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Effect of terror attacks on the bond and stock market of European countries

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Table of Contents

Abstract

It is proven by behavioral economics that negative sentiment can have an influence on the decisions made by investors. In this research the effects of terror attacks on the stock and bond market of five Western European countries is investigated. To study these effects panel data is used. The countries are the United Kingdom, Belgium, France, Germany, and Spain. The time span of the research is 1994-2014. In the research a significant effect is found on the bond market of those countries. For the stock market there is no significant effect. Larger attacks have a significant positive effect on stock and bond market, if the attack happened in the tested country there is no significant effect on either the stock or bond market.
Another result that is found is that different targets of the terror attack have different impacts on the stock and bond market.

1. Introduction

On the thirteenth of November, 2015 Paris was hit by severe terror attack. This attack was responsible for the death of 130 and 368 injured people. These attacks took place near the stadium Saint- Denis right after the football match of the French national team. Next to the attack at Saint-Denis, several cafes and restaurants in the center of Paris where hit, with the heaviest attack at the Bataclan theatre where people were held hostage and more than 80 were killed (CNN, 2015). The attacks of November thirteen where the biggest attacks on French soil since World War Two. In excess to the direct impact of terror attacks on people – injuries and death - there is also an indirect impact. This indirect impact is the impact that a terror attack has on the economy of a country.

The most immediate impact on the attacked country's economy will be the impact on tourism related businesses. This sector is very important in France, and mainly Paris. In France the tourism sector accounts for seven percent (bron) of the economic activity. Immediately after the attacks, this effect was noticeable: many people that would have visited Paris and even Brussels, because shortly after the attack it became clear that the terrorist came from Brussels, canceled their trip after these terror attacks.

Apart from the hotels that are hurt because of the cancelations, also restaurants, shops, tourist attractions, and taxis in France's capital city have less business. Also employees from financial firms said in a survey that their confidence was hit because of the attack.

Even in Brussels, about 40% of all bookings for the weekend after the attack where cancelled. The scale of the financial impact on tourism becomes clear after comments of many hotel owners in these areas. One of them mentioned that the costs of these cancelled bookings would be several thousands of euro's (Walker, 2015).

The financial markets of France dropped when trading started on Monday after the attacks, though they quickly restored. Share prices of Air -France KLM and Accor Hotels fell sharply. The drop was rather short and they soon regained what they lost. On top of the attack's influence, markets are still recovering from a recession, now with this attack the confidence is harmed and this can have an effect on the recovery of capital markets all over the world. (Walker, 2015). Another cost that rises with terror attacks is increased expenditure on more military and police personnel. These extra expenses will eventually lead to, either higher taxes, or decrease in

spending on other areas. One of the reasons for this is that the European Union has rules to ensure the capital spenditures and financial stability of a member state. In this case, the annual government borrowing is limited to three percent of GDP. The effects of these expenditure changes roll over to other areas of the economy. Inter alia, higher taxes will shift the spending behavior of: people, small business owners, and even large companies resulting in less investments. On the other side, if governments cuts spending in other areas it would also impact the economy negatively. For instance if governments spend less money on fixing public roads or bridges, there will be less work in infrastructure and many people can lose their jobs (Walker, 2015).

is possible that the effect these attacks in Paris will be longer lasting than previous similar attacks. This because at the moment of the attack there where already political and economic uncertainties in Europe (Walker, 2015).

From the late 60's terrorism attacks are happening more and more often being heavier each time. Although most research about terror attacks dates from the last two decades it is still very actual and as terrorism is also a very complicated phenomenon, this could have more than one cause. (O'brien, 1996). In Europe there has been more news shared on terror attacks than ever before. The reason for this is not only that more attacks have happened, but also because news travels faster (The Irish Times, 2016). The last big terror attacks happened in Spain in 2004 were 191 people were killed by several bomb on public transportation (GTD database). Now in only three years' time three big attacks happened in Europe. Two in France: the attacks on Charlie Hebdo and the one in Paris, as mentioned earlier, and one in Belgium (at Brussels Airport, Zaventem and the subway) (The Irish Times, 2016).

The two biggest - in terms of casualties and injuries - of the three terror attacks in Western Europe of the past years, are the ones in Paris and Brussels. The attacks in Brussels on the twenty-second of March 2016, resulted in 32 deaths and over 300 people that were injured. This was the deadliest terror attacks that ever happened in Belgium. The responsibility for both the attacks in Paris and Brussels was claimed by the terrorist organization: Islamic State (IS) (Huffington Post, 2016).

The Islamic State is a terrorist group that is active in several countries. However, there are also terrorist groups that are only located and active in one country that plan and commit their terror attacks only in this single country. Some examples of these single country groups are: the Irish Republican Army (IRA) and the Euskadi Ta Askatasuna (ETA). The first is a terror group located in Northern-Ireland. The IRA is against the Northern Ireland's peace process. They want to end the British presence in Northern Ireland and strive to convince Northern Ireland to leave the EU. This terror group only committed terror attacks in Northern Ireland. Instead of killing people by large scale bombings they target a specific location and kill by shooting, there are never a lot of deaths in one single IRA attack (Fenton, 2016).

The ETA terror group wants to have independence of the Greater Basque Country. They claim that regions in northern Spain and south-west France are theirs and should therefore form the Basque country. The ETA was formed in 1959 as a student resistance, opposed to General Franco's military dictatorship. Under Franco, the language of the Basques was banned, the culture was suppressed, and the intellectuals where tortured and imprisoned because of their cultural and political stand points (BBC, 2011). In 2011 they announced a ceasefire. However they declared this before in the past but abandoned both of them, there still remains uncertainty in the persistence of this ceasefire (BBC, 2011).

The Islamic State, is as said earlier a terror group that attacks multiple countries and is located in more than one country. The IS believes that their religion, the Islam, is the only religion that is correct and wants everybody to reform to the Islamic religion. The full name of IS is: Islamic State of Iraq and Syria. In 2014, IS gained a lot of territory in Libya, Egypt, Algeria, Saudi Arabia, and Yemen. In 2015 they expanded and also gained territory in Afghanistan, Pakistan, Nigeria and parts of the North Caucasus (Laskar, 2015). This indicates the willingness and magnitude of IS and shows the world how powerful they are. Like ETA or IRA, IS uses terror attacks to gain power and strike fear in the opponent's hearts. They attack everywhere in the world, Belgium, France, and Turkey are just three of many countries that are hit. It is argued that IS trained over 400 fighters to attack Europe, to attack Europe in a wave of bloodshed. This strikes the fear that IS is planning more attacks on European grounds (Hinnant & Dodds, 2016) . They also use attacks to manipulate the economy of countries, not only in Syria but also Western countries such as France, with for example the attacks on Charlie Hebdo and Paris (Welby, P. 2015).

A not often used terror attacks is making people hostages. Despite the fact that this type of terror attack can be very influential. The most famous examples are: The capturing and killing of nine athletes from Israel in September 1972, the capturing of eleven oil giants in December 1975 , and the takeover of the American embassy in Tehran in November 1979 (Atkinson, Sandler, & Tschirhart, 1987).

A way of influencing the behavior of people can be done by attacking a countries economy. This can result in decreased spending possibilities for inhabitants of that country. If more people have less to spend, the terrorist might think that it is easier to make people follow their beliefs. If more people follow the beliefs of the terrorist group, the influence of that group increases and it becomes stronger (Abadie, 2004).

It used to be that with worse economy environments, the chances are higher that terrorist groups are being formed, and that political incentives have only a low explanatory variable as to why terrorist groups are formed. This implies that the economy has a higher influence in the forming of terrorist groups than the politics of a country (Abadie, 2004). However new research found out that poverty does not make for more terrorist groups than countries with no or less poverty (Abadie, 2004). It is the fact that a lot of transnational terrorism is because of the terrorist groups have grievance against richer countries and attack richer countries to gain more publicity on an international level. The result of this is that rich countries are largely affected by transnational terrorism (Abadie, 2004). It is argued that the prices of stocks reflect what the investors think about what will happen in the future. As terror attacks are unexpected changes in the planned horizon, they could have large influence on the way stock prizes will move.

For this reason and because a lot of attacks have happened recently it is important to know what for effect they have on the economy of a country where the attack took place, and to the reaction of other countries to these terror attacks. By affected is meant, how the stock - and bond market of a country react after a terror attacks: do they decline or increase, is there a long term or short term effect, does the attack affects some on some kind of companies more than others? This paper will concentrate on the stock and bond market of the countries where the attacks took place.

The market can react because of two different effects: the economic effect and the sentimental effect. The difference between these two effects is explained in the literature review, in the remainder of this article. The relevance of this is to see how investors deal with external shocks and how vulnerable the stock market can be in case of a terror attacks, and to see if people only react rationally or also let their feelings play a part in their decision making. It is relevant to know this to see what can be done so that there is as little reaction on the stock market as can be after a terror attacks. Having a country pro-actively prepared to act upon the effect of an attacks to the stock and bond market, can lower the incentives of a terrorist organization to commit an attack on that specific country. For this exact reason it is relevant to study the effect of terror attacks on the economy. And as said earlier terrorist groups also want to manipulate the economy of a country and if the effect of an attack on the stock market is large, more attacks will follow.

To study the effects of a terror attacks on a country's economy, first a literature review will be elaborated on what has been researched on the effect of terror attacks is on the economy of a country, countries, companies and more. This literate review will be the base in creating the hypothesis that will be tested in this paper. Then the data will be discussed. After this the method that is used will be explained and the expected outcome for the different hypotheses will be discussed. Then the actual tests will be done and their outcome will be discussed and assessed to the hypothesis. Further also the differences between this research and other researches about the effect of terror attacks will be discussed. In chapter 6 the conclusion will be given. After the conclusion, in chapter 7 the discussion will be given. In this discussion this research will be compared with other research. Also the limitations to the research and some suggestion for further research will be made in the discussion.

2. Literature review

In this literature review some of what has already been researched on the effect of investor sentiment on the economy will be discussed. The main reason for this is that the sentiment of investors is important in the decisions they make regarding their investments in the stock and bond market. Thus, how an investor feels at a certain moment can influence its behavior. Behavioral economic studies argue that negative sentiment - the investors are in a bad mood or have anxiety - will have an effect on investment decisions. These sentimental investment decisions can influence asset pricing, and in excess can influence the stock market. (Kaplanski & Levy, 2010).

A distinction can be made between economic effects and effects that occur because of sentiment, or sentimental effects. Economical effects occur if economical related news gets out. An example of this can be: the annual report of an airline. If this report indicates a drop in passengers, therefore a decrease in company income, investors are less reluctant to buy shares for this airline. Because these effects are from a trustworthy economic source, it can have an immediate impact on that specific company. On the other hand, sentiment effect comes from investor's feelings. This is when no economical news gets out but if there is an event that has an influence on the sentiment of investors. An example of this is a terror attack. This attack can have an influence on the behavior, sentiment, of people, and thus also the investors, which in its turn can have an effect on the capital market. Furthermore, economical effects come from rational thinking, where sentiment effect comes from emotions that have little to do with rational thinking. The investor sentiment is a belief about the future cash flows and investment risks. These beliefs are not based on facts about the economy. And because the investor sentiment depends on the emotions of investors, terror attacks can greatly influence the investment climate on the capital market (Baker & Wurgler, 2007, Goldberg & Leonard, 2003).

It is known that not all changes in the bond and stock market are dependent of the economical information that is public. The market is constantly changing, even when no new information gets published (Goldberg & Leonard, 2003). This indicates that there is investor sentiment is an important player and can also be an explanation for the constantly changing capital market.

One of the triggers that is used for investigating what the effect is of investors sentiment on the stock market is the weather. Chang et al (2006) use this trigger to see what the effects of the mood of investors has on the stock market. For their research they use stock market and weather data for Taiwan. The major weather factors, such as temperature, humidity, and cloud cover are used in their paper. They conclude that temperature and cloud cover have a significant effect on the stock returns of Taiwan. The effect is that with nice weather, thus a high temperature and low cloud coverage investors invest more than when the temperature is low and a there is a lot of cloud coverage. The effect of weather is also investigated by Hirshleifer and Shumway (2003). They use weather and stock data of 26 different countries. In their article it is concluded that if the sun shines it has a significant positive effect on the stock market of the country. However, snow and rain have no significant effect on the stock market. The use of weather for making investment decision is mainly helpful for trades with low transaction costs. The reason for this is that for making profits of weather effects, stocks need to be traded at high frequencies, making it only profitable if the transactions costs are low.

Another investor sentiment where to a lot of research has been done is sports. This effect is investigated by Ashton et al (2003). They research what the effect is of a national sporting success on the London stock exchange. They conclude that if the National soccer team of England wins, it has a positive influence on the London stock exchange. They use the London FTSE 100 index, this is the index of the 100 largest companies that are traded on the London stock exchange.

Edmans et al (2007) also use the effects of soccer on the stock market. But they use international stock effects of more countries than just England (what Ashton et al, 2003 do). They found that if the National team is eliminated in an elimination stage of the world cup, it leads to a severe decline in the stock return the day after. They find no significant answers in case the team wins. Further the authors find that the effect is larger with small stocks and more important games. The same is concluded for cricket, rugby, and basketball.

