madrid and London. *International Review of Economics and Finance*, 20, 532-541.
- Lehkonen, H., & Heimonen, K. (2015). Democracy, political risks and stock market performance. *Journal of International Money and Finance*. doi:10.1016/j.jimonfin.2015.06.002
- Letsch, C. (2013, September 30). *Turkish PM unveils reforms after summer of protests*. Retrieved from The Guardian: <http://www.theguardian.com/world/2013/sep/30/turkish-pm-erdogan-reforms>
- Li, J., & Born, J. A. (2006). Presidential election uncertainty and common stock returns in the United States. *Journal of Financial Research*, 4(29), 609–622.
- MacKinlay, C. (1997, March). Event Studies in Economics and Finance. *Journal of Economic Literature*, XXXV, 13-39.
- Maisirikrod, S. (2007). Learning from the 19 September coup: advancing Thai-style democracy? . *Southeast Asian Affairs*(34), 340-359.
- Martell, R., & Karolyi, A. (2006). Terrorism and the Stock Market. *Unpublished paper*. doi:10.2139/ssrn.823465
- Mikami, S., & Inoguchi, T. (2008). Legitimacy and effectiveness in Thailand, 2003–2007: perceived quality of governance and its consequences on political beliefs. *International Relations Asia Pacific*, 8(3), 279-302.
- Nicholls, S., Leon, H., & Sergeant, K. (2000). Testing volatility on the Trinidad and Tobago Stock. *Applied Financial Economics*, 10(2), 207-220.

- Pantzalis, C., Stangeland, D. A., & Turtle, H. J. (2000). Political elections and the resolution of uncertainty: The international evidence. *Journal of Banking & Finance*(24), 1575±1604.
- Pastor, L., & Veronesi, P. (2012, August). Uncertainty about Government Policy and Stock. *The Journal of Finance*, 67(4), 1219–1264.
- Pastor, L., & Veronesi, P. (2013, December). Political Uncertainty and Risk Premia. *Journal of Financial Economics*, 110(3), 520–545.
- Pastor, L., Kelly, B. T., & Veronesi, P. (2015, July 12). The Price of Political Uncertainty: Theory and Evidence from the Option Market. *Fama-Miller Working Paper*.
doi:dx.doi.org/10.2139/ssrn.2356588
- Peel, M. (2015, May 14). *Hard economics hit Southeast Asia consumer dream*. Retrieved November 3, 2015, from Financial Times: <http://www.ft.com/intl/cms/s/0/77ed3834-f859-11e4-962b-00144feab7de.html>
- Perotti, E. C., & van Oijen, P. (2001). Privatization, political risk and stock market development in emerging economies. *Journal of International Money and Finance*, 20, 43-69.
- Reshetar, G., Chesney, M., & Karaman, M. (2011). The impact of terrorism on financial markets: An empirical study. *Journal of Banking & Finance*, 35, 253–267.
- Reuters. (2007, May 22). *FACTBOX: Brazil's political corruption scandals*. Retrieved from Reuters.com: <http://www.reuters.com/article/us-brazil-corruption-factbox-idUSN2242608620070522>
- Sorokina, N., Booth, D. E., & Thornton, J. E. (2013). Robust Methods in Event Studies: Empirical Evidence and Theoretical Implications. *Journal of Data Science*, 11, 575-606.
- The Economist. (2006, September 21). *Old soldiers, old habits*. Retrieved November 2, 2015, from The Economist: <http://www.economist.com/node/7944306>
- The Inquirer. (2014, February 3). *Timeline: Key dates in Thai political crisis*. Retrieved January 10, 2016, from The Inquirer: <http://newsinfo.inquirer.net/573052/timeline-key-dates-in-thai-political-crisis>
- The Stock Exchange of Thailand*. (2016, 5 2). Retrieved from <http://marketdata.set.or.th/mkt/investortype.do>
- Thepgrampanat, P. (2008, January 19). *Thaksin-backed party forms new Thai coalition government*. Retrieved November 2, 2015, from Reuters: <http://www.reuters.com/article/2008/01/19/us-thailand-politics-idUSBKK18173220080119>
- Turkish Statistical Institute*. (2016, 2 1). Retrieved from [tuik.gov.tr](http://www.tuik.gov.tr): <http://www.tuik.gov.tr/jsp/hata/body/hata.jsp>
- United Nations. (2016, 5 2). Retrieved from Human Development Reports: <http://hdr.undp.org/en/countries/profiles/THA>
- Valor. (2013, June 21). *Protestos com mais de 1 milhão no Brasil ocupam jornais no exterior*. Retrieved from Valor: <http://www.valor.com.br/politica/3169966/protestos-com-mais-de-1-milhao-no-brasil-ocupam-jornais-no-exterior>
- Vermaelen, T., & Eckel, C. C. (1986, October 1). Internal Regulation: The Effects of Government Ownership on the Value of the Firm. *Journal of Law and Economics*, 29(2), 388.

