# Does terrorism affect the inflow of Foreign Direct Investments in developed countries in Europe?

A study of France, Spain and the United Kingdom

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## Abstract (English)

In this study it is examined whether the amount of Foreign Direct Investments (FDI) is affected by terrorism in three developed countries in Europe from a time series approach. The countries that are examined are France, Spain and the United Kingdom. The time period is 1975-2016 and the observations are annual. In previous literature there is evidence that terrorism should have an impact on FDI. FDI and terror are assumed to have a negative relation. The model that is used for this thesis is a VAR. Each model is specified into three different model specifications where the total-, national- and transnational amount of terrorist attacks is investigated. The VAR showed no significant result for terrorism affecting FDI.

## Abstrakt (Svenska)

Syftet med denna uppsats är att undersöka om mängden utländska direktinvesteringar (FDI) påverkas av terrorism i tre europeiska länder. Frankrike, Spanien, och Storbritannien undersöks under tidsperioden 1975-2016. Studien är baserad på årliga observationer och är gjord utifrån ett tidsserieperspektiv. I tidigare forskning finns det resultat som tyder på att terrorism har en påverkan på inflödet av FDI. FDI och terror antas ha en negativ relation. Modellen som används i den här studien är VAR. Båda modellerna estimeras i tre olika modellspecifikationer med fokus på beroendevariabel total-, nationell- och transnationell mängd terrorism för att förklara FDI. Resultaten från VAR estimeringen menar på att terrorism inte har en signifikant påverkan på FDI.


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Keywords: terrorism, FDI, VAR, GDP

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# List of abbreviations

ARIMA – Autoregression Integrated Moving Average

FDI – Foreign Direct Investments

GARCH – Generalized Autoregressive Conditional Heteroskedasticity

GDP – Gross Domestic Product

GTD – Global Terror Database

IRF – Impulse Response Function

VAR – Vector Autoregression

OECD – the Organisation for Economic Co-operation Development

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# 1. Introduction

The start of the modern era concerning terrorism is the terrorist attack on the Twin Tower 11th of September 2001 in New York. Some of the terrorist attacks were of such a magnitude that the impact of the action could change the conditions of an industry in a region, for example the changes in the tourism and airplane industries after 9/11 (Enders & Sandler, 2011). Terrorism is an object for both political and economical matters. In this study the economical reasons will be in focus. The financial wealth of a country can be destroyed by terrorism. The reason being that terrorism makes the country more unsecure that can lead to instability. When a country become instable and unsecure the foreign investments will decrease (Rasheed & Tahir, 2012).

This research could be relevant for policy makers since the inflows of Foreign Direct Investments (FDI) decrease in some European countries and FDI are considered an important determinant for economic growth (Gold, 2009). This research could also be useful for policy makers in their policy work against terror (Bandyopadhyay & Younas, 2014). In the analysis one could argue that the alternative cost for developed countries are relatively higher than for developing countries, since there is relatively more to destroy in developed countries.

According to a survey done in 2004 by the international corporate investors, terrorism is rated as one as the most important determinant when deciding whether to invest or not invest in a foreign country (Abadie & Gardeazabal, 2008). Terrorism increase the insecurity and the costs of doing business, thereby the incentives for FDI in a specific country are lowered. An example of an increased cost of conduct business is expenditures regarding security (Bandyopadhyay, Sandler & Younas, 2014). This illustrates the importance of investigating if terrorism has an affect on FDI.

This study aims to examine if terrorism actions affect the amount of investments the FDI inflows in three developed countries in Europe between 1975-2016. The countries that are examined in this thesis are France, Spain and the United Kingdom. These countries are considered to be some of the largest and most important economies within the European Union and have all suffered from terrorism, both transnational and national (Kollias, Papadamou & Arvantitis, 2013). The used definition of terrorist attacks in this thesis is included by bombings and assassinations.

The research question for this thesis is: Have terrorism has affected the inflow of FDI in France, Spain and the United Kingdom negatively during the period 1975-2016? The sub question is to examine if there is a difference from suffering of national terrorism or transnational terrorism. The dependent variable in the analysis is the inflow of FDI. The amount of terrorist attacks is the independent variable in focus. None of the estimated VAR regressions show significant impacts on FDI.

This study is structured as followed. In the second section some useful background for the thesis is presented. In the following section the previous research within the area in stated. In section four the used data and the variables is presented. In section five the model approach is motivated. Further on, the result will be presented in section six and will be followed by a discussion. At last, the study will be concluded in section eight. References and the appendices are attached in the end of the thesis.

# 2. Background

In this section some useful background of why FDI is important and why it is interesting to investigate terrorism is provided. In the end a description of the recent history of terrorism in France, Spain and the United Kingdom (UK) is stated.

## 2.1 Importance of FDI in developed countries

The definition of FDI is an investment that aims to be a long-term investment in a foreign country. The business is either controlled by an unit in the invested country or is controlled via its resident in another country than the invested country. This type of investments should reflect the interest of at permanent interest in a country. FDI is considered to be one of the most important determinants of economic integration and is an important source of finance capital investments. Studies on FDI, both theoretical and empirical, conclude that FDI has a potential impact on economic growth. FDI is one of the most stable external sources of capital. If FDI is invested in a country this suggests that the country has a stable financial structure (Dellis, Sondermann & Vansteenkiste, 2017). It is more costly to invest in a country were the threat of terror is high, since it demands higher expenditures on security and since the insecurity is high (Gold, 2009).

The total amount of FDI has grown strongly over the last decades. During the period of 1980-2014 FDI has grown from 1 trillion U.S. dollar to 25 trillion U.S. dollar in the world, which is an increase from 6 percent of the world GDP to 33 percent of the world GDP. The European market is considered one of the most important markets concerning FDI. 20 percent of the global stock of FDI in 2015 was invested in countries within the European area. However FDI has declined in Europe during the last years, since the competition from different markets in the world has increased. Economic integration has rapidly increased in the world in the last decades, thereby the costs of doing business abroad have decreased and the opportunities of doing business have increased (Dellis et al, 2017).

## 2.2 Terrorism

One of the most important factors for a company to decide whether to invest or not in a foreign region is if there is any terrorism in the region or country (Abadie & Gardeazabal, 2008). If there is a high amount of terrorist attacks in a certain area it reduces the willingness to invest. Multinational companies find it less interesting to set up new plants in areas affected by terrorism, due to the insecurity and destabilisation that follows from regular terrorist attacks. There is empirical evidence

that when terrorism declined the FDI rise again, an example of this is Colombia (Bandyopadhyay & Younas, 2014).

Terrorism could be a source of high direct costs for countries. Generally, the costs of a lonely terrorist attack are not large relatively to the whole economy. Terrorists would like a terrorist attack to have as high damage for the society that would affect as many people as possible. In some cases the economic effects of an action could be decaying for up to two and a half years after the terror attack (Gold, 2009).

It is common to distinguish national and transnational terrorism. National terrorism is home grown and is only between actors within the given country. The problem is considered as a homegrown problem for the society. This could imply that there are inequalities or political instability within a country. Transnational terrorism concerns at least two countries where the terror group is from another country than the terrorist attack is taking place. Transnational terrorism is characteristic to have a greater impact on marginal growth than national terror since it may discourage to invest in FDI (Sandler, 2013). Findings point out that the main reason why terror organizations grow in some countries are the limitations on political freedom and not poverty. Richer developed countries are generally good targets for transnational terror groups, since they have relatively more to loose relatively to developing countries. National terrorist attacks, could be argued, to be a consequence of a political environment or a specific situation within a country, such as native people fighting for their rights of their own land. Transnational attacks, on the other hand, are considered to be a cause of a more global issue. Terrorism can also become transnational when a domestic group expand into another nation. Another argument for how transnational terrorist attacks arise, is that national attacks encourage transnational attacks. This is because the country might be an easy target for the transnational groups since a country already have problems with terror and cannot protect themselves from it (Enders and Sandler, 2011).

There is research that point out that national terror has a small impact on economic growth relatively to transnational terrorism. There are indications that transnational and national terrorism follow each other. If terrorist attacks are successful in a region the probability of more terrorist attacks could increase (2011:78). Research on transnational terror groups has been the focus for studies on terrorism in the modern era. After 2001 there has been a shift from terrorist attacks mainly being occurring in Europe to be more frequent in the Middle East and Asia instead. This indicates that there has been a

shift in the location of the most common terrorism targets, from high-income countries to low-income countries. It has been suggested that the reason behind the shift is that high-income countries have increased the homeland security. Overall, transnational terrorism has shifted to more low-income countries, which do not increase security when the risk of terrorism increases. Their benefit and cost trade off is different from high-income countries, since they have relatively less to lose in sense of damaged institutions (Enders & Sandler, 2011).

## 2.3. Background of terrorism in France, Spain and the United Kingdom

The countries that are in focus for this study, have suffered significantly from terrorism. The terrorist attacks have been both national and transnational. In fact, among the countries in Western Europe, these countries have suffered the most from national terrorism. During the last 30 years, attacks performed by national separatist groups have caused 3600 fatalities in Northern Ireland (UK), 800 for the Basque Country (Spain) and around a dozens in Corsica (France) (Sánchez, 2008).