Boyle and Walter (2003) investigate the same thing, they investigate what the effect is of international sport success is on the stock market. They found that the stock market is independent of the outcome of the game of their National team for their favorite sport, which is rugby. Thus in Boyle and Walter's research, sport outcomes have no effect on the stock market pricing.

10

Next to sports, aviation is used to see if investor sentiment has an effect. Chance and Ferris (1987) have investigated what the impact is of aviation crashes on the financial market. They look at the stock markets of aviation companies. They show that the stock of the aviation company that is involved in the crash declines sharply, but does not show a subsequent reaction. The stock of other aviation companies does not change with the crash. The authors conclude with this outcome that the financial impact of an aviation crash is only focused on the company of which the aircraft crashed, and not on the total aviation industry which remains the same.

Bosch, Eckard, and Singal (1998) also investigate the effect of a commercial airliner crash on the stock market, to see how consumers respond after an air crash. Do they go to rival companies or will they fly less? This is the main question in the research of Bosch, Eckard, and Singal (1998). They focus on the stock market of the airline companies whose aircrafts where not involved in the crash. This to see if switching occurs. In case switching occurs the stock market of the other companies should increase. They find that the consumers will change of airline companies in case of a crash, and not stop flying altogether.

Kaplanski and Levy (2010) also test what the effect is of aviation disasters on the stock prices. They find that there is a strong negative effect of an aviation disaster on the stock market. In two days the price of the stock market indicates a switch and will start rising again. Further they find that the impact is greater in companies that have small and riskier stocks, and companies that are part of a more unstable industry.

During the last years also terror attacks have been seen as being a trigger for investor sentiment, most researchers conducting investigations on the effects are of a terror attacks on the macro economy. Eckstein and Tsiddon (2004) test for Israel what the effects are of a terror attacks. They find that that terror attacks have a significant and short term effect on the important macro-economic variables of Israel, such as consumption, investment, and net exports. This is also investigated by Blomberg et al (2004), and their results conclude the same.

Terror attacks have an influence on the mood or well-being of investors, for the reason that innocent people are killed, or even hurt in a terror attacks. Furthermore, because nobody knows when or where a next attack will happen, everybody lives in uncertainty. Nobody knows who the next victim of an attack will be, it can be a family member or the person itself (Lerner, Gonzalez, Small, & Fischhoff, 2003). after the terror attack on the world trade center on September 11, 2001. It was indicated that between 50% and 70% felt depressed because of the

11

attack. People's emotions after terror attacks are mainly anger, fear, sadness, and anxiety. Further many people said that they felt less save, and had the fear that one of their family members or friends could be the victim of the next attack (Fischer, Greitemeyer, Kastenmüller, Jonas, & Frey, 2006). This change in mood and behavior can have an effect on how the investors invest in stocks and bonds right after an attack (Solomon, Greenberg, & Pyszczynski, 1991).

The reason that motives and impacts of terror attacks are being researched is that with terror attacks human and economic losses occur. Severe terror attacks, such as the attacks on 9/11/2001 in the United States of America has led to a more extensive growth in the research on the impact of terror attacks. Many disciplines such as, economy, finance, public, public policy, psychology, and sociology have studied terror attacks to find out why these happen and how to prevent these attacks (Sanjay & Liu, 2013).

The analysis of terrorism by Lapan and Sandler (1993) suggests that terrorism is a signaling game where both parties do not have complete information. They suggest that terror attacks are the means to find out more about the offensive and defensive capabilities of both parties involved. Further Lapan and Sandler (1988) investigate if governments should have a strategy whereby the government never negotiates with terrorists. They show that this strategy is not likely to be effective in case terrorists are likely to succeed or if the cost of failing is low. To make the strategy of no negotiation to be more successful, the government must make changes to reduce the probability of success of the attacks and to make the costs of failure higher for the terrorists. Enders et al. (1990) investigate how effective it is for governments to implement policies to prevent terrorism. The authors find that there is little evidence that more rules are effective against terrorism. Atkinson et al. (1987) have their research on what the effect of changing the negotiation strategy is on the length and the severity of the terror attacks. The authors find that if the bargaining costs increases, this lengthens the duration of the terror attacks. According to O'Brien (1996) terrorism is used by big international powers as a tool for foreign policy. It is concluded in the research by O'Brien (1996) that in case there are setbacks in the foreign policy that the authorities will sponsor terror attacks.

In a broad way these papers provide a basis to analyze the effects of terror attacks in economics. However, none of these papers investigate how a terror attacks can have an influence on the economy, and it is not discussed whether a terror attacks has an effect on the economy of a country. While there are papers that research what the impact is of a war and when a war is most

likely to happen, they exclude other types of attacks, such as terror attacks. An example for this is the research done by Hess and Orphanides (1995, 2001). They suggest that the probability of a war or conflict in the United States is more likely to happen when the economy of the United States is in a recession, almost in a recession or when there are re-elections for the presidency. Other authors that investigated linkages between business and political cycles are Gelpi (1997) and Brueck (1997).

Financial markets behave according to what the investors expect what will happen in the future. The financial markets will thus go up if investors think positively about the future, and the markets will go down if investors are skeptic about the future. Research shows that terror attacks are labeled as being a negative outlook, this for the fact that terror attacks hurts innocent people, and should therefore have a negative impact on the stock market (Chen and Siems, 2004).

There is research done that focuses on what the impact is of terror attacks on the financial markets. The research that has been done is mostly for the effects in the short run for the fact that stock markets in the long run are efficient in absorbing shocks that come from terror attacks (Johnston and Nedelescu, 2006). They use the attacks of 9/11 2001 and the attacks in Spain, Madrid, on March 2004. The main conclusion of Johnston and Nedelescu is that financial markets are not only disrupted by the damage to property, but also with uncertainty and market volatility, this was clear after the attacks of 9/11. There is another difference between the attacks according to Johnston and Nedelescu, namely that the attacks in Madrid had most of their effect in a regional basis, the impact on the stock market was limited to the stock market in Spain, where the attacks of 9/11 also had a large international impact on financial markets. They state that this difference can exist because of the timing of when the attacks took place. Because the attacks in Madrid happened when the economy was booming, where he attacks of 9/11 happened when the economy was in a low point. Another reason was that the target of the attacks has an influence as well. This because the attacks of 9/11 where in New York on the financial center, and the attacks in Madrid where on the transportation.

Karolyi and Martell (2006) look at what the effect is of terror attacks in the long run on economic markets. They investigate this by looking at the stock price fluctuations of the company that was targeted by the terror attacks. They find that the effect on the stock prices varies on where the company is located. They say that in countries that are richer and more democratic, terror attacks have a larger influence on the stock prices of companies. Furthermore, they

13

mention that there is still only a little known about what the effects are of terror attacks on the financial markets. They only look at the stock prices of the companies that are hit in a particular attack.

Further Chen and Siems (2004) found that terror attacks and military invasions have a negative impact on capital markets. They also found that different attacks have a different impact on the stock market of the United States, so had Pearl Harbor an effect of -2.75% and the terror attacks of 9/11/2001 had an effect of -7.14% on the stock market. Further they find that financial markets in the US stabilize faster than other financial markets. They say that the reason behind this is that the US has a strong banking and financial sector. The main conclusion of their paper is that the financial markets are good in absorbing the impacts that are caused by the attacks, and that the financial markets can continue to work properly after a terror attacks. Drakos (2009) also found that there are reactions on the economy in case of a terror attacks. According to Essaddam and Karagianis (2014) who investigate what the effects are of terror attacks on American firms. They conclude that terror attacks have major influence in the volatility of the stocks of these American firms. Thus the firms that are hit their stocks become more volatile because of the terror attacks that occurred.

The research by Berrebi and Klor (2005) is only based on terror attacks that have happened on companies that are from Israel. They find that the stock returns of the United States' stock market for the companies that are cross-listed for trading in the US where 0.77%. Companies that have no relation to the defense of a country have an abnormal return of -4.58%, in comparison to companies that are related to the defense of a country have an abnormal return of +3.89%. These abnormal returns happened in case a terror attacks took place. They conclude that for companies that have their business in the defense of a country, profit from terror attacks, were other companies suffer.

Karolyi and Martell (2010) found that the stock markets react negatively on the day that the terror attacks took place. They came to this conclusion by looking at publicly traded companies in the USA and what the effect was on the stock prices of these companies. By using the terror attacks of 9/11/ 2001 Cummins and Lewis (2003) could conclude that in case of terror attacks there is a strong negative shock to companies that have their business in the property-casualty insurance, or what is more indicated, insurance companies. The reason for this is that the insurance companies must pay for a lot of the damage that occurred during the attack. Because of

14

these high costs for the insurance companies, this is negative economic news and thus investors are reluctant to invest in these companies.

Li and Schaub (2004) state that terrorism and the development of the economy are interdependent of one another. Thus in a country with a higher economic development there will be less terror attacks than in a country where the economic development is lower. Thus if international trade influence the economic development in a positive way, this will influence the terror attacks negatively, more trade will thus lead to less terror attacks according to Li and Schaub (2004). In another case if there are more terror attacks this can lead to a decline in trade between countries (Nitsch & Schumacher, 2004).

In the study of Nguyen and Enomoto (2009) they look at the effects of terror attacks on stock markets and on the volatility. In their study they only use two countries, Pakistan and Iran. Chen and Siems (2004) use more countries, namely 30 countries, but they only use two major terror attacks, the attack of 9/11 and the invasion of Iraq in Kuwait in 1990.The primary focus of their research is on the international stock market. Further also Hassan et al (2014) research the impact of terror attacks in Pakistan. The authors find that terror attacks have a significant effect on the Pakistani stock market.

Eldor and Melnick (2004) investigate the effect of terror attacks in Israel on stock and foreign exchange markets is. They use 639 terror attacks in the time period of 1990 to 2003. They conclude that terror attacks have a negative effect on stock markets, but not on foreign exchange markets. Also they conclude that the foreign exchange markets are very efficient in incorporating the negative news of the terror attacks, further they mention that there is no prove that the markets become less sensitive to terror attacks, in other words every new attack has the same impact as previous attacks. Furthermore, they find that if there are more victims of the attack the effect of the attack is larger on the stock market.

Carter and Simkins (2001) investigate what the effect of the terror attacks of 9/11 had on the stock market of airlines. They investigate this by testing how the market reacts on the first day after the terror attacks, this to see whether the reaction is different for some airlines or whether there is a difference in the stock market per airline and whether or not this affects the returns. Furthermore, het investigate whether this affect in returns is related to specific company characteristics. They found that there is a difference in the stock return between airlines and suggest that this depends on the ability of the different airlines to cover short term obligations

15

which is measured by how the company can pay their assets. They say that the airlines which have the lowest liquidity are the ones that are hurt the most. However, they do not find any evidence that company characteristics such as size and performance have an influence on how the stock prices of airlines react after a terror attacks.

Overall the research that has been done on the effect of terror attacks on the economy is mainly focused on only a couple of terror attacks. Most of the research limits to only the attacks that happened on 9/11 2001 (Chesney, Reshetar, & Karaman, 2011). And in excess to these attacks, there is looked at the economy of countries such as Israel, Pakistan, or the United States of America, and on the stock market of these countries not the bond market. For instance Therefore, in this paper there will be looked at what the effects are of a terror attacks in Western Europe. This area is not earlier taken into account in previous research, only Johnston and Nedelescu (2006) investigate the attacks that happened in Spain in 2004 on transportation. Further the bond market was not included before as well. Furthermore, not only the big attacks are used but all the attacks that took place in that time span. Like Johnston and Nedelescu (2006) that only use the attacks of 9/11 in The USA and the attacks on Spain in 2004. The countries that are used in this paper are the UK, Belgium, France, Germany, and Spain. The attacks that will be researched are all the terror attacks that took place in these countries from 1994-2014.

Another contribution is that different targets are investigated. With the effect of different targets is meant that if for instance the police is attacked this will have a different influence on the stock and / or bond market than if businesses are attacked. Here can be seen whether or not there is a different reaction if different targets are hit by terror attacks.

In this research two hypotheses will be tested. The first hypothesis that will be tested is: "*Terror attacks that happen in the United Kingdom, Belgium, France, Germany, and Spain, have a significant influence on the bond and stock market of these countries*". This hypothesis will test if there is an effect on the bond and or stock market of those five countries. These countries will be looked at separately and together to see if there is a difference. The suspected outcome of this hypothesis is that there is a significant reaction on both the stock and the bond market. This is because the literature review indicates a significant negative effect on the stock market in all the

16

cases (as stated above) and because the stock market is significant it follows that the bond market will also have a significant negative effect.

The second hypothesis is: "There *is a different reaction on the bond and stock market of those five countries dependent on what the target was of the terror attack*." This hypothesis tests if there is a different reaction on the stock and or bond market when different targets are hit. For instance, the effect will be different when businesses are hit than when transportation is hit. It is suspected that for this hypothesis there will be a difference in reaction from the terror attack dependent on what target is hit. Thus if the police is hit this will have a different effect on the bond and stock market than when the target transportation is hit.