Voth, H.-J. (2002, February). Stock Price Volatility and Political Uncertainty: Evidence from the Interwar Period. *MIT Department of Economics Working Paper*(02-09).

Wang, J., Chau, F., & Deesomsaka, R. (2014). Political uncertainty and stock market volatility in the Middle East and North African (MENA) countries. *Journal of International Financial Markets, Institutions & Money*, 28, 1-19.

Weyland, K. (1993). The Rise and Fall of President Collor and Its Impact on Brazilian Democracy. *Journal of Interamerican Studies and World Affairs*, 1-37.

Weyland, K. (1993). The Rise and Fall of President Collor and Its Impact on Brazilian Democracy. *Journal of Interamerican Studies and World Affairs*, 1-37.

Wongchoti, U., Civilize, S., & Young, M. (2015). Military regimes and stock market performance. *Emerging Markets Review*, 22, 76-85.

Wooldridge, J. M. (2009). *Introductory Econometrics* (4th ed.). South-Western.

World Bank. (2016, 2 1). Retrieved from <http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?page=1>

World Bank Group. (2015a). *Global Economic Prospects*. Retrieved November 1, 2015, from World Bank Database: <http://databank.worldbank.org/data/reports.aspx?source=global-economic-prospects>

World Bank Group. (2015b, October). *Thailand: Country Overview*. Retrieved November 3, 2015, from The World Bank: <http://www.worldbank.org/en/country/thailand/overview#1>

World Bank Group. (2015c). *World DataBank: World Development Indicators*. Retrieved November 3, 2015, from The World Bank: <http://databank.worldbank.org/data/reports.aspx?source=2&country=THA&series=&period=>

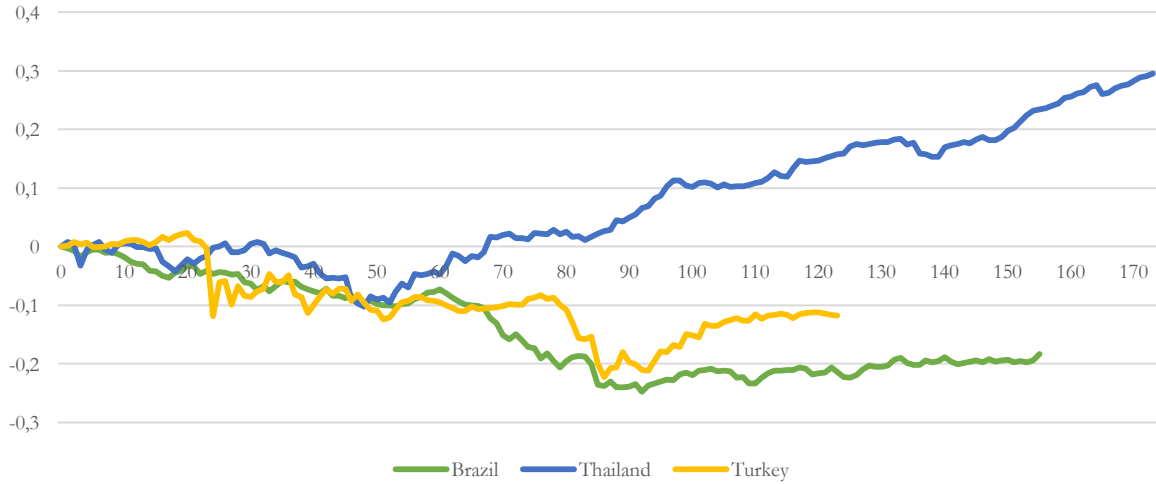
Yuvejwattana, S. (2015, 2 2). *Bloomberg*. Retrieved from <http://www.bloomberg.com/news/articles/2015-02-02/thailand-s-unemployment-rate-is-a-ridiculously-low-0-6-here-s-why>