One of the most common terrorist groups that have been active in France is the Corsican separatist group Corsican National Liberation Front (FLNC). The FLNC was founded in 1976 and is mainly attacking individuals and infrastructure both on Corsica and on the mainland (Sánchez, 2008).

The most common national terrorist groups in Spain are the "anti-capitalists" which have grown from radical left-wing ideologies. ETA which is the most occurring national terrorist group in Spain, was founded to promote the independence of the Basque point out and has been active since 1959. ETA operates in Spain as well as France. The terrorist conflict in the Basque Country has often been said to have a significant deterrence for both domestic terrorism and FDI in the region. Basque Country was in the late 1970's one of the richest regions in Spain (Sánchez, 2008). There is evidence which states that the terrorist attacks in the Basque Country has caused a ten percentage points lower GDP per capita in comparison to other similar areas in Spain (Abadie & Gardeazabal, 2003). There is evidence that ETA harmed interests in investing in Spain, because Spain imposed a revolutionary tax, which have reduced expected returns on financial assets and thereby also would reduce the attraction of FDI (Enders & Sandler, 1996). ETA is responsible for approximately 800 deaths during its active days. According to a trend report from European Police Office, concerning 2006, there were 498 reported terrorist attacks within the European Union. National separatists were responsible for 424 of these. 136 out of these attacks were attacks performed by ETA. ETA mainly aim damage institutions, not to cause fatalities (Sánchez, 2008).

The most common group responsible for national terrorist attacks in is the Irish Republican Army (IRA), which have a long history of political actions that can be traced back to the 1930's (Enders & Sandler, 2011).

In this thesis the data of terror contains bombings and assassinations. The distribution between bombings and assassinations in France, Spain and the United Kingdom is attached in Appendix A. There is also illustrated how bombings and assassination for these given countries move during the time period. To see the different allocation for where the events in the countries have been most common, see the statistics in the Appendix B.

# 3. Previous research

This section will present evidence for the impact of terrorism on FDI. These previous findings will then be connected to the findings in this thesis. The research concerning the economical effects of terrorism is carefully explored. Since the terrorist attack on World Trade Centre on 9/11, the research has been focused on transnational terrorism. The area within the terrorism's impact on FDI is more or less unexplored. The results of the relation between terrorism and FDI are inconclusive (Powers & Choi, 2012). The existing research concerning the connection between FDI and terrorism in developed countries is limited and the existing research is mainly concerning developing countries.

Enders and Sandler (1996) performed a study in 1996 where they examined the effects of transnational terrorist attacks on FDI in Spain and Greece. The study is often referred to in the research field. They examined whether the transnational terror in Spain and Greece between 1968-1991 affected FDI. The study is based on quarterly data. Enders and Sandler listed four different economic costs related to terrorism. One of, these four cost, is the attacks at FDI plants, with the aim to bring investments down. They model Spain in an ARIMA-model and Greece in a VAR-model, which are the most suitable models for each country. The authors found significant and persistent decline in investments, which also will affect the country's economic performance. The effect of the VAR was greater than the effects of the ARIMA-model. They conclude that there is a decline in FDI of approximately 10 percent in each country. This represented reductions of the annual fixed capital of around 8 percent for Spain and around 35 percent for Greece. Walter and Enders found that a typical terror event in Greece, during the given period, proved to have a reduction of 2,7 percent of the FDI.

Enders, Sandler and Sachsida (2006) investigate to what extent the effect of the impacts caused by transnational terrorism against the U.S. has affected FDI. They point out that some terrorists want to negatively impact both the U.S. investors and the U.S. as a whole. 40 percent of all transnational terrorist attacks in the world targeted American-related interests. A majority of these attacks occur outside of the U.S. Enders et al applies both time-series and panel approaches. 69 countries are included in their study. First, they look into whether the 9/11 attacks have had long-term negative impact on the American FDI. Of the 69 countries in the study, Turkey was the only one that had the affects of a long-term negative impact. For all other countries, the attacks did not have any long-term impact on FDI. Thereafter, it was examined if the U.S. FDI stock invested abroad was reduced followed by transnational terrorist attacks. They find a small negative relation of the impact on FDI in

OECD countries. In their sample FDI was reduced all together by one percent and were the largest in Turkey and Greece, where FDI decreased by 5.7 percent units respectively 6.5 percent units. This result was true for the OECD countries but not for the non-OECD countries.

The purpose of Choi and Powers (2012) is to examine whether transnational terrorism reduces FDI or not. They investigate 123 developing countries using a time series approach during 1980-2008. Choi and Powers distinguish between business-related and non-business-related terrorism. They conclude that business-related terrorist attacks have a negative effect inflow of the FDI, while for the non-business targets there where no effect. Choi and Powers imply a counterterrorism measure, which intend to directly decrease business-related terror. The effects of implying direct efforts to decrease business-targeted terrorism gives pay-off and it is more likely to attract FDI again, since the threat from terror is decreased.

Abadie and Gardeazabul (2008) argue that terrorism have a large impact on investments. The study is made for 98 countries for the year 2003. The authors use a standard endogenous growth model in their research. They conclude that the risk of terror reduce the likelihood to invest in FDI. When the country struggles to keep stabile institutions and markets, foreign investors do not solely base their decision to invest or not on terrorism, but do also take the general stability of the country into account. The choice to invest or not in a country, is not exclusively depending on terrorism. The most important goal is to gain return on the invested capital. Abadie and Gardeazabul find that an increase in the standard deviation of a country's terrorism would decrease FDI into a country with approximately five percent. Their results establish the fact that trade openness is the main reason of why terrorism would hurt an economy.

Kollias, Papadamou and Arvanitis (2013) investigate the effects from terrorism on the stock-bond return, variance and covariance in France, Germany, Spain and the United Kingdom. The data covers the period of 1988-2008. They make a distinction between national and transnational terror and look into possible difference between these. The four countries are argued to be relevant since they have been significant victims of terrorism, which includes both national and transnational terrorism. The models used to explain this are VAR and GARCH-in-mean models. They are able to conclude that the amount of terrorist attacks is slightly bigger in France and Germany, than in Spain and. Both types of terror activities least affected the stock-bond market in the United Kingdom, but the effect of transnational terrorist attacks is larger than national terrorism. In Spain they could only find

significant evidence in case of the national terror, while the effects of transnational terror could only be found in France and Germany. The authors concluded that national terror is more likely to make the market volatile since it is connected to political instability. However, they also conclude that transnational terrorism had a spillover effect of other conflicts in areas around the world.

Blomberg, Hess and Orphanides (2004) found that transnational attacks have a small negative influence on economic growth. This was true in OECD countries, but not in non-OECD countries. Their study includes 177 countries between 1960-2000. They use cross sectional, panel approach and VAR-model to test for the dynamic interactions between transnational terrorism and long-run macroeconomic consequences. They point out that terrorism have a negative significant effect on the investment ratio, which is not true for other types of conflicts. Blomberg et al can conclude that transnational terrorism has on average a negative impact on economical growth. Further on they find evidence that the appearance of external and internal conflicts in a country increase the probability of terrorist attacks. This implies that the presence of internal conflict tends to attract other conflicts into a country, such as terrorism.

To summarize, there is evidence in the previous literature, which point out that there is evidence that terrorism has an impact on the inflow of FDI. In some of the cases its noted that the suffering from decreased FDI could be large when a country is suffer from terrorism, and in some cases its been proven that the decrease has a long-term effect.

# 4. Data

In this section the data used in the analysis will be presented. Additionally, the explanatory variable GDP is presented and explained.

## 4.1 FDI and terrorism

This thesis is focused on France, Spain and the United Kingdom during the period 1975-2016. The data is expressed in annual observations. The data for net inflow of FDI was downloaded from The World Bank, and is provided in current U.S. dollar. The data collected concerning terrorism was downloaded from Global Terrorism Database (GTD). This is the most common database for the field of terrorism.

The definition of terror differs a lot in previous studies, but in this thesis it includes bombings and assassinations. Bombings is by far the most standard type of terrorist actions and can take various forms. Assassinations has often has political motives (Enders & Sandler, 2011).

In order to qualify as a terrorist attack, an attack must fulfil three criteria, which were optional when downloading the data. The first criterion is that the act must be aimed at a goal, which can be social, political, economic or religious. The second criterion is that there must be evidence that the act had the intent to scare, force or transfer a message to a larger audience than the suffered victims. The third criterion is that the action must be outside the frames of legitimate warfare. In other words, the attacks have to be outside the frames of international humanitarian laws. All ambiguous and unsuccessful terrorist events are excluded from the sample. The terrorist attacks are divided into national and transnational observations. For total number of terror attacks: national, transnational and unknown terrorist attacks are included. The number of national terrorist attacks includes all acts performed by national terror groups. The number of transnational terrorist attacks includes all terrorist acts performed by transnational terror groups. To distinguish the data into national and transnational terrorism the method that Enders and Sandler (2011) used is applied.