3. Data

The terror attacks that are used in this paper are the terror attacks that happened in the United Kingdom, Belgium, France, Germany and Spain. These attacks are found in the datasets of Global Terrorism Database, GTD for short, and the RAND Database of Worldwide Terrorism Incidents (RDWTI). However, the RDWTI database only has data until 2010, where this research includes data up to 2014. Therefore, the GTD is include as this has data up to 2014. So from 1994-2010 both databases are used for the terror attacks and from 2010 till 2014 only the GTD database is used. Both of these databases have the information on what the target was (for instance education, or businesses), what kind of attack it was: a bombing, a kidnapping or a different sort of attack. If all the attacks are taken together there are 68 terror attacks that happened in these five countries over the time span1994-2014. Further the other two big terrorist databases are the MIPT Terrorism Knowledge Base and the South Asian Terrorism Portal. These are not used in this research as the first one is no longer used and the South Asian Terrorism Portal only records information on terror attacks that happen in South Asian countries.

The stock market and bond market data is found on DataStream. DataStream is a program that collects the financial data from different countries and markets. This includes daily data for the following countries: France, Germany, United Kingdom, Belgium, and Spain. This data is from 1994 till 2014. The reason that a twenty-one-year time period is chosen is because in West European countries relatively few terror attacks occur. In total this gives 27,776 observations

The information on the country characteristics comes from the Organization for Economic Co-operation and Development (OECD) database. This database collects the economical information of countries, which includes economic information for most of the Western countries and also some Eastern countries (OECD, 2016)

18

4. Method

4.1. Regression first hypothesis

The first hypotheses for this article: "*Terror attacks happening in the United Kingdom, Belgium, France, Germany, and Spain. have a significant influence on the bond and stock market of these countries*", will tests the impact of terror attacks on the stock and bond market of the aforementioned countries. This study is an event study with the use of panel data. This as data for more than one moment in time and more than one country is investigated.

It is possible that the effects on the stock and bond market of terror attacks actually only happens after the news about the event is available for everyone and comes to everyone's attention. This can take up to several hours after the actual attack took place. A reason for this is that often even the authorities do not know exactly what happened, and it takes a while before the media is present at the site where the attack took place (Kaplanski & Levy, 2010). Further because this paper is investigating the information and not the news about the terror attacks, the hypotheses asserts that the effect of the attack starts the first day after the attack took place, which will be referred from now on as the event day. This is the same way of reasoning as Borenstein and Zimmerman (1988) and Kaplansky and Levy (2010) used in their article.

Also each country will be looked at separately to find out what the effects are on the bond and stock market of these countries separately. In this way can be seen if there are differences in the results between countries as an effect of a terror attack.

Only the first three days after the terror attacks in these countries will be tested for significance. The reason for this is that the reversal effect will likely occur two days after the attack took place (event day) (Kaplanski & Levy, 2010). Thus if after two days the reversal effect occur, meaning that the market starts fixing itself, there is no reason to look at the effect after these days. This can confirm the reasoning that main headlines about the attack are primarily focused on the two days after the attack took place. The news of the attack is still easy to find and everybody is reminded of it.

19

To test the first hypothesis and thus to see what the effects are of a terror attacks on the stock and bond returns of these Western countries, a similar methodology will be used as used in the research done by Kaplanski and Levy (2010), and Kamstra, Kramer, and Levi (2003). This means that for the first hypothesis the following regression will be used:

$$R_{jt} = \gamma_0 + \sum_{i=1}^{5} \gamma_{1i} R_{jt-i} + \sum_{i=1}^{4} \gamma_{2i} D_{ijt} + \gamma_3 T_{jt} + \sum_{i=1}^{4} \gamma_{4i} E_{ijt} + \gamma_5 C_{tj} + \varepsilon_{jt}, \quad 1.1$$

Where R_{jt} stands for the daily rate of return of either the stock or bond market of the country. γ_0 is the intercept of the regression, R_{jt-i} is the rate of return of i-th previous days of return (thus i days before the actual attack happened). D_{ijt}, i=1...4 are the dummy variables for which day of the week it is, respectively: Monday, Tuesday, Wednesday, and Thursday. T_{tj} is a dummy variable for the first five days of the new taxation year. The E_{ijt} (i=1,2,3,4) stands for the effect that is possible, the effect of the terror attack, and the reversal effect variables. The reversal effect variables are the three days after the attack took place. ε_t is a correction term. C_{tj} is the dummy for the different country characteristics. The country characteristics used in this research are: GDP, inflation rate, and unemployment rate. These country characteristics are taken in account so they cannot make a difference in the results. This as it is known that these anomalies exist, and that they can have an influence on the results (Kaplanski & Levy, 2010). Where the small j stands for the country.

Apart from these variables, in the introduction three more variables are used to see what the effects of terror attacks are on the five European countries. The three other variables are: *attack in country, more than 5 fatalities,* and *more than 60 injured*. Where *attack in country* is an interaction term that is 1 in case the attack takes place in the country that is tested at that moment. Thus if the UK is tested it will only use the attacks that happened in the UK. *More than 5 fatalitie*s stands for the terror attacks were more than five people were killed. And the last variable *more than 60 injured* tests the effects of a terror attack with more than 60 injured people. The last two variables measure what the effects are of larger terror attacks on the bond and stock market of the five European countries.

Because we are dealing with daily returns on consecutive days, there must be looked at the known anomalies to see whether or not these have an influence on the results. The first known anomaly that is looked at is autocorrelation (serial correlation) of the bond and stock markets of the countries.

Serial correlation is important because earlier studies have found a weak tendency of movements in the aggregate stock returns (Schwert, 1990). A possible explanation for this serial correlation can be non-synchronous trading (Fisher, 1966). Non-synchronous trading happens when transactions are done on a not frequent base. Frequently traded transactions have, at the end of the day, all available information implemented in the price. On the other hand, transactions that do not occur frequently do have not all available information implemented in the price at the end of the day. Thus these prices will adjust the first possible time, which will be the following trading day (Fisher, 1966). This means that, when sampling the closing prices on the first day, it is possible that not all information is reflected in the price of the traded securities that are not frequently traded. In this case, the prices will need to be adjusted the next day.

To see whether or not there is a possible serial correlation, the previous days' rates of return variables (R_{t-i}) are implemented in the main regression. Thus the test looks as far back as necessary so that all the significant serial correlations have been accounted for. Normally two days will be sufficient because then the information is implemented in all the traded securities. However, to be sure, the tests are run with five days before the event day. According to Kaplanski and Levy (2010), a test with five days would be a accepted test size. Autocorrelation is important to deal with because when there is autocorrelation in the regression, it can lead to the wrong outcomes for other variables.

Secondly, the attacks that have happened between the years: 1994-2014 in the UK, Belgium, France, Germany, and Spain, did not occur evenly over the week days. The "weekend effect" exists in the entire period that is used in this test. The "weekend effect" is found by French (1980), and it is indicated that this can have a effect on the data. Therefore, this effect will be included in this research. To do this, dummy variables are created in the regression that account for the day of the week ($D_{it} = 1...4$). The days that are implemented are Monday, Tuesday, Wednesday, and Thursday.

For the unusual returns for the first five days of the week, as previously indicated by the paper of Dyl and Maberly (1992). The variable (T_t), for the first five days of the taxation year

implemented in the main regression function. The reason for this is that the first five days after the new taxation year can have an influence on the stock and bond market of the countries. All of these dummies are implemented in the regression for the reason that it cannot have an effect on the results for the effect of terror attacks on the bond and stock market of the five European countries. The same regression with the same variables, is also used for the countries separately.

4.2. Regression second hypothesis

The second hypothesis that will be tested is: "*There is a different reaction on the bond and stock market of those five countries dependent on what the target was of the terror attack.*"

The regression that will be used to test this hypothesis is the following:

$$Return\ on\ event\ day = \gamma_0 + \sum_{i=1}^{5} \gamma_{1i} R_{jt-i} + \sum_{i=1}^{4} \gamma_{2i} D_{ijt} + \gamma_3 T_{jt} + \gamma_4 dpolice +$$
$$\gamma_5 dprivatecitizens + \gamma_6 dtransportation + \gamma_7 dbusiness + \gamma_8 dmilitary +$$
$$\gamma_9 dgovernment + \gamma_{10} dreligious + \gamma_{11} deducation + \gamma_{12} dtourists + \gamma_{13} C_{tj} + \varepsilon_{jt} \quad 1.2$$

This regression tests the effects of the different attacks. The "d" in front of the different targets stands for dummy. The dummies are either 1 or 0. Thus it is tested what the effects are of the different subjects that can be the target of a terror attack. Then every target is being tested to see if there are different reactions between targets on the effects on the event day of the attack.

For instance, the police are a target. If the police are hit, this will have an effect on the stock and or bond market. Further it is possible that, if other targets such as education (Schools) are hit, this effect is higher than when the police are hit. Therefore, this article looks at the effect of a terror attack on different targets. Thus, it can be seen that, if an attack that happened on a particular target, it can have other effects if another target is hit. For this regression all of the other variables still have the same meaning as they had with the previous regression. With this regression it is tested whether or not some target types will have an higher effect on the stock and bond market than other target types.

As with regression 1.1, this regression will be used for the countries separately as well. This to see if the targets have a different reaction on the countries separately than they have when the countries are looked at together.

5. Results

5.1. Results for hypothesis one

Fig.1 Terror attack on all countries combined

	attack in country	five days before	four days before	three days before	two days before	one day before	event day	one day after	two days after	three days after	more than 5 fatalities	more than 60 injured	GDP	inflation	unemployment rate	first five taks days	Monday	Tuesday	Wednesday	Thursday	constant
Bondmarket	**-0.0001**	-0.0001	-0.0003	-0.0003	-0.0039	-0.0002	**-0.007**	-0.0000	0.0000	0.0002	**0.0012**	**-0.0003**	0.0000	0.0001	0.0000	0.0001	-0.001	-0.0002	-0.0001	-0.0002	0.0002
	(-0.26)	(-0.6)	(2.84*)	(-5.09**)	(-1.88)	(-1.15)	**(-8.98***)**	(-0.75)	(-0.74)	(1.29)	**(5.11**)**	**(-0.60)**	(2.80)	(-2.12)	(-0.13)	(0.48)	(-0.62)	(-1.55)	(-0.78)	(-1.88)	(2.08)
stockmarket	**-0.0011**	-0.0016	-0.0005	0.0015	-0.159	-0.0005	**-0.0004**	0.0006	0.0002	0.0011	**0.0015**	**0.0047**	0.0000	-0.0007	-0.0001	0.0017	0.0006	0.0010	0.0006	0.0007	0.0019
	(-2.22)	(-7.59**)	(-1.67)	(2.11)	(-1.57)	(-2.20)	**(-0.93)**	(1.92)	(0.73)	(5.17**)	**(4.76**)**	**(8.21**)**	(-0.19)	(-3.43*)	(-1.35)	(3.86*)	(1.95)	(2.55)	(1.23)	(1.46)	(1.65)

Figure 1 shows the following regression:

$$R_{jt} = \gamma_0 + \Sigma_{i=1}^{5} \gamma_{1i} R_{jt-i} + \Sigma_{i=1}^{4} \gamma_{2i} D_{ijt} + \gamma_3 T_{jt} + \Sigma_{i=1}^{3} \gamma_{4i} E_{ijt} + \gamma_5 C_{tj} + \varepsilon_{jt},$$

where Rjt stands for the daily rate of return on the stock or bond market of the European countries. γ_0 is the regression intercept, here the *constant*. $\Sigma_{i=1}^{5} \gamma_{1i} R_{jt-i}$ stands for the daily return before the *event day*, these days are *fivedaysbefore, fourdaysbefore, threedaysbefore, twodaysbefore, and onedaybefore* . D_{ijt} i=1....4 are the dummy variables that stand for the day of the week (*Monday, Tuesday, Wednesday, and Thursday*). T_{jt} is the dummy variable for *the first five days of the taxation year*. E_{ijt} i=1...3 stands for the event effect days, in this case the variables are named: *eventday, onedayafter, twodaysafter, threedaysafter*. C_{tj} is the dummy for the different country characteristics (*Inflation, Unemploymentrate, and GDP*).Also three variables, *attackincountry, more than 5 fatalities, and more than 60 injured* are implemented. These test respectively the effect if the attack happens in the tested country, if there are more than 5 deaths because of the attack, and if there are more than 60 injured. The time period is January first 1994- December thirty-first 2014. The first line represents the regression coefficient, the second line reflects the corresponding t-values. one, two, and three asterisks (*) indicate a significance level of 5%, 1% , and 0.1% respectively. The numbers that are bold are the most important results for the hypothesis. The amount of observations are 27,777. for all the regressions see appendix A. 1

The fixed effects regression is selected for the reason that this test is mostly used in panel data because it gives the best results for this research. The results from the other test, the random effects test, is shown in the appendix: table A1. Further tests are done for heteroscedasticity, autocorrelation and the VIF test for multicollinearity, these tables are located in the appendix (A.2, A.3, A.4, A.5, and A.21). These tests indicate no autocorrelation, but do indicate heteroscedasticity. Because there is heteroscedasticity, the command 'robust' is used in Stata for the fixed effects model and the random effects model. The VIF tests a little higher than 1, which means that there is no multicollinearity (Allison, 2012). The data tested here is panel data, and as said before, this because this research includes multiple moments in time and multiple countries.