Zach, T. (2003). Political Events and the Stock Market: Evidence from Israel. *International Journal of Business*, 8(3). doi:dx.doi.org/10.2139/ssrn.420242

Zaidi, S. (2009). Criticizing democracy or criticizing government? *Economic and Political Weekly*, 44(9), 8-9.

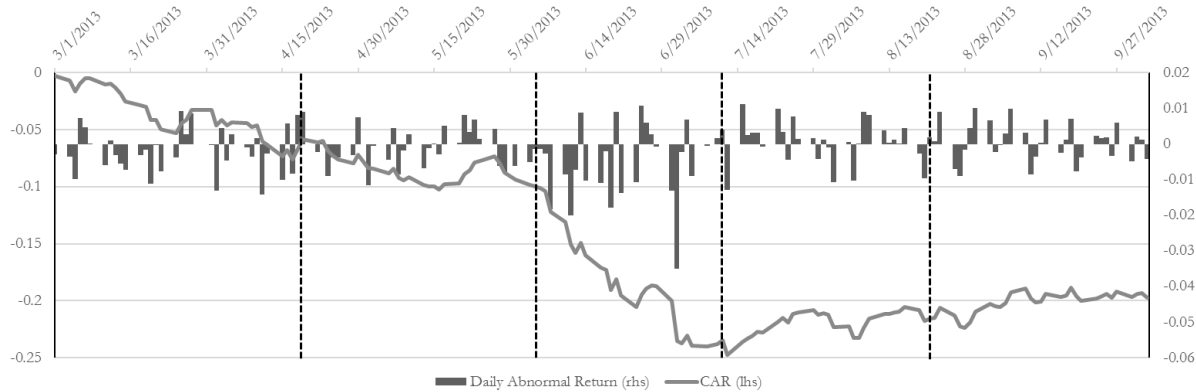
Appendix

Appendix 1: CAR results for Brazil, Turkey, and Thailand, across the entire event periods



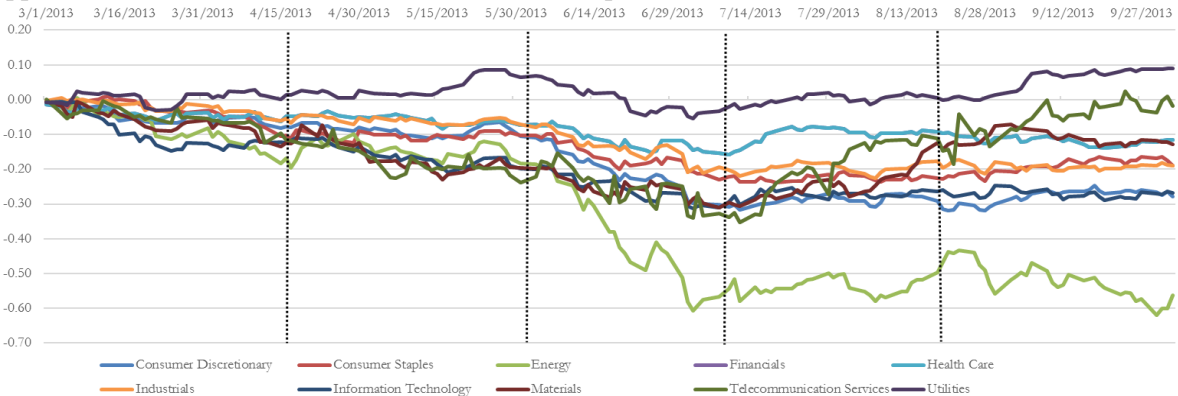
Description: The length of the event periods in each country varies. This chart illustrates the CARs across the three studied countries. It highlights the development from the start of event period 1 until the end of event period 5.