The definition of national terrorism is when the attack is homegrown and the perpetrator group is from the country. Terror groups that perform transnational attacks do generally not intend to scare their home countries. If the target of the action is a non-governmental organization, the attack will be considered as a transnational. If the group is connected to an international ideology such as Nazism, the group is also considered transnational (Enders & Sandler, 2011). In order to decide whether a

terrorist attack is national or transnational, GTD is used, as well as the website Inside Gov. Inside Gov is an American search engine within political and governmental issues. In appendix C there is a register of all known terror groups in the sample and how these are defined terror groups. All observations from 1993 in the GTD dataset are missing. To solve this problem, the data for 1993 is interpolated by taking the mean value of the amount of terrorism for 1992 and 1994. The same method is applied to create values for 1993's allocation between the national, transnational and unknown terrorist attacks.

## 4.2 Explanatory variable for FDI

For explaining FDI one of the most common used variable is GDP. This is one of the most common variable in analyses both developed and developing countries. Nominal GDP is used as a proxy for market size (Economou, Hassapis, Philippas & Tsionas, 2017). The data for GDP is downloaded from OECD database and is expressed in current U.S. dollar. GDP is assumed to have a positive correlation to FDI. The larger the market of investment is connected with larger potential demand and lower costs because of scale economics (Walsh & Yu, 2010).

# 5. Empirical strategy

In this section the model approach will be presented. The chosen model for this study is a VAR. The model will include FDI, terrorism and GDP. The model will be used for three different specifications of terrorism: total, national and transnational terrorism.

The VAR model is the most common one to be used in models with stochastic time series. The model is built upon that the variables that explain FDI, for this case, are explained by the same determinants. The model tests the dynamics between the variables with help from the processes history. The error terms are assumed to be independent of FDI, terrorism and GDP. But they are allowed to have error terms that correlated among the variables (Verbeck, 2012). The VAR is considered to be very useful when exploring the interrelationships among a set of variables (Enders and Sandler, 1996).

When taking previous research into account, the most proper model approach for a study like this is a VAR. Enders and Sandler (1996) use a VAR to check whether terrorism affects the inflow of FDI in Greece. Their findings imply that transnational terrorism and FDI demonstrated response of interrelations, and found that there were significant results for a negative impact of terrorism on FDI. Kollias et al (2013) use a VAR when exploring the relation between terrorism and stock-bond market returns in France, Spain and the United Kingdom. They highlight that terrorism could cause effects, which would probably have a high affect on markets. In Blomberg et al (2004), a VAR is used to interpret the macroeconomic consequences between terrorism, internal conflicts and external wars. The VAR is used in previous research to investigate the affect of terrorism in similar studies and is thereby a proper model to use in this thesis.

The process of finding the right model specification was broad-based with support from previous studies. Different models and model specifications have been tested in this analysis. For example an OLS was made but the results was very misleading according to our expectations about the sign of the explanatory variables. Examples of tested explanatory variables for example FDI are trade openness, exchange rate, and unit labour costs. The model specifications were done in different combinations. The most effective explanatory variable to use was GDP. The in the end chosen VAR model includes FDI, terrorism and GDP is elected, since it lowest AIC and SC for all countries. AIC and SC is a measure for how well the data fits the model. The lower the AIC and SC value a regression, the better the model specification is. To be able to choose a proper lag length, which also would be the most

proper for all countries, a “lag length criteria” test is made. The most proper common lag length for all countries is to choose three lags. The result of the lag length test is attached in Appendix E.

# 6. Results

Firstly, in this section, descriptive statistics for terrorism and FDI will be submitted. Further on, tests for unit roots and correlation between the variables will be stated. Lastly the results of the VAR regression will be presented in Impulse Response Functions (IRF).

## 6.1 Descriptive statistics

In table 2 the number of total terror-, national, transnational- and unknown terrorist attacks are pointed out. The quantity of total terrorist attacks is similar for the countries in the study. The largest amount of attacks is provided by national terrorism. Note that the quantity of unknown terrorist attacks are a relatively big part of the total amount, and that transnational terrorist attacks are relatively a small part to the total. For France, unknown terrorist attacks stand for as large as one third of all terrorist attacks. For Spain and the United Kingdom the number of unknown terrorist attacks are about 15 percent. In Spain, the number of all terrorist attacks is a considerable quantity of the total number of terrorist attacks.

*Table 1. Quantity of terrorism*

| *Country* | *Total* | *National* | *Transnational* | *Unknown* |
|---|---|---|---|---|
| France | 2027 | 1214 | 128 | 685 |
| Spain | 1964 | 1601 | 71 | 292 |
| The United Kingdom | 1900 | 1507 | 168 | 225 |

Figures 1-6 illustrate how terrorist attacks and FDI develop over time in France, Spain and the United Kingdom during the time period. The general pattern is that the quantity of terrorist attacks has decreased over time. For France the number of terrorist attacks is volatile, and could be considered as more of a stable decline in Spain and the United Kingdom. The amount of terrorist attacks has decreased and has been quite low since around 2000 for all countries. During the same time as the quantity of terrorist attacks decreased FDI boomed. During the global financial crisis during 2008-2012 the FDI inflow declined for all countries, which revitalized for last years of the sample.