The variable *attack in country* stands for the interaction effect between whether the attack takes place in the country that is tested or not. Thus this tests the effect of the attack in, for example, Spain when the attack took place in Spain. It only takes the attacks if the attack happened in that particular country. Further the variable *event day* stands for the event day (the day after the attack) and *one day after* stands for the first day after the event day. *one day before* is the variable for the day before the attack. *More than 5 deaths* and *more than 60 injured* stand respectively for more than five fatalities and more than 60 people that are injured when the attack happened. The reason why these numbers are chosen, is because if the numbers are even higher, only two attacks remain, an attack in the UK in 2005 and the attack in Spain in 2004 on the transportation sector. Further some country characteristics are implemented, such as *inflation, GDP* and the *unemployment rate*. For the countries separately, only the most important results are put in the figure (the entire tables are located in the appendix) because only these results are useful for the hypothesis. These variables are, *attack in country, event day, more than 5 fatalities* and *more than 60 injured.*

24

Fig. 2 Terror attacks effect on single countries

Country	Market	attack in country	event day	more than 5 fatalities	more than 60 injured
UK	bond	-0.0013	-0.0006	0.0018	0.0009
		(-1.08)	(-1.03)	(1.63)	(0.99)
	stock	-0.0027	0.0003	0.0024	0.0041
		(-1.75)	(0.27)	(1.17)	(2.02*)
Belgium	bond	-0.0005	-0.0009	0.0012	-0.0002
		(-0.28)	(-2.01*)	(1.74)	(-0.24)
	stock	-0.0010	0.0001	0.0012	0.0033
		(-0.31)	(0.08)	(0.55)	(1.35)
France	bond	0.0016	-0.0006	0.0018	(-0.0019)
		(1.62)	(-1.14)	(1.89)	(-1.44)
	stock	-0.0009	-0.0011	0.0014	0.0053
		(-0.35)	(-0.75)	(0.45)	(1.68)
Germany	bond	0.0001	-0.0007	0.0014	-0.0008
		(0.06)	(-1.38)	(2.39*)	(-1.22)
	stock	-0.0015	-0.0011	0.0017	0.0063
		(-0.45)	(-0.58)	(0.48)	(1.39)
Spain	bond	-0.0003	-0.0005	0.0003	0.0006
		(-0.35)	(-1.15)	(0.36)	(0.60)
	stock	0.0001	-0.0004	0.0003	0.0045
		(0.03)	(-0.17)	(0.09)	(2.03*)

Figure 2 shows the most important results in the separate countries, UK, Belgium, France, Germany, and Spain. The first line represents the regression coefficient, the second line reflects the corresponding t-values. one, two, and three asterisks (*) indicate a significance level of 5%, 1% , and 0.1% respectively. *Attack in country* variable gives the result of the effect of the terror attack when this attack took place in the country that is tested. The variable *event day* stands for the result of the terror attack on the day it took place, this variable implements all the terror attacks also the ones that did not happen in the tested country but also the other four countries. *More than 5 fatalities* gives the result of the attacks that had more than 5 deaths. *More than 60 injured* is the variable that shows the result if more than 60 people were hurt in the attack.

The effects of the terror attack are not big. But the variable *event day* is significant for all the bond tests when the countries are looked at all together. This means that there is a significant reaction of the bond market after an attack. This effect is also negative. The *event day* variable has no significant effect on the stock market. Therefore, there is no reaction on the stock market after a terror attack.

For the countries separately, see figure 2, the time series regression is run. This to see if there is a different effect between the countries separately or all together as in the first test. For the first country, the United Kingdom the *event day* is not significant, not for the bond market and also not for the stock market. This is different from the result of all the countries together. For Belgium there is a significant effect on the bond market on the event day (see figure 2). The significant effect is a negative value, very small (-0.0009), this means that if there is a terror attack in one of the five tested countries that the bond market of Belgium will decrease. This is the same for the outcome of all countries together. The terror attack has no significant influence on the day itself for France, Germany, or Spain. Thus Belgium is the only country where a terror attack has a significant influence on the bond market. And looked at the countries together there is also no significant effect on the stock market on the event day, this is the same when the countries are looked at individually (for all information for the countries separately see appendix A.6, A.7, A.8, A.9, and A.10).

The variable *attack in country* has no significant influence, not on the bond nor the stock market when looked at all countries together (fig. 1). Therefore, the attacks have no significant impact on the country itself. Thus if the terror attack takes place in a country, there is no reaction on that countries bond and stock market. For the separate countries the variable *attack in country* is not significant, for none of the five countries investigated. This outcome is the same as it was when all countries are looked at together. There is no significant effect of terror attacks if there is looked at if the terror attack happened in one country and only that country is tested.

The outcomes of the dummies with *more than five fatalities* and *more than 60 injuries* have some significant outcomes. The terror attacks with more than five fatalities have a significant effect on the bond and stock market. However, both these results are positive, this implies that with a larger attack the effect will improve the bond and the stock market. This outcome is the opposite

26

of what happened with the overall outcome of the effect of terror attacks which have a negative influence on the bond market. The effect of the variable *more than 60 injuries* is significant for the stock market in the fixed effects regression, again these effects are positive just as with the effect of more than five casualties. Thus greater terror attacks have a positive influence on the bond or stock market. The reason for this effect can be explained as follows: if one country is badly hit, investors will invest more in the other four countries, instead of that one country that is hit. Then there can be a negative influence on the stock and bond market of the country, but because more is invested in other countries the overall stock and bond market will increase. This if there are more than 60 injured. And only the bond market will increase if there are more than 5 deaths.

When the countries are looked at separately (Fig. 2), some countries show a significant effect on the bond or stock market for the variables *more than 5 fatalities* and *more than 60 injured*. In case of terror attacks with more than 60 injured, they are significant for the stock market of the UK. This is like the test for all countries together a positive value. Further there is no significant effect on the bond market or stock market. For Belgium the greater attacks have no influence on the bond or stock market. When looked at the bond and stock market of France, there is, just as with Belgium, no significant influence of the greater terror attacks. For Germany the attacks with more than 5 deaths have a significant influence on the bond market of the country. The effect is 0.0014 which is just as with all countries together a positive variable. A reason for this, as already stated, can be that the bigger attack took place in another country and thus investors invest more in the bond of Germany and so have a positive effect. For Spain the same is true as for France, in case a terror attack has more than 60 injured the stock market has a significant positive influence. The reason for this can be the same as the reason why the bond market of Germany rises if there are more than 5 deaths.

The results obtained are somewhat different then the results from earlier research done by Chen and Siems (2004). In the research done by Chen and Siems (2004), there is a significant influence on the stock market. While in this research, it results that only the bond market has significant negative results and the stock market has no significant result. It can be possible that there are different outcomes between the research done here and the research done by Chen and Siems (2004). A reason can be that they only use 14 big terror attacks, for instance the attacks of 9/11 in the USA, where in this paper all of the attacks that happened in the selected countries are used.

27

Also the time period that is used by Chen and Siems (2004) is longer, from 1915 till 2001. It is possible that, in the past, attacks had more influence on the stock market as they have now. This for the reason that the news only became available when the attack was very big, otherwise it was much harder to know it happened as only local media covered it. This is also mentioned by Chen and Siems (2004). Thus because they look at older and bigger attacks their results can give different outcomes. The older attack they research is the attack by Japan on Pearl Harbor. Nowadays, new technology is a reason why the capital markets became more efficient. This because technology improved communications, makes it easier to acquire information, and makes it easier and faster to make transitions. Therefore, it is possible that their outcomes are different, because the attacks in this research are not that old, and because of the newer technology there is less effect on the stock markets.

Further the larger attacks, with more than five fatalities, have a significant influence on the bond and stock market but this is a positive variable, this is also different from the earlier research that stated that larger attacks have a higher negative influence than the smaller attacks. This is said by Eldor and Melnick (2004). Where Eldor and Melnick (2004) investigate all the terror attacks in Israel.

There is a significant reaction on the stock market in the research done by Cummins and Lewis (2003), but in this case the 9/11 terror attack is used, none of the attacks that happened in the time span for this research and in the five European countries was as big as that attack. The 9/11 attack had almost 3000 deaths and hit the financial sector directly, because in the World Trade Center there was important trading business among countries (Cummins & Lewis, 2003). Further also the pentagon was hit, a place that is one of the most secured and safe buildings in the world. The secure buildings could have impact because investors imagined that something like that would never be possible, but it still happened. These three things, an enormous amount of deaths, direct hit on the trading system, and the hit on a very secure building, could have resulted in a much greater effect on the stock market than the attacks in Europe, which were smaller, not directly on the trading business, and not on secure buildings. Most where bombings on public places.

Another difference can be that because in the Western world the capital market is more efficient than in countries such as Pakistan and Israel, where the most of the research is done. For instance, the research of Nguyen and Enomoto (2009). They investigate the effect of terror

attacks on the stock prices of companies in Pakistan and Iran. It is possible that for countries in the middle East, their capital markets are not as sophisticated as the capital markets of the Western European countries. And as said by Chen and Siems (2004) more advanced economies have a smaller reaction and the turnover reaction appears sooner in countries where the capital markets are more efficient. Another reason can be that in these countries there are more terror attacks than there are in Western Europe. This could have as effect that terror attacks have less influence because the people are more used to it, or that the attacks have more influence because investors are more pessimistic on the future. This as they assume more attacks will follow. According to the results of both researches, it appears to be leaning towards the second option, because the outcome is that there is a significant change in the stock market of these countries. This is not the case for the stock market of the European countries.

Eldor and Melnick (2004) also investigate the effects of terror attacks on an Eastern country, namely Israel. They use all of 639 terror attacks that happened during the period 1990-2003. This is lot more than the attacks that happened in the Western countries, and even in a shorter time span. The amount of terror attacks in the five countries together (UK, Belgium, France, Germany, and Spain) is 68, this is a lot less than the 639 attacks in Israel. They come to the conclusion that there is a significant negative effect on the stock market of Israel. They also find that the effects of the attacks do not become less with more attacks. Therefore, it is possible that with more attacks the influence is higher on the stock market. Another reason can be that the stock market is less efficient in Israel than in these Western countries and that therefore the reaction is bigger and significant. They do not investigate the effects on the bond market, thus it is not possible to make a distinction about that market between the Western countries and Israel.

Research such as the research done by Carter and Simkins (2001) and Berrebi and Klor (2005) are about the effect on companies separately. Where Berrebi and Klor (2001) look at the effects of terror attacks on the companies that are located in Israel, so they look at the effect of the stocks of single companies and they found that there is a significant effect when these companies are hit by a terror attack. The research done by Carter and Simkins (2001) is only looks at what the effect of a terror attack is on the aviation industry after 9/11. They concluded that there is a difference in the stock prices after this attack, and that airline companies with the lowest liquidity are hurt the most. This is again only looking at the stocks of one sector of companies (the aviation sector). But the outcomes of both investigations shows that there is a significant influence on the

stocks on companies, however the stock market in this case is not significantly influenced. This can be because both of these investigations look at the companies that where hit hardest by the terror attack. Whereas in this research the overall stock market is used.

Furthermore, big investment companies can react rationally on what the irrational investors do. Namely if they, the irrational traders sell of their stocks, the stock market declines and the big investment groups know that this happens and therefore, later that day buy the cheaper stocks. This will result in no significant price difference.

The other variables such as *GDP, first five days of tax year, and Monday* can have an influence on the stock and bond market, therefore these are implemented in the regression. Thus so it shows whether the outcome of the terror attack is influenced by these variables or not. In the appendix with the results of the separate countries, the regressions are also done without these control variables, in this case the results do not change, this is true for all the countries that are researched. Where *GDP, inflation, and unemployment rate* are the country characteristics of each of the five countries.