Appendix 2: CAR results for the Brazilian event period



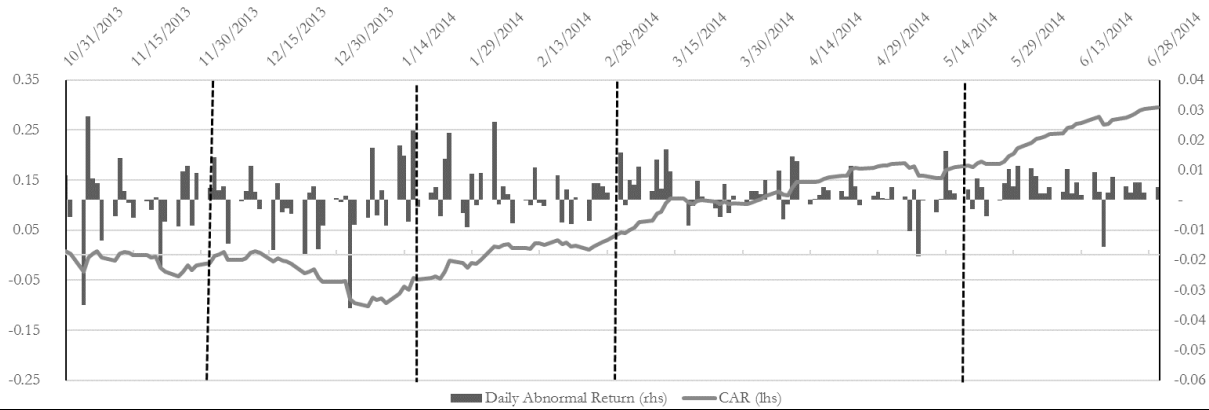
Description: This chart illustrates the CARs for Brazil during the event periods 1-5 and over the entire timespan of events. The dotted vertical lines mark the start and end dates of the specific event periods 1-5.

Appendix 3: Sector CAR results for the Brazilian event period



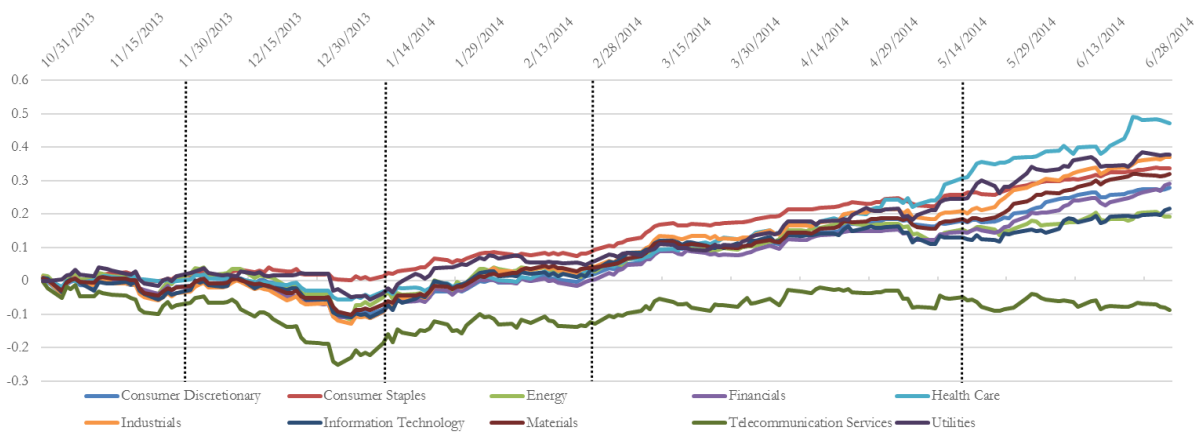
Description: This chart illustrates the CARs for the Brazilian events during periods 1-5 and over the entire timespan of events on a sector basis according to the GICS sector classification. The dotted vertical lines mark the start and end dates of the specific event periods 1-5.