*Figure 1. Terrorism in France 1975-2016*

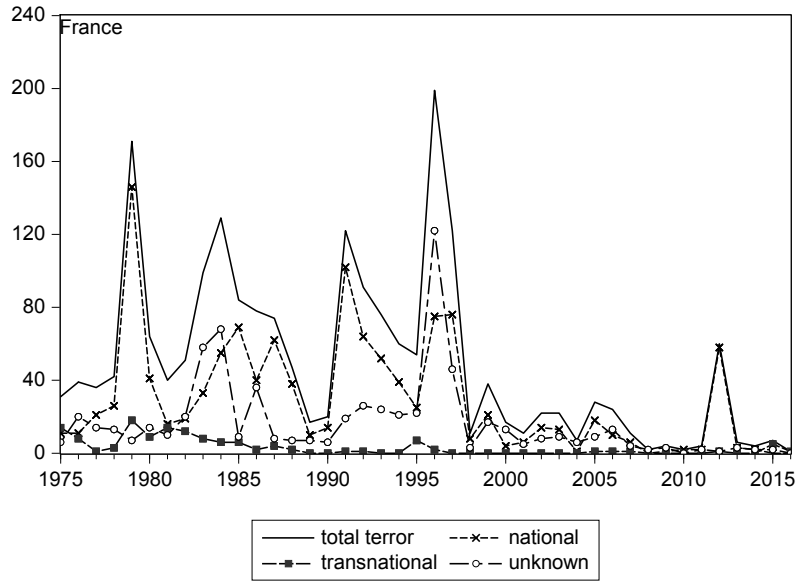



*Figure 2. FDI in France 1975-2016*

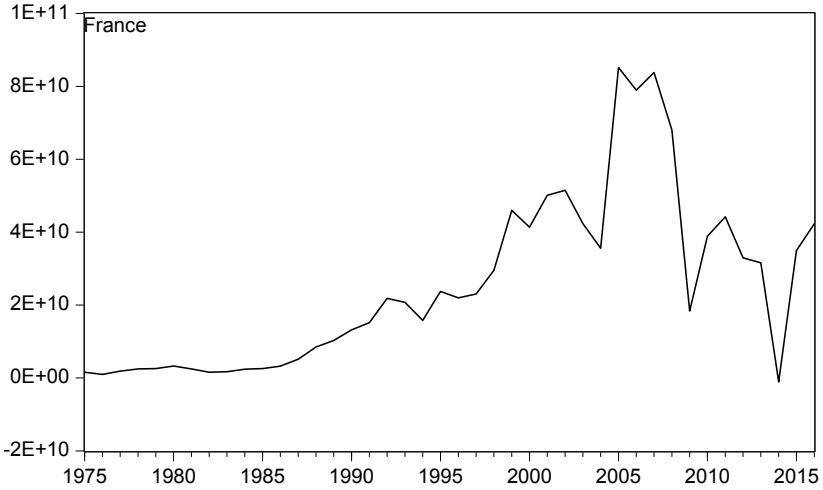


*Figure 3. Terrorism in Spain 1975-2016*

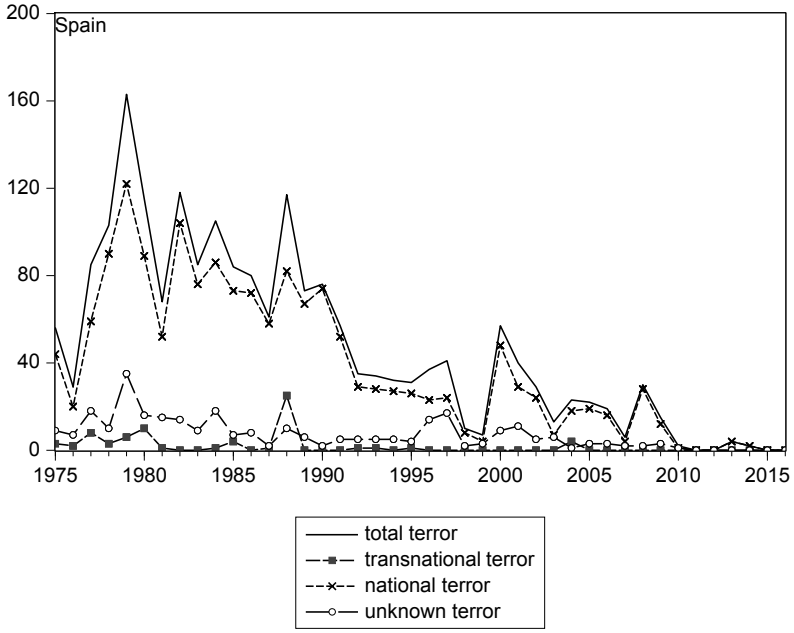



*Figure 4. FDI in Spain 1975-2016*

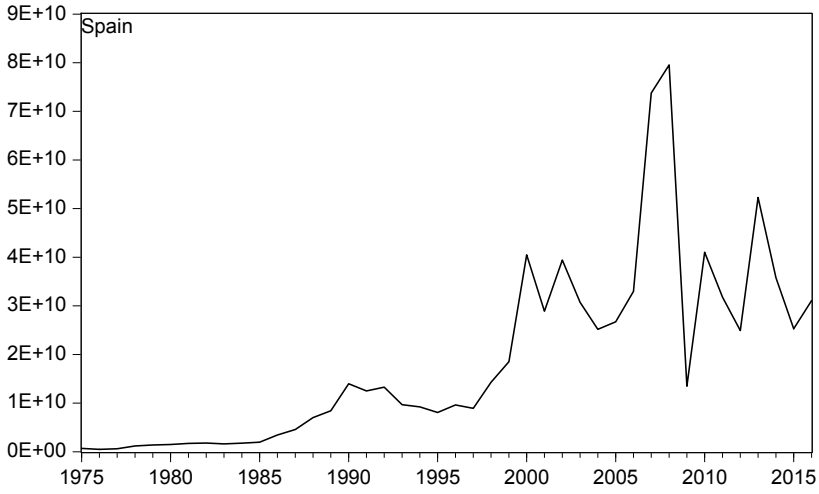


*Figure 5. Terrorism in the United Kingdom 1975-2016*

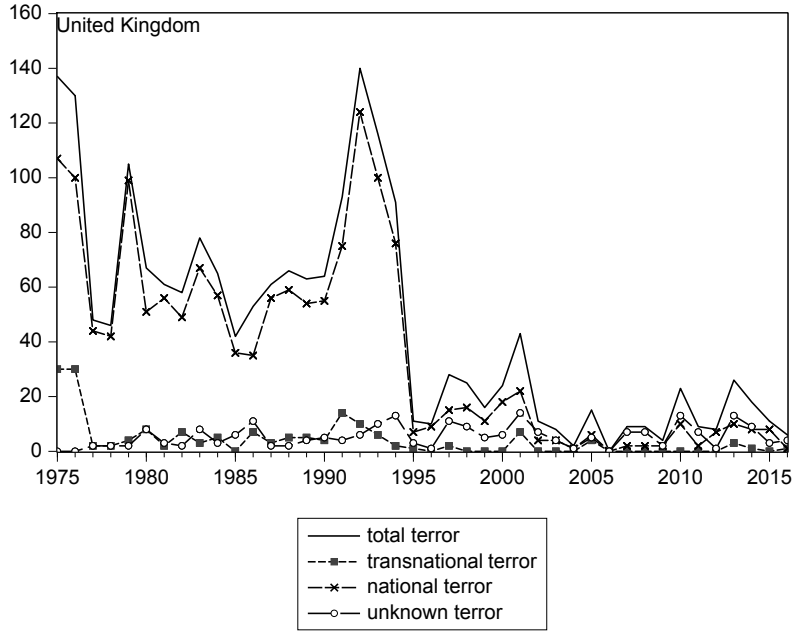
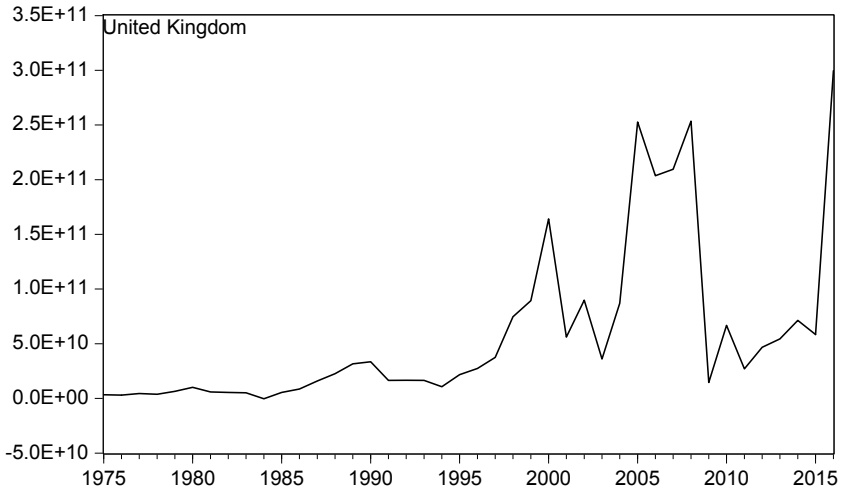



*Figure 6. FDI in the United Kingdom 1975-2016*



## 6.2 Unit root

To find the model approach, I begin by testing the variables for unit roots. The errors of the processes have a mean that is zero and the variances need to be finite. If the regression is made with variables that have a unit root, the result could prove significant result, even though it is not significant. This means that the variable is trending during the time period. If the variable is I(1), which we assume for the set of variables, they will be recreated by first differencing and the variable will thereby become stationary. For the purpose the Augmented Dickey Fuller (ADF) test is performed. The null hypothesis for the test is that there is no unit root. In table 2 the results for the ADF test is illustrated.

*Table 2. Augmented Dickey Fuller (ADF) test*

| *Variable* | *France,* | *Spain* | *UK* |
|---|---|---|---|
| FDI | -2.90 | -4.63*** | -3.46** |
| Δ FDI | -7.45*** | -5.58*** | -7.16*** |
| Terrorist attacks | -4.67** | -4.5*** | -4.18** |
| National attacks | -5.28*** | -4.10** | -3.61** |
| Transnational attacks | -4.20** | -6.70*** | -5.72** |
| GDP | -1.43 | -2.41 | -1.19 |
| Δ GDP | -5.38*** | -2.69 | -6.32*** |

FDI and GDP have a unit root for at least one country. For these variables the first differencing is made. We see that all the variables are stationary after differencing, except for GDP in Spain. Terrorism appears to be stationary. This is true for all types of terrorist attacks.

## 6.3 Correlation

To see the correlation between the different variables, correlation matrices are made for the countries in order to see how the variables correlate with each other. The variable "unknown" terror is presented in the tables, even though it is not modelled into none of the regression. It is presented in the to see how this quantity of terrorism stands for itself in comparision to the other variables. The correlation matrices for France, Spain and the United Kingdom are stated below in tables 3-5.

*Table 3. Correlation matrix for France*

| Correlation | Δ FDI | total terror | national | transnat | unknown | Δ GDP |
|---|---|---|---|---|---|---|
| Δ FDI | 1.000000 | | | | | |
| total terror | 0.011805 | 1.000000 | | | | |
| national | 0.011713 | 0.899854 | 1.000000 | | | |
| transnational | 0.069030 | 0.426075 | 0.412407 | 1.000000 | | |
| unknown | -0.004908 | 0.754566 | 0.402875 | 0.123409 | 1.000000 | |
| Δ GDP | 0.376530 | -0.374024 | -0.347418 | -0.203668 | -0.258305 | 1.000000 |

*Table 4. Correlation matrix for Spain*

| Correlation | Δ FDI | total terror | national | transnat | unknown | Δ GDP |
|---|---|---|---|---|---|---|
| Δ FDI | 1.000000 | | | | | |
| total terror | 0.007394 | 1.000000 | | | | |
| national | 0.014991 | 0.987313 | 1.000000 | | | |
| transnational | -0.003218 | 0.514471 | 0.426674 | 1.000000 | | |
| unknown | -0.026526 | 0.790048 | 0.709913 | 0.339853 | 1.000000 | |
| Δ GDP | 0.394847 | -0.225086 | -0.223005 | -0.092179 | -0.188732 | 1.000000 |

*Table 5. Correlation matrix for The United Kingdom*

| Correlation | Δ FDI | total terror | national | transnat | unknown | Δ GDP |
|---|---|---|---|---|---|---|
| Δ FDI | 1.000000 | | | | | |
| total terror | -0.094620 | 1.000000 | | | | |
| national | -0.097473 | 0.989604 | 1.000000 | | | |
| transnational | -0.063590 | 0.718475 | 0.649645 | 1.000000 | | |
| unknown | 0.023144 | 0.041451 | -0.053164 | -0.105356 | 1.000000 | |
| Δ GDP | 0.414844 | -0.371814 | -0.384079 | -0.313040 | 0.186822 | 1.000000 |

In general the correlations for France, Spain and the United Kingdom are relatively similar. The correlations between FDI in first difference and total amount of terrorist attacks in Spain and France have a positive relation. The assumption of the relation between FDI and total terrorism is thereby false for two out of three countries. The correlation for Spain is 0.7 percent and France 1.1 percent. In The United Kingdom the relation is negative with 9 percent. Correlation between total terrorism and national is high for all countries, since the share of national time is high of the total quantity of terrorist attacks.