5.1. Results for hypothesis two

Fig. 3 . Effect of terror attacks on different targets

Country	Market	police	private citizens & property	transportation	business	military	government	religious	education	tourists
all	bondmarket	0.0000	0.0003	-0.0004	-0.0014	-0.0023	-0.0007	0.0013	-0.0055	-0.0001
		(0.42)	(4.25*)	(-3.00*)	(-4.52*)	(-5.61**)	(-1.53)	(2.49)	(-6.98**)	(-0.43)
	stockmarket	-0.0020	0.0030	0.0004	-0.0070	0.0012	-0.0000	0.0026	0.0140	0.0008
		(-15.29***)	(8.08**)	(0.43)	(-4.39*)	(1.60)	(-1.53)	(2.24)	(7.07**)	(1.81)
UK	bondmarket	0.0000	0.0003	-0.0007	-0.0010	-0.0016	-0.0023	0.0005	-0.0026	-0.0001
		(0.00)	(0.95)	(-0.48)	(-0.88)	(-1.55)	(-0.79)	(0.91)	(-0.81)	(-0.72)
	stockmarket	-0.0019	0.0018	0.0019	-0.0018	0.0002	-0.0025	-0.0010	0.0112	-0.0004
		(-0.79)	(1.24)	(1.22)	(-0.68)	(0.04)	(-1.07)	(-1.80)	(1.75)	(-1.12)
Belgium	bondmarket	-0.0002	0.0004	-0.0003	-0.0015	-0.0025	-0.0002	0.0004	-0.0068	0.0002
		(-0.28)	(0.88)	(-0.33)	(-1.03)	(-1.67)	(-0.18)	(1.35)	(-1.36)	(0.36)
	stockmarket	-0.0015	0.0038	0.0028	-0.0072	0.0034	0.0025	0.0024	0.0146	0.0011
		(-0.54)	(2.51*)	(1.64)	(-2.01*)	(1.64)	(0.90)	(4.06***)	(-1.61)	(0.57)
France	bondmarket	0.0003	0.0003	-0.0002	-0.0005	-0.0029	-0.0001	0.0009	-0.0065	-0.0003
		(0.44)	(0.78)	(-0.17)	(-0.47)	(-1.64)	(-0.12)	(0.94)	(-1.12)	(-2.67**)
	stockmarket	-0.0026	0.0023	-0.0031	-0.0080	0.0033	-0.0015	0.0023	0.0101	-0.0004
		(-0.86)	(1.59)	(-1.01)	(-1.94)	(0.76)	(-0.37)	(1.56)	(1.02)	(-1.01)
Germany	bondmarket	0.0000	0.0004	-0.0002	-0.0022	-0.0032	0.0002	0.0003	-0.0056	0.0004
		(-0.01)	(0.93)	(-0.19)	(-1.21)	(-1.96*)	(0.16)	(1.56)	(-1.32)	(0.63)
	stockmarket	-0.0019	0.0031	-0.0001	-0.0116	0.0007	0.0036	0.0018	0.0142	0.0008
		(-0.74)	(1.54)	(-0.08)	(-1.93)	(0.12)	(0.59)	(3.23**)	(1.84)	(1.08)
Spain	bondmarket	0.0002	0.0000	-0.0002	-0.0015	-0.0010	-0.0001	0.0031	-0.0059	-0.0002
		(0.44)	(0.14)	(-0.44)	(-1.13)	(-0.60)	(-0.07)	(1.24)	(-1.13)	(-0.61)
	stockmarket	-0.0015	0.0034	0.0017	-0.0061	0.0012	0.0000	0.0057	0.0226	0.0055
		(-0.42)	(1.26)	(0.39)	(-1.63)	(0.46)	(0.01)	(2.50*)	(2.25*)	(0.94)

Figure 3 shows the effect when terror attacks hit different targets. The different targets that are used are: police, private citizens & property, transportation, business, military, government, religious, education, and tourists. *All* stands for when the countries are looked at together. The first line represents the regression coefficient, the second line reflects the corresponding t-values. one, two, and three asterisks (*) indicate a significance level of 5%, 1% , and 0.1%. respectively

The second regression also tests for autocorrelation, heteroscedasticity and multicollinearity are done (Appendix A. 11, A.12, A.13, A.15 =, and A.22, respectively). These show that there is no autocorrelation. But, just as with the previous regression there is heteroscedasticity, thus again the command 'robust' is used. The VIF value was again a little more than 1, again indicating no multicollinearity. For all the tables on the effects of the targets see the appendix tables: A.15-A.20.

The second hypothesis is about whether the different targets have a significant different impact on the stock and bond market or not. As can be seen from the figure above (fig. 3) if the *police* is hit this will have a highly significant (p<0.001) effect on the stock market of the countries combined. The effect is significantly negative; this means that if an attack takes place on the police the stock market will decrease slightly. The effect of a terror attack on *private citizens and property* is also significant, for both markets, and not only the stock market as was with the police target. The other difference is that all the outcomes are positive, thus if the target of the attack is *private citizens and property,* the bond and stock market will increase because of the terror attack that took place in one of the five European countries.

The effect of a terror attack on *transportation* is only significant for the bond market. This shows that if transportation is hit, the bond market will decrease because of the attack. The reason for this is that the variable has a negative coefficient. The effect of an attack on the *business* sector has also a negative coefficient and it is significant for the bond and the stock market. This means that an attack on a business target will have a significant negative influence on the bond and stock market of the countries. The effect of this target is larger than the negative effect of an attack on the police on the stock market. A reason for this can be that the stock and bond market are regulated by businesses and therefore the investors assume that it will have more effect on the stock and bond market and react therefore more than when the attack hits a police station.

An attack on the *government* of a country has no significant effect at all on the stock or the bond market. A religious target has, just as the target government, not a significant effect on the bond or stock market of the countries combined. If the target of an attack is education, then there is a highly significant effect of the attack on the bond and stock market. The coefficient for the bond market is negative, also the highest negative amount for bond market (-0.0055), the bond market of the five European countries will decline if an attack takes place on education. The effect on the stock market is the opposite as the effect on the bond market, namely on the stock

32

market the target education has a significant positive influence of 0.0140. Thus if there is an attack on education the bond market will decrease and the stock market will increase. If the attack takes place on *tourists* there is no significant effect on either the bond or stock market for all countries combined.

For the UK none of the targets have a significant effect on either the bond or the stock market. This is not in line with the different effects of different targets for all countries together where there are significant effects for six different targets (Private citizens & property, Police, transportation, business, military, and education).

For Belgium three different targets have a significant effect on the stock market. These are the targets *private citizens & property, business,* and *religious*. The *target private citizens & property* has a positive influence on the stock market. The effect of the *business* target is a negative effect, where the target *business* also had a significant negative effect for all countries combined. The effect of the *religious* target is positive. For all the countries together there was no significant reaction if an attack happened on the target religious.

The different targets have no significant influence in France. The same was true for the UK. The target *military* is in Germany significant for the bond market. The effect is, just as when there is looked at all countries together, a negative effect. Further the effect of the target *religious* is significant on the stock market of Germany. The effect of the target *religious* on the stock market of Germany is positive. Where if looked at the countries together there is no significant effect if an attack happened on the target *religious.*

In Spain two targets have a significant effect on the stock market. These two targets are *religious* and *education.* If the attack happened on the target *religious,* this has a positive effect on the stock market of Spain. The same result was true for Germany. Where, if the target of the terror attack was *education*, there is also a positive effect on the stock market of Spain. The same is true if all countries are looked at together.

It is not possible to see if there are differences between the existing literature and these outcomes, because the different effect of the targets is not researched before. To conclude on the second hypothesis: There is a different reaction on the stock and bond market if different targets are hit, and is therefore not rejected. For instance the target *police* has a significant negative influence on the stock market, where the target *private citizens & property* has a significant negative

influence. This shows that if a terror attack takes place on a different target, this has other influences.

The other variables such as, first five days of tax year, and Monday are (just as with the previous hypothesis) the control variables. To see if these have an impact on the results, this is not the case (these results can be found in the appendix tables A.15-A. 20.

6. Conclusion

Overall terror attacks do have a significant negative effect on the bond market of the five European countries (United Kingdom, Belgium, France, Germany, and Spain). On the other hand, there is no significant effect on the stock market of these countries. These are mixed effects. One would suggest that if the attack have a significant effect on the bond market, the stock market would also be significantly influenced. This is not the case. A reason can be that stock markets needs to have a larger impact to be significantly influenced, where for the bond market a smaller impact is sufficient. Another reason can be that, because the stock market is more volatile, the effect is reversed at the same day. This shows that there are differences in how both markets react on a terror attack.

For the countries separately, only Belgium has a significant effect on the bond market and none of the other countries experience a significant effect of the terror attack on their bond or stock markets. A reason that the Belgium bond market has a negative significant effect on the bond market can be that the bond market of Belgium is more vulnerable than the bond market of the other countries.

It is even the case that if the attack takes place in the country that is tested there is no significant effect at all. Thus hypothesis one, that there is an effect of a terror attack on the bond and stock market of Western European countries, is partly rejected. It is accepted for the bond market for the countries, but rejected for the stock market. Further the larger attacks have a significant effect, but this effect is positive. The hypothesis is also rejected for the countries separately, because only Belgium has a significant effect for the bond market, and the other countries have no significant effects on the bond and stock market.

The results for the target hypothesis, the hypothesis that different targets have different effects on the stock and bond market, is not rejected. The reason is that the outcomes differ among the investigated targets. Where some of the targets have a negative influence, others have a positive influence or not even a significant influence at all. The target that is hit has thus an effect on how the stock or bond markets are influenced. The effect on education and business was the largest. Education can be because in that case children are hit, which has more effect on people than when adults are hit. Further business has a large influence in this case. This can have two reasons. The first reason is that the trade takes place in companies and that if these are hit less can

35

be traded. The second reason can be that when companies are hit, the traders think that the attacks are coming closer to them and will therefore invest less, it is closer to home.

Despite the fact that the reaction on the terror attacks in these western countries is not enormous, there is a reaction which means that if there is a terror attack this will lower the bond market of the countries, not the stock market. The effect of terror attacks on different targets have a different impact on the stock and bond market of the European countries.

7. Discussion

An improvement for the next research in this field is to also use the GARCH method in the results part. This will most likely give better outcomes. This method tests whether the attacks have an effect on the volatility on the bond and stock market after a terror attack. In case of a higher volatility, there is more risk in investing in the bond or stock market. Using this method, it can be seen whether the prices of the stocks and bonds fluctuate more as an effect of the terror attack or not.

Another test can be done to see if there are more transactions after terror attacks. This can possibly show that more individual investors sell their stocks and that the bigger companies buy these at a lower price where after prices can rise again. In this case, many transactions can lead to no significant changes in the stock market.

In this research the same values for a Friday are used for the weekend. The reason here for is that during the weekend the rates do not change, and thus the entire effect of an attack will be visible on Monday. In case that an average rate is used for the weekend, a part of the decline from the terror attacks during the weekend could be implemented in making this average and thus will the effect be smaller than when just the value of Friday is used.

Further more European countries or a larger time span can be used to acquire even more attacks. With more countries and more attacks, it is possible that the outcomes have more impact, or a different impact. With more countries and attacks the researched base is better and therefore it is possible to make better assumptions about the effect of terror attacks. A bigger data set could help to generalize the effect of terror attacks in Europe.

As last the latest attacks are not used in this research. The reason for this is that the databases contains information about terror attacks until 2014. As a result, three big attacks that happened, Charlie Hebdo on the seventh of January 2015 with eleven deaths, Paris on the thirteenth of November 2015 with more than 130 deaths , and Brussels on March 22 2016 that cost the lives of more than 30 persons, are not included in this research.

As investigated in the result section of this research, the results are not the same as in other research. For instance the research of Chen and Siems (2004) found a significant effect on the stock market. So did Eldor and Melnick (2004). However as stated in the results there is no significant reaction on the stock market the research done here. In the result section is explained why it can be possible that the research, done by Chen and Siems (2004) and Eldor and Melnick(2004), did find a significant effect on the stock market where the research done here has no significant effect on the stock market. For the bond market, where there is a significant reaction, no other research can be found that looks at the effect of terror attacks on the bond market.

The effect of terror attacks on different target types which is researched in this paper, is not studied in different papers, thus this cannot be compared to other research. This conclusion is also drawn in the result section, section 5.2.

The research that is most comparable to the research done here is the research by Eldor and Melnick (2004). Eldor and Melnick (2004) also look at all attacks that happened in a specific time period, and not just the big attacks. Further Eldor and Melnick (2004) make a distinction between bigger attacks and smaller attacks. Difference are that Eldor and Melnick (2004) do not look at the bond market or different targets and the country Israel is used by them and not Western European countries. Despite that the conclusion of their paper is different from the conclusion that is made here, the research done by Eldor and Melnick (2004) is the most equal to this than other research. like for instance the research done by Chesney, Reshetar & Karaman (2011) who only investigate the big attacks, such as the attack that happened on 9/11 on the USA. Or the research done by Carter and Simkins (2001) looks only at the stock market of the aviation industry after the 9/11 terror attack. Thus they only use one attack, where in the research that is made here all terror attacks of a specific time period are used, and Carter and Simkins (2001) look only at the aviation sector and not the entire stock market. In the results section more differences, and why these differences between the results can exist, are explained in the results section.