Appendix 4: CAR results for the Thai event period



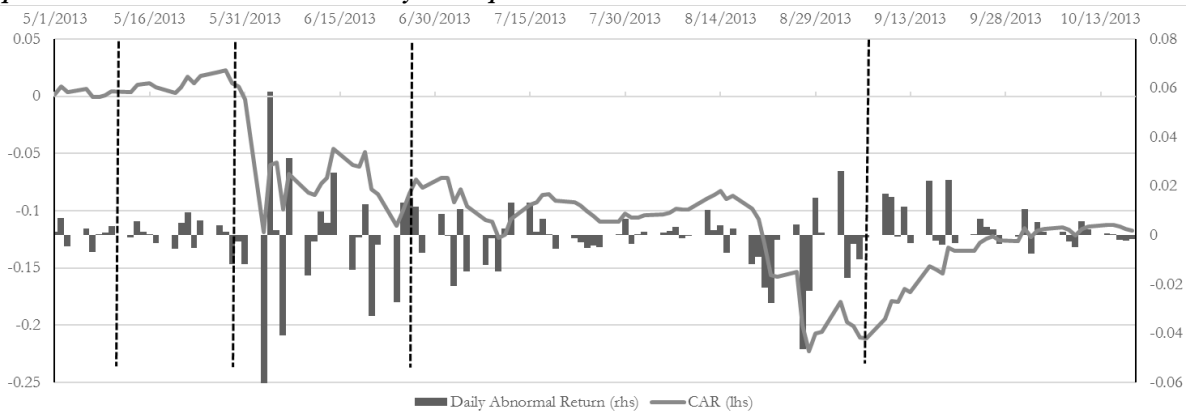
Description: This chart illustrates the CARs for Thailand during the event periods 1-5 and over the entire timespan of events. The dotted vertical lines mark the start and end dates of the specific event periods 1-5.

Appendix 5: Sector CAR results for the Thai event period



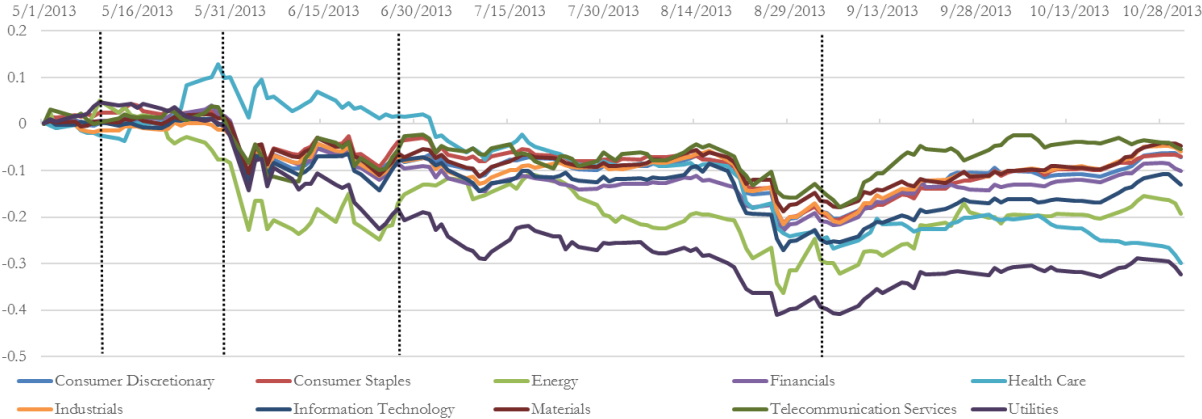
Description: This chart illustrates the CARs for the Thai events during periods 1-5 and over the entire timespan of events on a sector basis according to the GICS sector classification. The dotted vertical lines mark the start and end dates of the specific event periods 1-5.

Appendix 6: CAR results for the Turkey event period



Description: This chart illustrates the CARs for Thailand during the event periods 1-5 and over the entire timespan of events. The dotted vertical lines mark the start and end dates of the specific event periods 1-5.

Appendix 7: Sector CAR results for the Turkey event period



Description: This chart illustrates the CARs for the Turkey events during periods 1-5 and over the entire timespan of events on a sector basis according to the GICS sector classification. The dotted vertical lines mark the start and end dates of the specific event periods 1-5.