Since the amount of data is divided into national, transnational and unknown, we can see how these specific terrorism variety correlates with FDI. The correlation between the total amount terrorism and the amount of national terrorism is highly correlated, since most of the terrorist attacks are defined as national terrorist attacks. The relation between the total amount of terror and transnational terrorism in

the United Kingdom has a correlation as high as 72 percent. The same relation is visible for France and Spain, 42 respectively 51 percent. In the United Kingdom FDI correlate negatively with transnational terrorism with about 6 percent.

In all countries terrorism and GDP have a high negative correlation. This is consistent with the findings that terrorism has an affect on GDP. For France and the United Kingdom, GDP and total quantity of terror negatively correlate as high as 37 percent. In Spain it is negatively correlated with 23 percent.

## 6.4 VAR

In this subsection, the Impulse Response Functions (IRF) provides the results for the VAR regressions. The IRFs are presented in figure 7-15. An IRF estimate a shock of two and a half standard deviation and has a 100 percent error bands. The column of each figure is the dynamic response of the row variables. For example in the top row we see how the shock of FDI with a two and a half standard deviation on FDI, total terror, and GDP. The box of main interest in each figure, is in the middle on the top row, how FDI response to a shock of terrorism.

*Figure 7. Impulse Response Function for total terrorism in France*

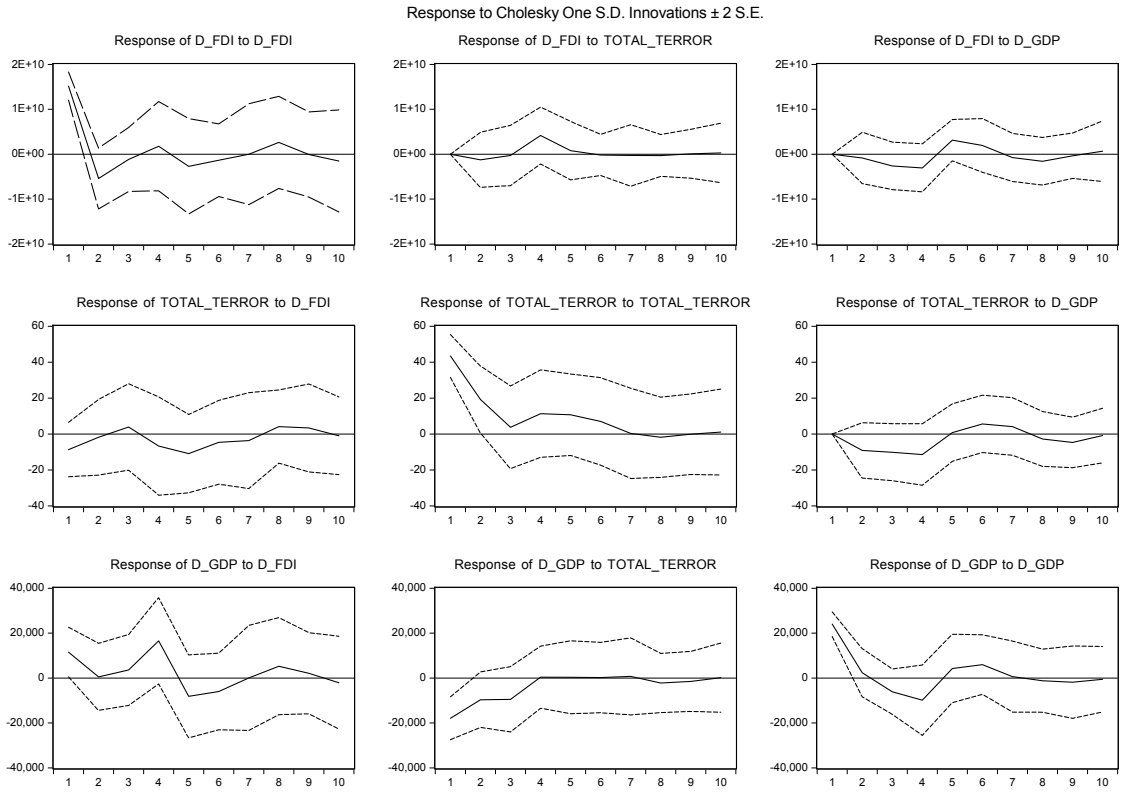


*Figure 8. Impulse Response Function for national terrorism in France*

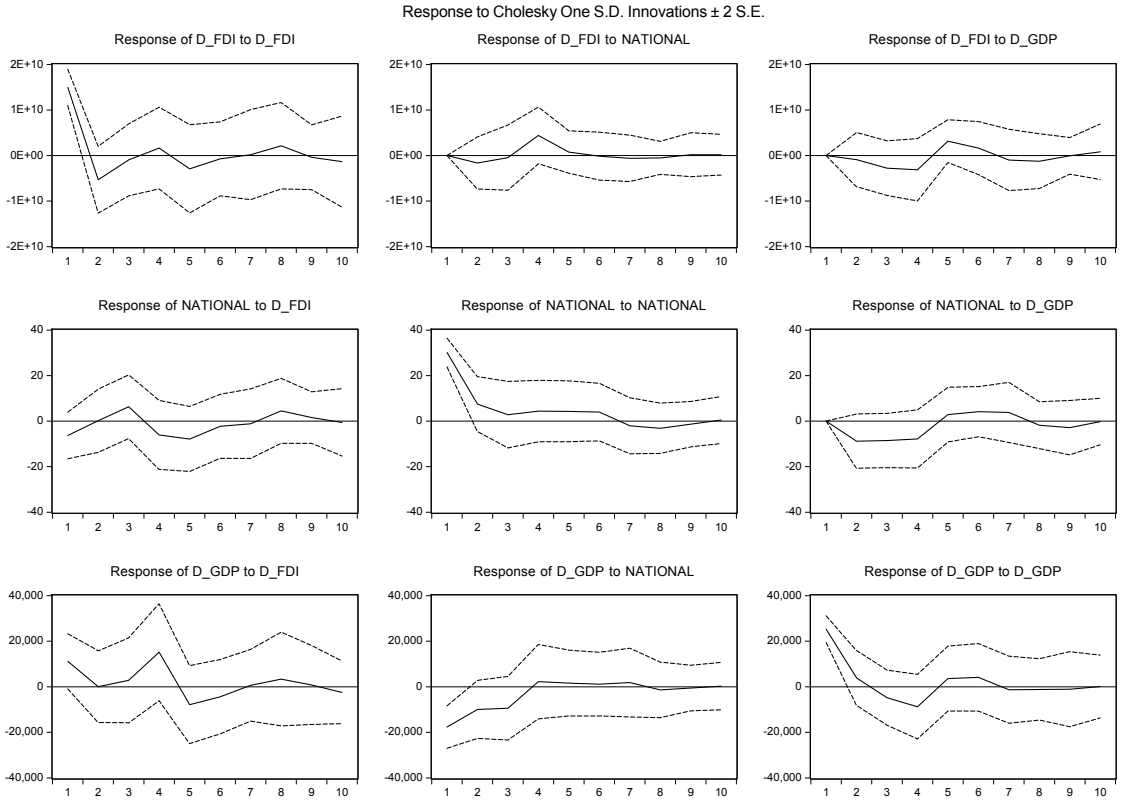
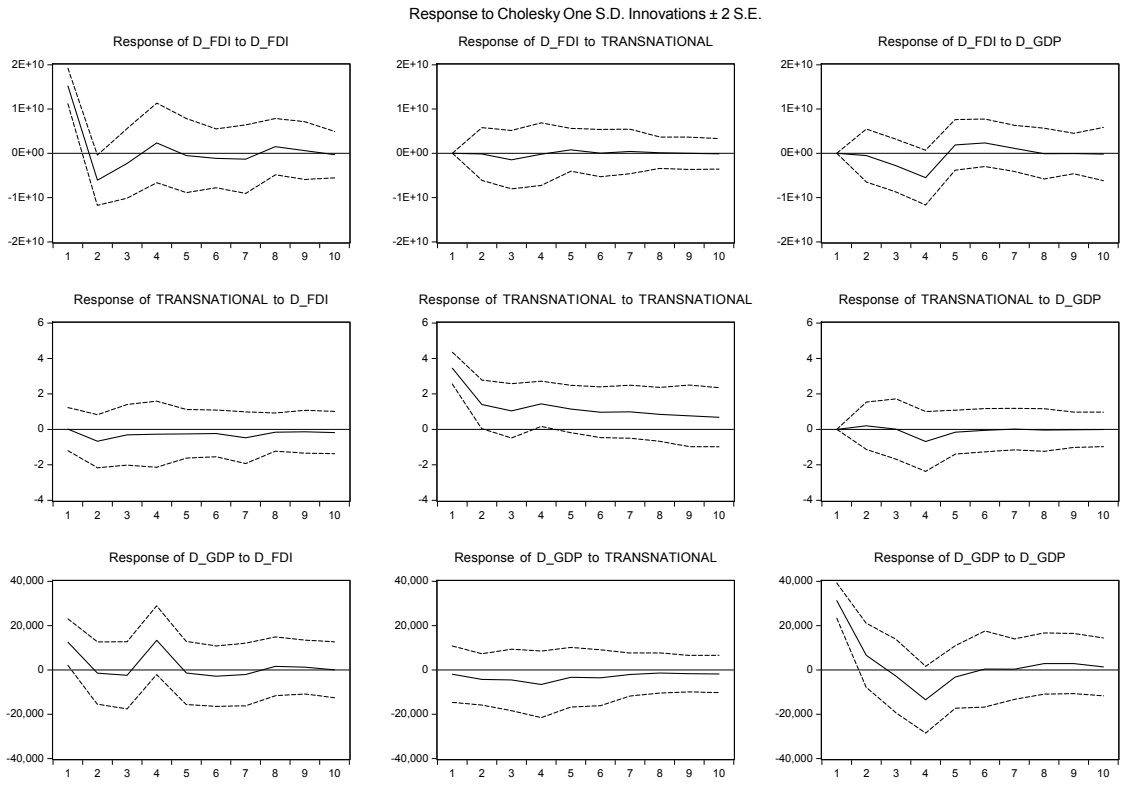