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43

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9. Appendix

A.1: All regression models for the effects of terror attacks

effects on stock and bond

	(1) bond	(2) stock	(3) bondfixede~s	(4) stockfixed~s	(5) bondre	(6) stockre
attackincountry	-0.0000870	-0.000981	-0.000113	-0.00112	-0.0000870	-0.000981
	(-0.17)	(-0.74)	(-0.26)	(-2.22)	(-0.20)	(-0.27)
fivedaysbefore	-0.000115	-0.00168*	-0.0000832	-0.00166**	-0.000115	-0.00168
	(-0.56)	(-2.43)	(-0.60)	(-7.95)	(-0.85)	(-1.09)
fourdaysbefore	-0.000304	-0.000537	-0.000270*	-0.000513	-0.000304**	-0.000537
	(-1.60)	(-0.80)	(-2.84)	(-1.67)	(-2.85)	(-0.35)
threedaysbefore	-0.000306	0.00147	-0.000272**	0.00149	-0.000306***	0.00147
	(-1.72)	(1.95)	(-5.09)	(2.11)	(-5.47)	(0.96)
twodaysbefore	-0.00402	-0.0159	-0.00398	-0.0159	-0.00402	-0.0159***
	(-1.49)	(-1.31)	(-1.88)	(-1.57)	(-1.89)	(-10.59)
onedaybefore	-0.000272	-0.000520	-0.000234	-0.000483	-0.000272	-0.000520
	(-1.82)	(-0.99)	(-1.15)	(-2.20)	(-1.43)	(-0.36)
eventday	-0.000690**	-0.000417	-0.000647***	-0.000350	-0.000690***	-0.000417
	(-3.07)	(-0.57)	(-8.98)	(-0.93)	(-8.74)	(-0.24)
onedayafter	-0.000107	0.000604	-0.0000692	0.000641	-0.000107	0.000604
	(-0.57)	(0.98)	(-0.75)	(1.92)	(-1.23)	(0.42)
twodaysafter	-0.000135	0.000192	-0.0000966	0.000230	-0.000135	0.000192
	(-0.78)	(0.35)	(-0.74)	(0.73)	(-1.07)	(0.13)
threedaysafter	0.000117	0.00104	0.000154	0.00108**	0.000117	0.00104
	(0.56)	(1.58)	(1.29)	(5.17)	(1.03)	(0.71)
morethan5fatalities	0.00123**	0.00143	0.00123**	0.00147**	0.00123***	0.00143
	(3.12)	(1.11)	(5.11)	(4.76)	(5.03)	(0.26)
morethan60injured	-0.000267	0.00471***	-0.000264	0.00470**	-0.000267	0.00471
	(-0.59)	(3.49)	(-0.60)	(8.21)	(-0.60)	(1.18)
GDP	1.95e-08	-2.05e-08	0.000000136*	-3.44e-08	1.95e-08	-2.05e-08
	(0.51)	(-0.17)	(2.80)	(-0.19)	(0.86)	(-0.12)
inflation	-0.0000694*	-0.000590*	-0.0000960	-0.000688*	-0.0000694	-0.000590***
	(-2.10)	(-2.15)	(-2.12)	(-3.43)	(-1.92)	(-4.10)
unemployment rate	0.00000847	-0.0000343	-0.000000755	-0.0000934	0.00000847*	-0.0000343
	(1.12)	(-0.48)	(-0.13)	(-1.35)	(2.12)	(-0.99)
first five days taks	0.0000631	0.00166**	0.0000649	0.00166*	0.0000631	0.00166
	(0.38)	(2.97)	(0.48)	(3.86)	(0.46)	(1.44)
Monday	-0.0000857	0.000634	-0.0000855	0.000634	-0.0000857	0.000634
	(-0.62)	(1.07)	(-0.62)	(1.95)	(-0.62)	(1.28)
Tuesday	-0.000183	0.00103	-0.000183	0.00103	-0.000183	0.00103*
	(-1.30)	(1.72)	(-1.55)	(2.55)	(-1.56)	(2.09)
Wednesday	-0.000101	0.000570	-0.000101	0.000570	-0.000101	0.000570
	(-0.71)	(0.95)	(-0.78)	(1.23)	(-0.78)	(1.15)
Thursday	-0.000211	0.000651	-0.000211	0.000652	-0.000211	0.000651
	(-1.44)	(1.05)	(-1.88)	(1.46)	(-1.89)	(1.32)
Constant	0.000246	0.00108	0.000191	0.00189	0.000246***	0.00108
	(1.51)	(1.09)	(2.03)	(1.65)	(4.46)	(1.59)
Observations	27777	27777	27777	27777	27777	27777

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

46

A. 2 AUTOCORRELATION STOCK

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,       4) =      22.552
           Prob > F =       0.0090
```

A. 3 AUTOCORRELATION BOND

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F(  1,       4) =      22.833
           Prob > F =       0.0088
```

A. 4 HETEROSKEDASTICITY BOND

```
Cross-sectional time-series FGLS regression

Coefficients:  generalized least squares
Panels:        heteroskedastic
Correlation:   no autocorrelation

Estimated covariances      =          5          Number of obs      =     27,777
Estimated autocorrelations =          0          Number of groups   =          5
Estimated coefficients     =         15          Obs per group:
                                                              min =       5,555
                                                              avg =     5,555.4
                                                              max =       5,556
                                                 Wald chi2(14)      =      45.68
Log likelihood             =   105391.7          Prob > chi2        =     0.0000
```

A. 5 HETEROSKEDASTICITY STOCK MARKET

```
Cross-sectional time-series FGLS regression

Coefficients:  generalized least squares
Panels:        heteroskedastic
Correlation:   no autocorrelation

Estimated covariances      =          5          Number of obs      =     27,777
Estimated autocorrelations =          0          Number of groups   =          5
Estimated coefficients     =         15          Obs per group:
                                                              min =       5,555
                                                              avg =     5,555.4
                                                              max =       5,556
                                                 Wald chi2(14)      =      42.51
Log likelihood             =   69640.56          Prob > chi2        =     0.0001
```

A. 6 Regression UK

	(1) bond all	(2) stock all	(3) bond count~y	(4) stock coun~y	(5) bond only ~y	(6) stock only~y
attackcountry	-0.00135 (-1.08)	-0.00271 (-1.75)	-0.000902 (-0.78)	-0.00152 (-0.86)	-0.00121 (-1.17)	-0.000492 (-0.37)
fivedaysbefore	0.0000391 (0.08)	-0.00185 (-1.10)				
fourdaysbefore	-0.0000818 (-0.15)	0.000657 (0.51)				
threedaysbefore	-0.000300 (-0.69)	0.000618 (0.46)				
twodaysbefore	-0.0000643 (-0.12)	0.00229 (1.09)				
onedaybefore	-0.000825* (-2.44)	-0.000548 (-0.57)				
eventday	-0.000574 (-1.05)	0.000332 (0.27)	-0.000313 (-0.60)	0.00103 (0.88)		
onedayafter	-0.000292 (-0.67)	-0.000451 (-0.46)				
twodaysafter	-0.000591 (-1.41)	-0.000546 (-0.50)				
threedaysafter	-0.000298 (-0.54)	0.000890 (0.66)				
morethan5fatalities	0.00179 (1.63)	0.00241 (1.17)				
morethan60injured	0.000904 (0.99)	0.00413* (2.02)				
inflation	0.000114 (1.34)	-0.000317 (-1.00)				
GDP	-2.82e-08 (-0.25)	0.000000279 (0.94)				
unemployment rate	-0.0000664 (-1.25)	0.000213 (1.35)				
first five days taks	-0.0000703 (-0.20)	0.000267 (0.31)				
Monday	-0.0000588 (-0.36)	-0.000223 (-0.45)				
Tuesday	-0.000259 (-1.53)	0.0000908 (0.19)				
Wednesday	-0.000232 (-1.31)	-0.000844 (-1.81)				
Thursday	-0.000294 (-1.61)	-0.000317 (-0.67)				
Constant	0.000520 (1.30)	-0.000951 (-0.78)	0.0000728 (1.34)	0.000110 (0.71)	0.0000700 (1.29)	0.000119 (0.78)
Observations	5555	5555	5555	5555	5555	5555

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

A. 7 REGRESSION BELGIUM

	(1) bond all	(2) stock all	(3) bond count~y	(4) stock coun~y	(5) bond only ~y	(6) stock only~y
attackcountry	-0.000450 (-0.28)	-0.00105 (-0.31)	-0.000496 (-0.31)	-0.00152 (-0.45)	-0.00124 (-0.80)	-0.000590 (-0.18)
fivedaysbefore	-0.000319 (-0.79)	-0.00194 (-1.63)				
fourdaysbefore	-0.000409 (-1.11)	-0.00109 (-0.86)				
threedaysbefore	-0.0000887 (-0.24)	0.000890 (0.69)				
twodaysbefore	0.000266 (0.66)	0.00231 (1.11)				
onedaybefore	-0.000282 (-1.02)	-0.000998 (-1.09)				
eventday	-0.000925* (-2.01)	0.000109 (0.08)	-0.000749 (-1.94)	0.000936 (0.83)		
onedayafter	-0.000266 (-0.71)	0.000701 (0.68)				
twodaysafter	-0.0000480 (-0.13)	-0.000335 (-0.38)				
threedaysafter	0.000320 (0.81)	0.000520 (0.43)				
morethan5fatalities	0.00119 (1.74)	0.00124 (0.55)				
morethan60injured	-0.000215 (-0.24)	0.00335 (1.35)				
inflation	-0.0000782 (-1.57)	-0.000378 (-1.93)				
GDP	0.000000356 (0.81)	-0.000000120 (-0.08)				
unemployment rate	-0.0000372 (-0.67)	0.000365* (2.03)				
first five days taks	-0.000177 (-0.47)	0.00177 (1.55)				
Monday	-0.000393** (-2.64)	0.000118 (0.23)				
Tuesday	-0.000406** (-2.76)	-0.0000106 (-0.02)				
Wednesday	-0.000266 (-1.79)	0.000210 (0.44)				
Thursday	-0.000458** (-2.96)	-0.0000342 (-0.07)				
Constant	0.000748 (1.38)	-0.00215 (-1.07)	0.000110* (2.30)	0.000135 (0.85)	0.000102* (2.15)	0.000145 (0.92)
Observations	5554	5554	5555	5555	5555	5555

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

49

A. 8 REGRESSION FRANCE

```
regression France
```

	(1) bond all	(2) stock all	(3) bond count~y	(4) stock coun~y	(5) bond only ~y	(6) stock only~y
attackcountry	0.00160 (1.62)	-0.000988 (-0.35)	0.00135 (1.17)	-0.000467 (-0.17)	0.000837 (0.78)	-0.000623 (-0.27)
fivedaysbefore	0.000329 (0.75)	-0.000879 (-0.59)				
fourdaysbefore	-0.000172 (-0.43)	-0.000364 (-0.22)				
threedaysbefore	-0.000219 (-0.55)	0.000337 (0.20)				
twodaysbefore	-0.0000402 (-0.09)	0.00247 (1.05)				
onedaybefore	-0.000447 (-1.26)	-0.000637 (-0.56)				
eventday	-0.000597 (-1.14)	-0.00117 (-0.75)	-0.000518 (-1.13)	-0.000158 (-0.11)		
onedayafter	0.000236 (0.60)	0.000296 (0.19)				
twodaysafter	-0.000131 (-0.35)	0.0000271 (0.02)				
threedaysafter	0.000341 (0.66)	0.00178 (1.12)				
morethan5fatalities	0.00182 (1.89)	0.00142 (0.45)				
morethan60injured	-0.00186 (-1.44)	0.00532 (1.68)				
inflation	-0.0000188 (-0.25)	-0.000519 (-1.73)				
GDP	0.000000107 (1.03)	0.000000162 (0.35)				
unemployment rate	-0.0000102 (-0.25)	0.000215 (1.31)				
first five days taks	0.000142 (0.40)	0.00124 (0.91)				
Monday	-0.000371* (-2.45)	-0.000106 (-0.17)				
Tuesday	-0.000490** (-3.22)	0.000453 (0.80)				
Wednesday	-0.000445** (-2.85)	-0.000109 (-0.19)				
Thursday	-0.000382* (-2.39)	-0.0000289 (-0.05)				
Constant	0.000332 (0.54)	-0.00168 (-0.63)	0.00000415 (0.04)	0.0000503 (0.25)	-0.000000804 (-0.01)	0.0000488 (0.24)
Observations	5555	5555	5556	5556	5556	5556

```
t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001
```

A. 9 REGRESSION GERMANY

```
regression Germany
```

	(1) bond all	(2) stock all	(3) bond count~y	(4) stock coun~y	(5) bond only ~y	(6) stock only~y
attackcountry	0.0000781 (0.06)	-0.00153 (-0.45)	-0.0000937 (-0.08)	-0.00291 (-0.85)	-0.000785 (-0.71)	-0.00295 (-0.93)
fivedaysbefore	-0.0000265 (-0.05)	-0.00188 (-1.10)				
fourdaysbefore	-0.000576 (-1.40)	-0.000839 (-0.47)				
threedaysbefore	-0.000285 (-0.78)	0.00428 (1.86)				
twodaysbefore	-0.0102 (-0.98)	-0.00982 (-0.97)				
onedaybefore	0.000394 (1.22)	-0.000911 (-0.65)				
eventday	-0.000754 (-1.38)	-0.00112 (-0.58)	-0.000786 (-1.78)	-0.0000390 (-0.02)		
onedayafter	0.0000171 (0.04)	0.000711 (0.40)				
twodaysafter	0.0000493 (0.12)	0.000248 (0.18)				
threedaysafter	0.000316 (0.82)	0.00116 (0.67)				
morethan5fatalities	0.00147* (2.39)	0.00175 (0.48)				
morethan60injured	-0.000828 (-0.89)	0.00633 (1.39)				
inflation	-0.000453 (-1.22)	-0.000806 (-1.76)				
GDP	0.000000280 (1.42)	0.000000536 (1.24)				
unemployment rate	0.0000214 (0.44)	0.000225 (1.85)				
first five days taks	-0.000138 (-0.38)	0.00225 (1.59)				
Monday	0.000387 (0.80)	0.00103 (1.32)				
Tuesday	0.000190 (0.39)	0.00104 (1.39)				
Wednesday	0.000285 (0.58)	0.000758 (1.02)				
Thursday	0.000155 (0.30)	0.000314 (0.41)				
Constant	-0.000371 (-0.48)	-0.00253 (-1.21)	-0.0000223 (-0.17)	0.000155 (0.68)	-0.0000305 (-0.24)	0.000154 (0.68)
Observations	5556	5556	5556	5556	5556	5556

```
t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001
```