*Figure 9. Impulse Response Function for transnational terrorism France*



The shocks of total terrorist attacks and national terrorist attacks affects FDI relatively the same in Spain. In the graphs, a decrease in FDI occurs for period two. Thereby there is no immediate response to the shock. A shock from total terrorism or national terrorism would decrease FDI with approximately 2 billions U.S. dollar in the period. In period four, the shock responds positively to FDI. This positive respond has a larger peak than the negative one and exists for nearly two and a half period. The affect of the shock has died out has died out in period five, concerning the case of total terrorism and national terrorism. The shock of transnational terrorism is more absent over time. The transnational impact on FDI has the same negative impact as national and total terrorism has on FDI. Though the shock appears one period after, in period three instead of two. The result on how terrorism affects FDI is in the beginning in line with the assumption. The results for total terrorism and national terrorism has however a strong positive outcome after the negative shock.

As was stated in the correlation matrix *figure 3,* GDP had a negative relatively large correlation with terrorism. The box in the bottom in the middle is now of interest. The shocks of total terrorism and national terrorism immediate affect GDP negatively and have a longer existence before it goes back to normal situation. The shock occurs until period four. The immediate loss of GDP measures up to approximately 20 000 U.S. dollars. The shock of transnational terrorism to GDP persists during the whole sample, but is of a smaller magnitude than for total terrorism and national terrorism.

*Figure 10. Impulse Response Function for total terrorism in Spain*

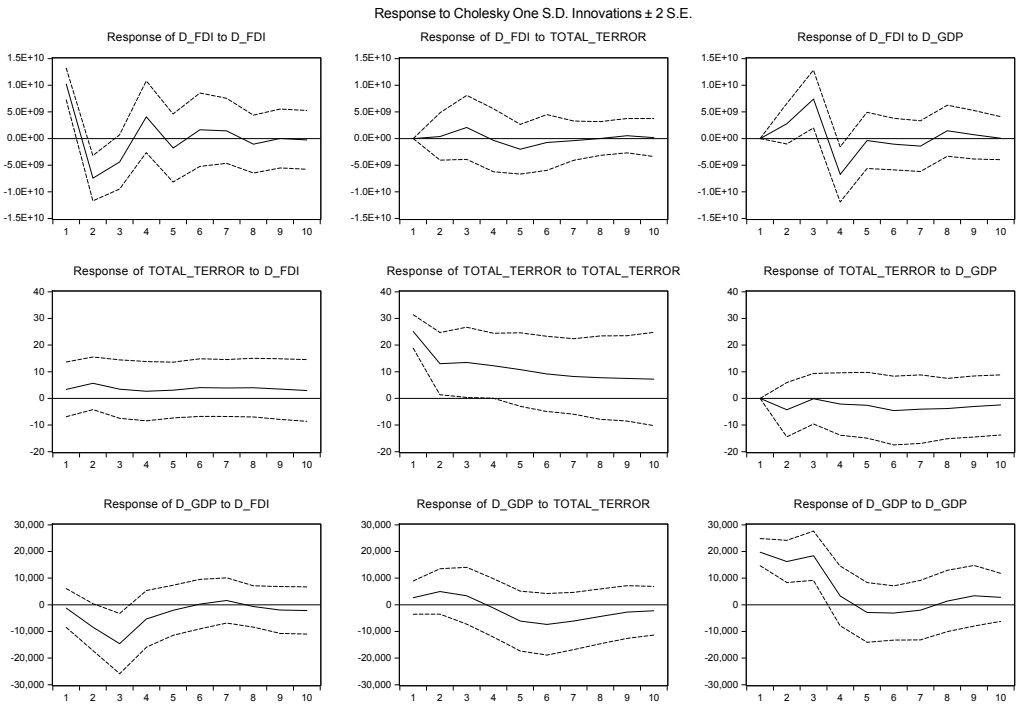


*Figure 11. Impulse Response Function for national terror in Spain*

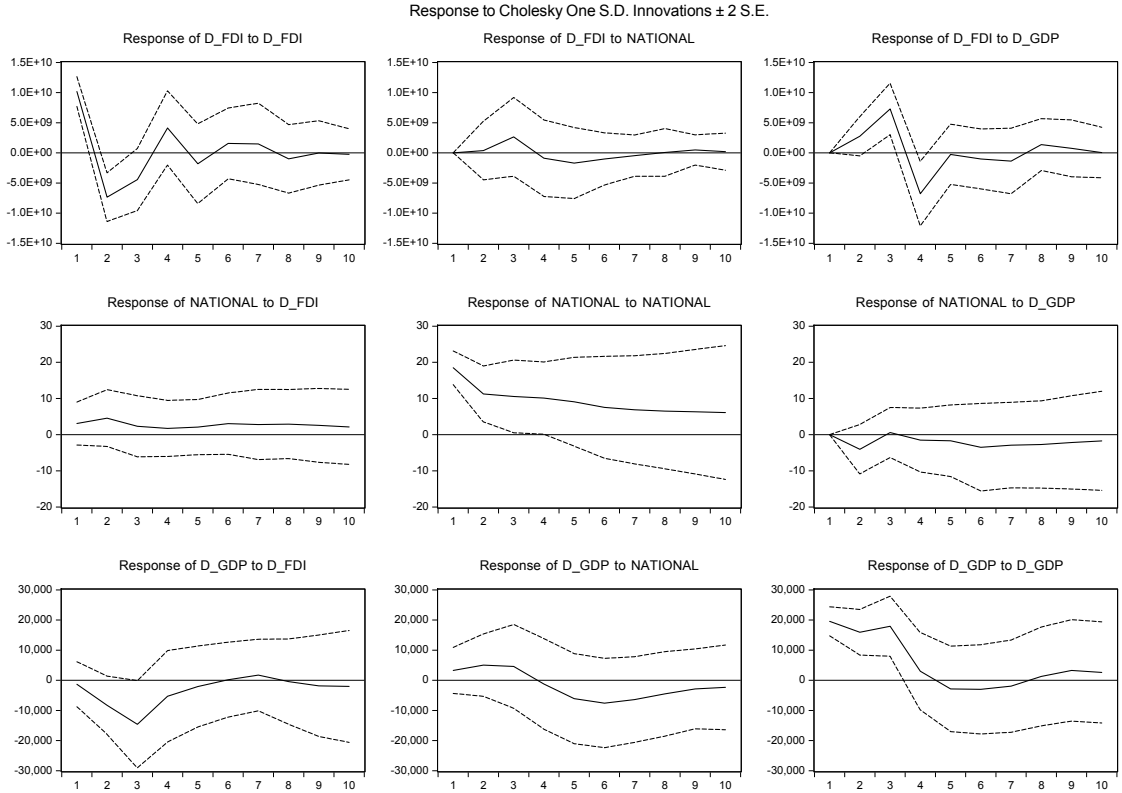
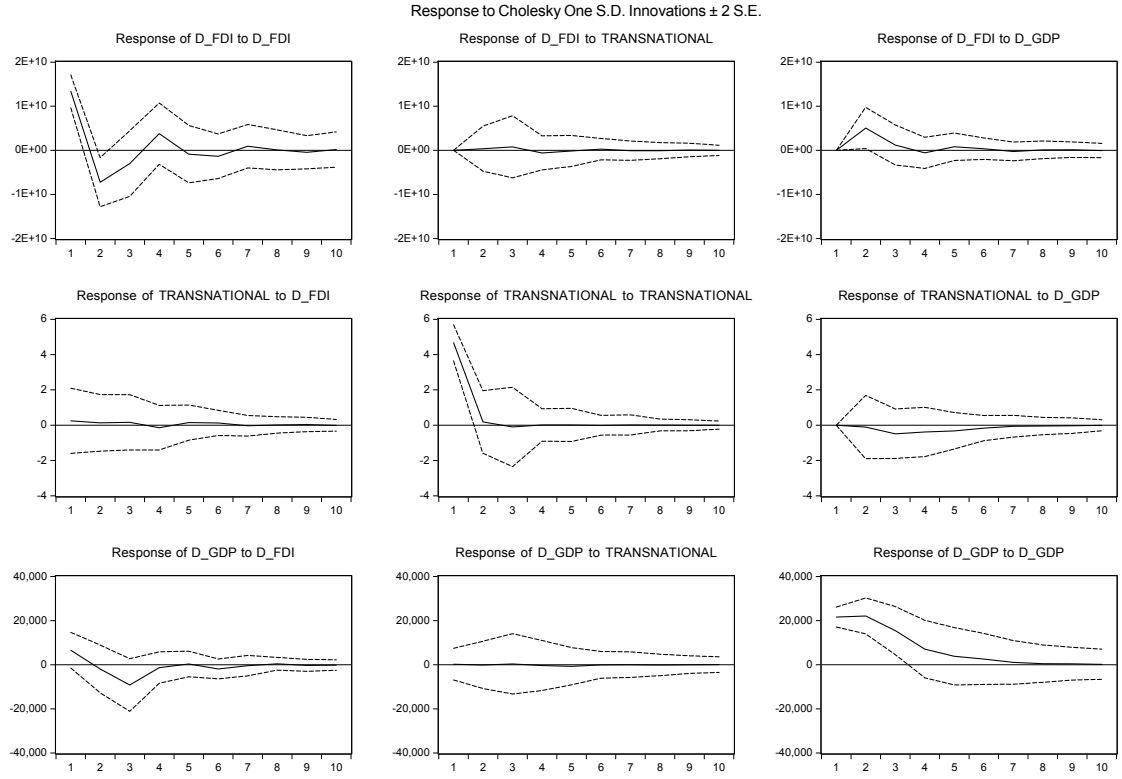