A. 10 Regression Spain

	(1) bond all	(2) stock all	(3) bond count~y	(4) stock coun~y	(5) bond only ~y	(6) stock only~y
attackcountry	-0.000299	0.0000973	-0.000373	0.000613	-0.000606	0.000342
	(-0.35)	(0.03)	(-0.42)	(0.21)	(-0.77)	(0.13)
fivedaysbefore	-0.000445	-0.00168				
	(-0.97)	(-0.99)				
fourdaysbefore	-0.000128	-0.000907				
	(-0.33)	(-0.60)				
threedaysbefore	-0.000472	0.00137				
	(-1.10)	(0.87)				
twodaysbefore	-0.00170	-0.0520				
	(-0.82)	(-0.96)				
onedaybefore	-0.000107	0.000341				
	(-0.29)	(0.22)				
eventday	-0.000511	-0.000384	-0.000245	-0.000286		
	(-1.15)	(-0.17)	(-0.61)	(-0.18)		
onedayafter	-0.000164	0.00152				
	(-0.35)	(0.93)				
twodaysafter	0.000133	0.00137				
	(0.34)	(0.85)				
threedaysafter	0.0000763	0.000990				
	(0.16)	(0.63)				
morethan5fatalities	0.000323	0.000310				
	(0.36)	(0.09)				
morethan60injured	0.000615	0.00450*				
	(0.60)	(2.03)				
inflation	-0.000121*	-0.00107				
	(-2.23)	(-1.43)				
GDP	-0.000000156	-0.000000821				
	(-0.90)	(-1.18)				
unemployment rate	0.00000112	-0.000168				
	(0.09)	(-1.07)				
first five days taks	0.000558	0.00276*				
	(1.35)	(2.07)				
Monday	-0.000354	0.00126				
	(-1.67)	(0.51)				
Tuesday	-0.000323	0.00246				
	(-1.64)	(0.98)				
Wednesday	-0.000217	0.00171				
	(-1.09)	(0.68)				
Thursday	-0.000461*	0.00216				
	(-2.23)	(0.83)				
Constant	0.000874*	0.00524	0.000113	-0.000403	0.000111	-0.000405
	(2.13)	(1.90)	(1.79)	(-0.62)	(1.77)	(-0.63)
Observations	5556	5556	5556	5556	5556	5556

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

A. 11 AUTOCORRELATION BOND TARGET

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F( 1,      4) =    62.170
           Prob > F =     0.0014
```

A. 12 AUTOCORRELATION STOCK TARGET

```
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
    F( 1,      4) =    24.088
           Prob > F =     0.0080
```

A. 13 HETEROSKEDASTICITY BOND TARGET

```
Cross-sectional time-series FGLS regression

Coefficients:   generalized least squares
Panels:         heteroskedastic
Correlation:    no autocorrelation

Estimated covariances      =          5        Number of obs      =      27,779
Estimated autocorrelations =          0        Number of groups   =           5
Estimated coefficients     =         10        Obs per group:
                                                             min =       5,555
                                                             avg =     5,555.8
                                                             max =       5,556
                                               Wald chi2(9)       =       14.37
Log likelihood             =   101313.8        Prob > chi2        =      0.1097
```

logbond	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
police	.0001324	.0007735	0.17	0.864	-.0013837	.0016485
privatecitizensproperty	.0003098	.0005355	0.58	0.563	-.0007398	.0013595
transportation	-.0004093	.0008999	-0.45	0.649	-.0021731	.0013544
Business	-.0013134	.0008485	-1.55	0.122	-.0029764	.0003496
military	-.00191	.001138	-1.68	0.093	-.0041404	.0003203
government	-.0011021	.0009619	-1.15	0.252	-.0029875	.0007832
religious	.0015193	.0017988	0.84	0.398	-.0020063	.0050448
education	-.004601	.0017988	-2.56	0.011	-.0081266	-.0010755
tourists	-.0000632	.0025437	-0.02	0.980	-.0050487	.0049223
_cons	.0000632	.0000343	1.84	0.066	-4.07e-06	.0001305

```
Cross-sectional time-series FGLS regression

Coefficients:  generalized least squares
Panels:        heteroskedastic
Correlation:   no autocorrelation

Estimated covariances      =          5      Number of obs      =      27,779
Estimated autocorrelations =          0      Number of groups   =           5
Estimated coefficients     =         10      Obs per group:
                                                              min =       5,555
                                                              avg =     5,555.8
                                                              max =       5,556
                                             Wald chi2(9)       =       13.66
Log likelihood             =  69321.66       Prob > chi2        =      0.1351
```

logstock	Coef.	Std. Err.	z	P>|z|	[95% Conf. Interval]	
police	-.0022064	.0022623	-0.98	0.329	-.0066403	.0022275
privatecitizensproperty	.0023984	.0015662	1.53	0.126	-.0006713	.0054681
transportation	.0001428	.0026318	0.05	0.957	-.0050155	.005301
Business	-.0059176	.0024815	-2.38	0.017	-.0107813	-.001054
military	.0012688	.0033281	0.38	0.703	-.0052542	.0077917
government	-.0006301	.0028133	-0.22	0.823	-.0061439	.0048838
religious	.0008738	.0052607	0.17	0.868	-.0094371	.0111846
education	.0114711	.0052607	2.18	0.029	.0011603	.0217819
tourists	-.0000678	.0074391	-0.01	0.993	-.0146482	.0145125
_cons	.0000678	.0001004	0.68	0.499	-.0001289	.0002646

A. 15 All regressions for all countries (target)

```
models targets
```

	(1) bondrt	(2) stockrt	(3) bondfet	(4) stockfet	(5) bondrt	(6) stockrt
police	0.0000573	-0.00205	0.0000573	-0.00205***	0.0000573	-0.00205***
	(0.18)	(-1.50)	(0.42)	(-15.29)	(0.42)	(-15.29)
private citizens &~y	0.000322	0.00302***	0.000322*	0.00302**	0.000322***	0.00302***
	(1.88)	(3.58)	(4.25)	(8.08)	(4.25)	(8.08)
transportation	-0.000374	0.000399	-0.000374*	0.000399	-0.000374**	0.000399
	(-0.75)	(0.37)	(-3.00)	(0.43)	(-3.00)	(0.43)
Business	-0.00143*	-0.00704***	-0.00143*	-0.00704*	-0.00143***	-0.00704***
	(-2.24)	(-3.72)	(-4.52)	(-4.39)	(-4.52)	(-4.39)
military	-0.00233***	0.00123	-0.00233**	0.00123	-0.00233***	0.00123
	(-3.33)	(0.67)	(-5.61)	(1.60)	(-5.61)	(1.60)
government	-0.000660	-0.0000274	-0.000660	-0.0000274	-0.000660	-0.0000274
	(-0.84)	(-0.02)	(-1.53)	(-0.02)	(-1.53)	(-0.02)
religious	0.00129	0.00259*	0.00129	0.00259	0.00129*	0.00259*
	(1.94)	(2.39)	(2.49)	(2.24)	(2.49)	(2.24)
education	-0.00546*	0.0140***	-0.00546**	0.0140**	-0.00546***	0.0140***
	(-2.56)	(3.36)	(-6.98)	(7.07)	(-6.98)	(7.07)
tourists	-0.0000478	0.000830	-0.0000478	0.000830	-0.0000478	0.000830
	(-0.27)	(1.22)	(-0.43)	(1.81)	(-0.43)	(1.81)
first five days taks	0.000128	0.00186**	0.000128	0.00186*	0.000128	0.00186***
	(0.75)	(3.23)	(1.02)	(3.54)	(1.02)	(3.54)
Monday	0.0000510	0.000899	0.0000510	0.000899	0.0000510	0.000899*
	(0.28)	(1.28)	(0.39)	(2.39)	(0.39)	(2.39)
Tuesday	-0.0000496	0.00124	-0.0000496	0.00124	-0.0000496	0.00124**
	(-0.27)	(1.78)	(-0.48)	(2.64)	(-0.48)	(2.64)
Wednesday	0.0000223	0.000794	0.0000223	0.000794	0.0000223	0.000794
	(0.12)	(1.14)	(0.20)	(1.54)	(0.20)	(1.54)
Thursday	-0.0000926	0.000858	-0.0000926	0.000858	-0.0000926	0.000858
	(-0.51)	(1.23)	(-0.78)	(1.74)	(-0.78)	(1.74)
Constant	0.0000478	-0.000830	0.0000478	-0.000830	0.0000478	-0.000830
	(0.27)	(-1.22)	(0.55)	(-2.26)	(0.43)	(-1.81)
Observations	27779	27779	27779	27779	27779	27779