*Figure 12. Impulse Response Function for transnational terror in Spain*



The effects for a shock of terrorism for FDI in Spain are not in line with the assumption of how terrorism affects FDI. The shock of terror has at first a positive affect regarding the inflow of FDI. This positive effect occurs in period two and has died out in period four for all the IRFs. The positive affects are more visible in the result for total terrorism and national terrorism. The affects are approximately around 2 billion U.S dollars in each case. After the positive shock, in the total and national case, it is followed by a negative result that remains to the seventh period. The peak of the negative shock is more or less as big as the positive outcome, around two billion U.S. dollar, but occurs during a longer period. The response of transnational terror to FDI in Spain is relatively small in comparison. The shocks appears to have to have smaller durability and appears around the zero, thereby the transnational shock to FDI appears to be smoother.

Concerning the terrorist shocks of GDP the shock of a two and a half standard deviation of terrorism first appears to be positive and exists to period four for total terrorism and national terrorism. The positive shock is followed by a negative shock that exists for the rest of the samples. The negative shock is less than 10 000 U.S dollars. The response of a transnational terrorist shock in GDP moves around the zero. It is hard to distinguish the shocks movement through the sample. It can thereby be concluded that the affects of transnational terrorism to GDP is not large.

*Figure 13. Impulse Response Function for total terrorism in the United Kingdom*

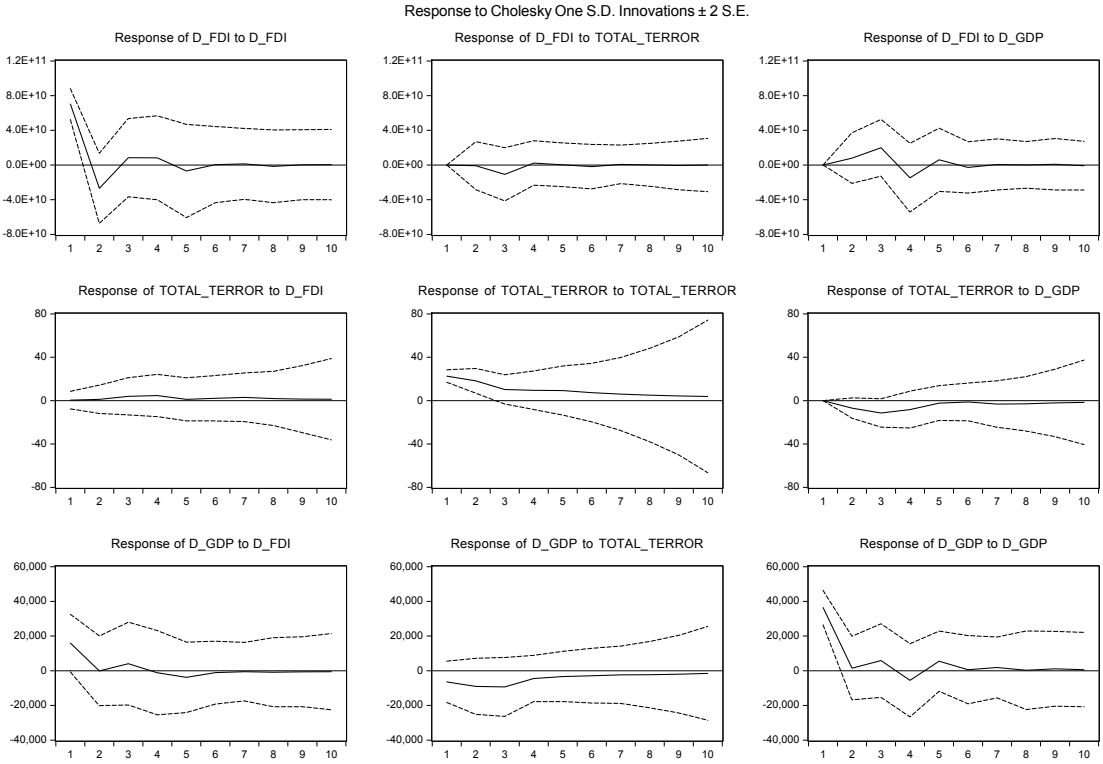



*Figure 14. Impulse Response Function for national terrorism in the United Kingdom*

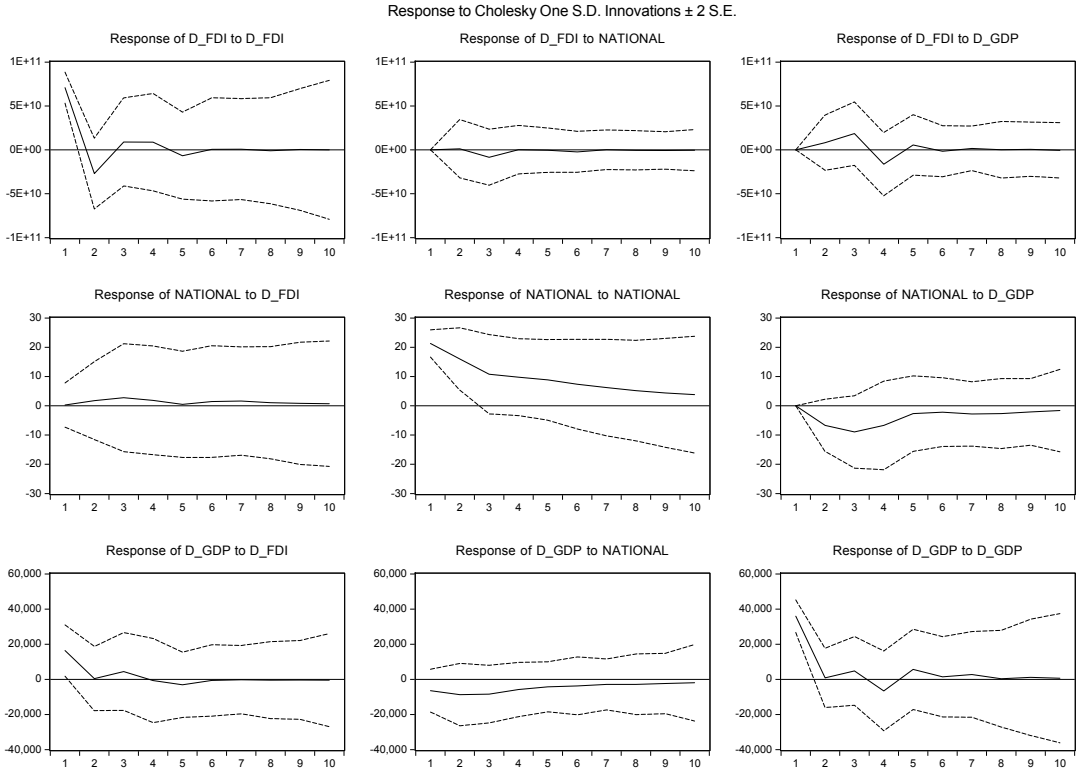
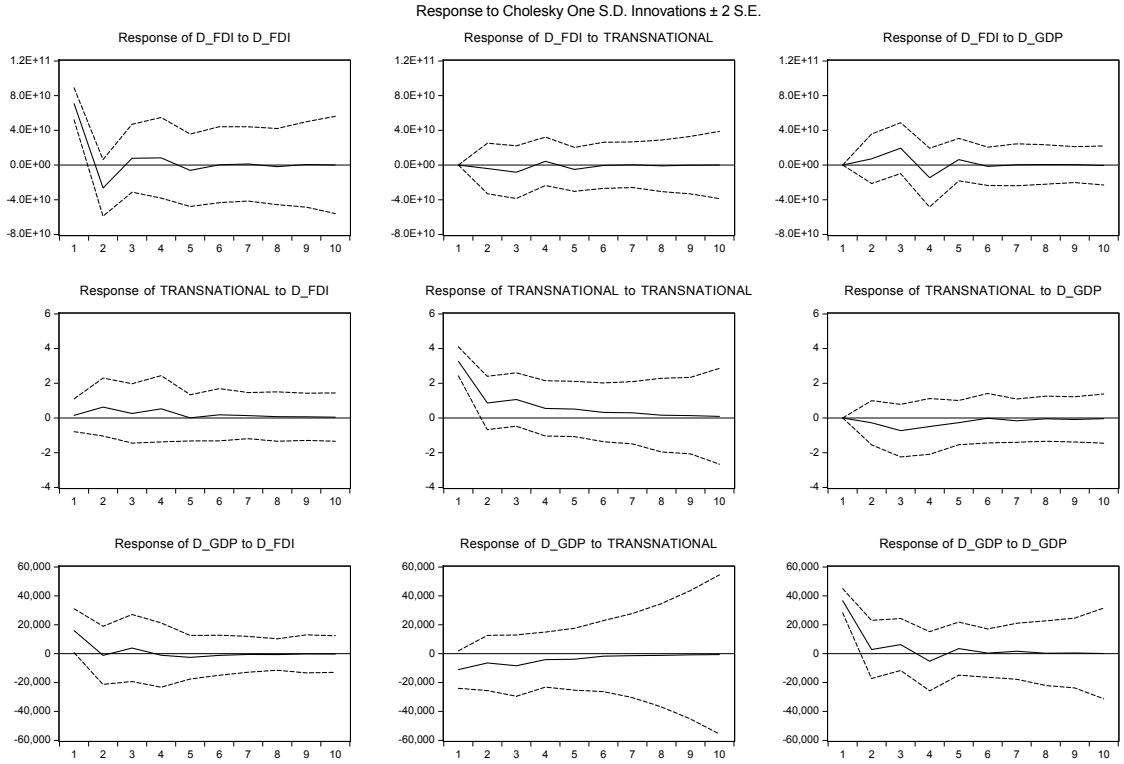