```
t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001
```

A.16 REGRESSION UK TARGETS

regression United Kingdom targets

	(1) bondtarget~l	(2) stocktarge~l	(3) bondtarget~C	(4) stocktarge~C	(5) bondtarget~s	(6) stocktarge~s
police	-0.00000104	-0.00197	0.00000845	-0.00202	0.0000587	-0.00198
	(-0.00)	(-0.79)	(0.01)	(-0.78)	(0.06)	(-0.77)
private citizens &~y	0.000354	0.00178	0.000334	0.00179	0.000388	0.00191
	(0.95)	(1.24)	(0.91)	(1.25)	(1.08)	(1.34)
transportation	-0.000687	0.00188	-0.000755	0.00195	-0.000689	0.00187
	(-0.48)	(1.22)	(-0.52)	(1.28)	(-0.48)	(1.28)
Business	-0.00104	-0.00178	-0.00109	-0.00175	-0.00107	-0.00160
	(-0.88)	(-0.68)	(-0.92)	(-0.66)	(-0.88)	(-0.61)
military	-0.00167	0.000178	-0.00165	0.00000724	-0.00169	0.000241
	(-1.55)	(0.04)	(-1.57)	(0.00)	(-1.62)	(0.05)
government	-0.00227	-0.00253	-0.00237	-0.00239	-0.00240	-0.00248
	(-0.79)	(-1.07)	(-0.81)	(-1.04)	(-0.83)	(-1.05)
religious	0.000522	-0.00102	0.000502	-0.000772*	0.000544	-0.000948
	(0.91)	(-1.80)	(0.98)	(-1.99)	(1.24)	(-1.55)
education	-0.00260	0.0112	-0.00245	0.0108	-0.00231	0.0110
	(-0.81)	(1.75)	(-0.80)	(1.77)	(-0.75)	(1.80)
tourists	-0.000128	-0.000426	-0.000211	-0.000335	-0.0000727	-0.000113
	(-0.72)	(-1.12)	(-1.71)	(-1.05)	(-1.34)	(-0.73)
inflation	0.000114	-0.000325				
	(1.33)	(-1.02)				
GDP	-6.93e-09	0.000000264				
	(-0.06)	(0.89)				
unemployment rate	-0.0000664	0.000217				
	(-1.25)	(1.36)				
first five days taks	-0.0000413	0.000233	-0.0000426	0.000237		
	(-0.12)	(0.27)	(-0.12)	(0.27)		
Monday	-0.0000273	-0.000186	-0.0000267	-0.000184		
	(-0.17)	(-0.38)	(-0.16)	(-0.38)		
Tuesday	-0.000220	0.000110	-0.000219	0.000111		
	(-1.31)	(0.24)	(-1.30)	(0.24)		
Wednesday	-0.000194	-0.000797	-0.000193	-0.000797		
	(-1.11)	(-1.72)	(-1.11)	(-1.72)		
Thursday	-0.000258	-0.000274	-0.000257	-0.000274		
	(-1.43)	(-0.58)	(-1.42)	(-0.58)		
Constant	0.000420	-0.000942	0.000211	0.000335	0.0000727	0.000113
	(1.06)	(-0.78)	(1.71)	(1.05)	(1.34)	(0.73)
Observations	5555	5555	5555	5555	5555	5555

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

A.17 REGRESSION BELGIUM TARGETS

	(1) bondtarget~l	(2) stocktarge~l	(3) bondtarget~C	(4) stocktarge~C	(5) bondtarget~s	(6) stocktarge~s
police	-0.000194	-0.00152	-0.000250	-0.00168	-0.000268	-0.00201
	(-0.28)	(-0.54)	(-0.36)	(-0.55)	(-0.40)	(-0.66)
private citizens &~y	0.000367	0.00381*	0.000296	0.00389**	0.000271	0.00332**
	(0.88)	(2.51)	(0.79)	(2.74)	(0.93)	(2.64)
transportation	-0.000306	0.00281	-0.000549	0.00259	-0.000533	0.00203
	(-0.33)	(1.64)	(-0.65)	(1.91)	(-0.66)	(1.88)
Business	-0.00151	-0.00724*	-0.00164	-0.00735*	-0.00167	-0.00759*
	(-1.03)	(-2.01)	(-1.11)	(-2.11)	(-1.13)	(-2.26)
military	-0.00247	0.00341	-0.00250	0.00307	-0.00253	0.00295
	(-1.67)	(1.64)	(-1.79)	(1.42)	(-1.80)	(1.48)
government	-0.000229	0.00258	-0.000413	0.00227	-0.000403	0.00233
	(-0.18)	(0.90)	(-0.31)	(0.80)	(-0.31)	(0.81)
religious	0.000586	0.00258***	0.000809	0.00302*	0.000847	0.00265
	(1.35)	(4.06)	(1.35)	(2.11)	(1.36)	(1.47)
education	-0.00685	0.0146	-0.00698	0.0140	-0.00703	0.0128
	(-1.56)	(1.32)	(-1.61)	(1.33)	(-1.63)	(1.24)
tourists	0.000227	0.00106	0.0000283	0.00125	-0.0000178	0.000136
	(0.36)	(0.57)	(0.06)	(0.93)	(-0.17)	(0.43)
inflation	-0.000169	-0.000661				
	(-1.59)	(-1.93)				
GDP	0.000000935	0.00000139				
	(1.35)	(0.63)				
unemployment rate	-0.000220	-0.000171				
	(-1.16)	(-0.30)				
first five days taks	-0.0000775	0.00209	-0.0000871	0.00205		
	(-0.20)	(1.75)	(-0.22)	(1.73)		
Monday	0.0000507	0.00142	0.0000552	0.00143		
	(0.11)	(1.03)	(0.12)	(1.03)		
Tuesday	0.0000330	0.00126	0.0000378	0.00124		
	(0.07)	(0.92)	(0.08)	(0.90)		
Wednesday	0.000163	0.00148	0.000168	0.00149		
	(0.36)	(1.09)	(0.37)	(1.08)		
Thursday	-0.0000239	0.00127	-0.0000198	0.00127		
	(-0.05)	(0.92)	(-0.04)	(0.92)		
Constant	0.00175	0.000910	-0.0000283	-0.00125	0.0000178	-0.000136
	(1.51)	(0.25)	(-0.06)	(-0.93)	(0.17)	(-0.43)
Observations	5555	5555	5556	5556	5556	5556

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

A.18 REGRESSION FRANCE TARGETS

	(1) bondtarget~l	(2) stocktarge~l	(3) bondtarget~C	(4) stocktarge~C	(5) bondtarget~s	(6) stocktarge~s
police	0.000307 (0.44)	-0.00262 (-0.86)	0.000516 (0.76)	-0.00245 (-0.76)	0.000524 (0.82)	-0.00249 (-0.78)
private citizens &~y	0.000294 (0.78)	0.00229 (1.59)	0.000503 (1.16)	0.00262 (1.81)	0.000492 (1.35)	0.00247 (1.71)
transportation	-0.000253 (-0.17)	-0.00306 (-1.01)	-0.0000543 (-0.03)	-0.00273 (-0.90)	-0.0000729 (-0.05)	-0.00297 (-0.98)
Business	-0.000543 (-0.47)	-0.00796 (-1.94)	-0.000465 (-0.40)	-0.00779 (-1.86)	-0.000464 (-0.40)	-0.00783 (-1.88)
military	-0.00292 (-1.64)	0.00333 (0.76)	-0.00287 (-1.67)	0.00316 (0.72)	-0.00290 (-1.71)	0.00335 (0.78)
government	-0.000154 (-0.12)	-0.00147 (-0.37)	-0.000165 (-0.13)	-0.00140 (-0.35)	-0.000169 (-0.13)	-0.00143 (-0.36)
religious	0.000974 (0.94)	0.00234 (1.56)	0.00126 (1.38)	0.00268 (1.54)	0.00124 (1.40)	0.00246 (1.37)
education	-0.00654 (-1.12)	0.0101 (1.02)	-0.00611 (-1.05)	0.00993 (1.05)	-0.00612 (-1.06)	0.00961 (1.02)
tourists	-0.000349** (-2.67)	-0.000427 (-1.01)	0.00000620 (0.01)	0.000262 (0.53)	-0.00000352 (-0.03)	-0.0000534 (-0.26)
inflation	-0.0000115 (-0.15)	-0.000512 (-1.70)				
GDP	0.000000110 (1.07)	0.000000123 (0.27)				
unemployment rate	-0.00000964 (-0.24)	0.000223 (1.36)				
first five days taks	0.000139 (0.39)	0.00125 (0.92)	0.000229 (0.62)	0.00131 (0.96)		
Monday	-0.000360* (-2.40)	-0.0000710 (-0.12)	0.0000629 (0.14)	0.000236 (0.35)		
Tuesday	-0.000475** (-3.15)	0.000445 (0.79)	-0.0000522 (-0.12)	0.000751 (1.16)		
Wednesday	-0.000446** (-2.89)	-0.000101 (-0.18)	-0.0000237 (-0.05)	0.000203 (0.32)		
Thursday	-0.000383* (-2.42)	-0.0000282 (-0.05)	0.0000399 (0.09)	0.000278 (0.42)		
Constant	0.000302 (0.49)	-0.00166 (-0.63)	-0.00000620 (-0.01)	-0.000262 (-0.53)	0.00000352 (0.03)	0.0000534 (0.26)
Observations	5555	5555	5556	5556	5556	5556

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

A. 19 REGRESSION GERMANY TARGET

	(1) bondtarget~l	(2) stocktarge~l	(3) bondtarget~C	(4) stocktarge~C	(5) bondtarget~s	(6) stocktarge~s
police	-0.00000978	-0.00197	-0.000164	-0.00222	-0.000300	-0.00241
	(-0.01)	(-0.74)	(-0.22)	(-0.82)	(-0.44)	(-0.91)
private citizens &~y	0.000396	0.00311	0.000424	0.00329	0.000285	0.00287
	(0.93)	(1.54)	(0.99)	(1.62)	(0.93)	(1.42)
transportation	-0.000162	-0.000152	-0.000206	-0.0000918	-0.000341	-0.000537
	(-0.19)	(-0.08)	(-0.24)	(-0.05)	(-0.45)	(-0.30)
Business	-0.00217	-0.0116	-0.00237	-0.0118*	-0.00242	-0.0119*
	(-1.21)	(-1.93)	(-1.33)	(-1.97)	(-1.35)	(-2.02)
military	-0.00317*	0.000692	-0.00347*	0.000108	-0.00352*	0.000121
	(-1.96)	(0.12)	(-2.22)	(0.02)	(-2.21)	(0.02)
government	0.000185	0.00363	-0.000151	0.00310	-0.000142	0.00304
	(0.16)	(0.59)	(-0.13)	(0.50)	(-0.12)	(0.49)
religious	0.000332	0.00181**	0.000581	0.00166*	0.000492	0.00133
	(1.56)	(3.23)	(1.62)	(1.98)	(1.38)	(1.24)
education	-0.00560	0.0142	-0.00569	0.0139	-0.00596	0.0131
	(-1.32)	(1.84)	(-1.35)	(1.82)	(-1.43)	(1.72)
tourists	0.000425	0.000841	0.000294	0.000622	0.0000227	-0.000153
	(0.63)	(1.09)	(0.51)	(0.91)	(0.18)	(-0.67)
inflation	-0.000451	-0.000820				
	(-1.19)	(-1.76)				
GDP	0.000000366	0.000000584				
	(1.33)	(1.26)				
unemployment rate	0.0000298	0.000236				
	(0.55)	(1.91)				
first five days taks	-0.0000154	0.00236	-0.0000358	0.00232		
	(-0.04)	(1.66)	(-0.09)	(1.62)		
Monday	0.000491	0.00119	0.000495	0.00120		
	(0.84)	(1.43)	(0.85)	(1.43)		
Tuesday	0.000284	0.00115	0.000289	0.00116		
	(0.49)	(1.44)	(0.50)	(1.44)		
Wednesday	0.000360	0.000873	0.000365	0.000881		
	(0.62)	(1.10)	(0.63)	(1.10)		
Thursday	0.000220	0.000448	0.000225	0.000455		
	(0.38)	(0.56)	(0.39)	(0.56)		
Constant	-0.000874	-0.00293	-0.000294	-0.000622	-0.0000227	0.000153
	(-0.74)	(-1.31)	(-0.51)	(-0.91)	(-0.18)	(0.67)
Observations	5556	5556	5556	5556	5556	5556

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

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A. 20 REGRESSION SPAIN TARGET

	(1) bondtarget~l	(2) stocktarge~l	(3) bondtarget~C	(4) stocktarge~C	(5) bondtarget~s	(6) stocktarge~s
police	0.000205 (0.44)	-0.00155 (-0.42)	0.000160 (0.33)	-0.00204 (-0.56)	0.000333 (0.78)	-0.00262 (-0.78)
private citizens &~y	0.0000411 (0.14)	0.00345 (1.26)	0.0000560 (0.19)	0.00353 (1.29)	0.000155 (0.56)	0.00262 (1.15)
transportation	-0.000242 (-0.44)	0.00174 (0.39)	-0.000305 (-0.57)	0.000281 (0.09)	-0.000138 (-0.27)	-0.000846 (-0.32)
Business	-0.00155 (-1.13)	-0.00610 (-1.63)	-0.00157 (-1.15)	-0.00654 (-1.90)	-0.00157 (-1.16)	-0.00686* (-2.21)
military	-0.00105 (-0.60)	0.00120 (0.46)	-0.00116 (-0.67)	-0.000188 (-0.09)	-0.00119 (-0.70)	0.000141 (0.08)
government	-0.0000820 (-0.07)	0.0000487 (0.01)	-0.000201 (-0.16)	-0.00172 (-0.50)	-0.000234 (-0.18)	-0.00163 (-0.47)
religious	0.00309 (1.24)	0.00572* (2.50)	0.00329 (1.27)	0.00637* (1.97)	0.00343 (1.37)	0.00552 (1.50)
education	-0.00591 (-1.13)	0.0226* (2.25)	-0.00607 (-1.16)	0.0211* (1.99)	-0.00583 (-1.11)	0.0192 (1.88)
tourists	-0.000175 (-0.61)	0.00550 (0.94)	-0.000356* (-2.15)	0.00235 (0.79)	-0.000112 (-1.77)	0.000404 (0.62)
inflation	-0.000122* (-2.20)	-0.00114 (-1.39)				
GDP	-0.000000118 (-0.67)	-0.000000205 (-0.19)				
unemployment rate	0.000000400 (0.03)	-0.000181 (-1.06)				
first five days taks	0.000583 (1.41)	0.00341* (2.29)	0.000578 (1.39)	0.00337* (2.28)		
Monday	-0.000333 (-1.52)	0.00179 (0.60)	-0.000331 (-1.51)	0.00182 (0.61)		
Tuesday	-0.000307 (-1.51)	0.00290 (0.98)	-0.000304 (-1.49)	0.00294 (0.98)		
Wednesday	-0.000207 (-1.01)	0.00215 (0.73)	-0.000205 (-0.99)	0.00219 (0.73)		
Thursday	-0.000452* (-2.13)	0.00253 (0.85)	-0.000450* (-2.11)	0.00256 (0.85)		
Constant	0.000807* (2.00)	0.00410* (2.32)	0.000356* (2.15)	-0.00235 (-0.79)	0.000112 (1.77)	-0.000404 (-0.62)
Observations	5556	5556	5556	5556	5556	5556

t statistics in parentheses
* p<0.05, ** p<0.01, *** p<0.001

A. 21 VIF TEST FOR BOND AND STOCK MARKET

Variable	VIF	1/VIF
Monday	1.57	0.635510
Wednesday	1.57	0.635878
Tuesday	1.57	0.635977
Thursday	1.57	0.637026
evday	1.46	0.685050
evdayi	1.41	0.710962
evdayf	1.31	0.762222
newdummy	1.25	0.801741
GDP	1.13	0.884961
unemployme~e	1.11	0.903079
inflation	1.04	0.962363
evday1	1.01	0.992606
evday2	1.01	0.994080
evday3	1.01	0.994784
evday_1	1.00	0.995124
evday_2	1.00	0.996669
evday_5	1.00	0.996785
evday_4	1.00	0.996822
evday_3	1.00	0.996828
firstfived~s	1.00	0.999042
Mean VIF	1.20	

A. 22 VIF TEST BOND AND STOCK MARKET TARGET

Variable	VIF	1/VIF
Monday	1.56	0.640124
Tuesday	1.56	0.640469
Thursday	1.56	0.640817
Wednesday	1.56	0.641210
privatecit~y	1.02	0.981276
police	1.02	0.982784
transporta~n	1.00	0.997674
education	1.00	0.998624
military	1.00	0.998877
tourists	1.00	0.999312
firstfived~s	1.00	0.999441
religious	1.00	0.999460
Business	1.00	0.999496
government	1.00	0.999799
Mean VIF	1.16	