*Figure 15. Impulse Response Function for transnational terrorism in the United Kingdom*




The result in the United Kingdom concerning total and national terrorism, the pattern of the shock is relatively the same as in the results for France. The shock appears in period three, which is one period after Spain, and die out in period four. The negative response in FDI is approximately about 1 billion U.S. dollars. There is a smaller increase of a positive reaction in the FDI in period four, than to the results of France. But since the axis is high numerated it is hard to distinguish how large the shock is. The shock of transnational terrorism to FDI is quite alike to the transnational shock in France. However the confidence interval in the United Kingdom case gets wider the longer the time goes. In the France case the confidence interval is bigger in the beginning and become narrower the longer the time goes.

The confidence interval for all three IRFs is concerning GDP has a negative shock which appears directly. Broadly all three estimations have the same structure. All shocks move under the normal state for all periods, but the effect decays more the longer the time go. The confidence intervals have a form of a horn, which means that the estimations for these are more insecure the longer the time goes. The strongest response to a shock in GDP is the transnational one, it has an immediate negative effect by 8 000 U.S dollars.

To summarize the results of the VAR, the shocks are not persistent through the whole simulation. The shocks have both positive and negative response to a shock of FDI. The eventual negative effect in the beginning is relatively short, but could hurt a country properly. According to the simulations the effects of the simulations are more dramatic concerning the terrorisms impact on FDI, since the amount of a loss is high. A two and a half standard deviation shock of terrorism could cause a loss of FDI around billions current U.S. dollars. In Spain the shocks firstly have a positive impact on FDI and are thereby followed by a decrease in the inflow of FDI. The results thereby differ between the countries, but the losses of FDI could lead to a huge loss. Concerning the GDPs response to a shock of terrorism, the results show a more persistent negative shock. This since the shocks nearly only moves under the zero. The effects of the GDP are smaller. None of the results for the VAR model is significant, since none of them appears outside the confidence intervals.

## 6.5 Causality test

As a part of the VAR-analysis the Granger Causality test is made. The Granger Causality test is made to check whether terrorism and the inflow of FDI have causality. A Granger Causality test can have four different outcomes; FDI has causation on terrorism, terrorism has causation on FDI, none of the variables causes each other or the both variables cause each other. It is performed for each of the countries and a test is done for each of the three investigated types of terror: total, national and transnational amount of terrorism. For France FDI granger cause total terror and national terror at significance of 5 percent. For Spain FDI and total terror cause each other in both direction at significance of 10 percent. FDI and national terror in Spain also cause each other in both directions at the same significance level. The Granger Causality test shows no significant causality for the United Kingdom. The significant results of the Granger Causality tests are presented in Appendix D.

# 7. Discussion

In this section the result of previous section will be discussed. The analysis will be connected to previous research and possible explanations of the weak results will be stated.

Terrorism has according to this thesis no significant economic impact concerning FDI. The outcomes of the estimations differs among the countries and a shock of terrorism has not a consistent impact on FDI, since the shocks appears to be both negative and positive in the simulation. Terrorism seem to have a more consistent impact on GDP, since most of the simulations had a negative effect through the whole simulation.

The result for this thesis is different from the results that are stated in the section with previous studies. One could wonder why this result differs from the ones that is stated in the section of previous literature. One reason of the different results could be that the patterns of FDI for developed countries and terrorism are more complex than the fit of the data with combination of a quite small sample. One possible idea of why terrorism seemingly has no impact on the FDI, during the time period 1975-2016 in these three countries, is that the terrorist attacks are taking place in different places of the country and therefore does not hurt the economical standard in the country (see appendix B). Up to approximately the half of all terrorist attacks in each country took place in other parts than the sixth most common places for terrorist attacks. For terrorism to have an actual negative impact on FDI it is important that the attacks target the same place and are frequent enough to damage the country's economic standard and are even more important to strike the country's economic heart. This since it could be argues that these centres are clusters of foreign investors and the place where international affairs are settled. On relatively big markets the economy might have the possibility to shift location or direction of its operation, and thereby not hurt the inflow of FDI. The foreign investors invest in other regions than the given area that suffers from terrorism. National terrorist attacks, which are by far the largest part of all terrorist attacks, could also be considered as quite local and therefore not a threat to the whole economy.

Another reason why terrorism does not have an impact on FDI is that FDI is the wrong type of investment to consider. This since FDI cannot absorb the short-lasting effects of terrorism. Therefore other types of investment, which are more volatile, absorb the effect of terrorism in a better way. Further on, another argument for the different result for this thesis could be that these countries might

be considered as such attractive markets that the threat of terrorism does not matter. According to Kollias et al (2013) these countries are the most important economies within Europe, and could therefore be independent of the terrorism impact on FDI. The foreign investors are willing to invest in these countries anyway. This could be true for at least Spain, since terrorism seem to have a positive impact on FDI in the beginning.

Even though the VAR regressions show insignificant results, it cannot be eliminated that terror and FDI has an impact on each other. The results of Granger Causality implications on that FDI and terrorism cause one another. The Granger Causality test regarding the terrorism and FDI for France and Spain is significant. Since amount of national terror is a large part of the total quantity of terrorist attacks these give the same results concerning how these causal react to FDI. In France, FDI causal react to total and national terror. In Spain FDI and national terrorism and total terror goes both directions; the FDI causal react to terrorism and terrorism casual react to FDI. When FDI has causality to terrorism, which is the opposite to the hypothesis of the thesis, this could indicate that the terror attack has been minded to attack business targets. This would then be in line with the results by Choi and Powers (2012). When FDI increases the displeasure within different national groups might grow and they take action to show their discontent via targeting these establishments and plants. For example, this is coherent with the terrorism in Spain, since the national terror groups are considered to be "anti-capitalists". This could be especially true for the terror group ETA, since they mostly have targeted buildings and institutions.

The research within the area for FDI and terror might be skewed since authors would have incentives to only publish research that have significant results which points out that terrorism affects FDI negatively. This might be an answer because the fear of terror has grown after 9/11 and transnational terrorism has been in focus for studies. The findings of insignificant results could have an interesting importance for political decision-making, since the decreasing trend of investing in FDI in Europe seem to be a fact, and the inflows of FDI indicates to have a big impact on the economic growth. It is further on important to have a consistent approach of how to define terrorism, in order to get fair and comparable results. In the sample of this thesis national terrorism is exclusive the biggest part of the total terrorism, thereby one could argue that the focus within the research field is wrong. In the European context this argument become stronger when concerning the fact that transnational terrorism has shifted from the Western World and become more frequent in Middle East and Asia. This would encourage further research within national terrorism.

# 8. Conclusion

This thesis aimed to investigate the impact of terrorism on FDI in France, Spain and the United Kingdom for the time period 1975-2016. These countries have experienced a significant occurrence of both national and transnational terrorism during the given time period. The sub research question is if there was a difference in impact of national and transnational terrorism. The estimated model is a VAR that included FDI, terrorism and GDP for three lags. This study cannot find any significant evidence for the statement that terrorism have an affect on FDI during the time period, though there is evidence in previous studies that there is an impact. The Granger Causality tests state significant results for that there is causality between terrorism and FDI in France and Spain. Even though the VAR regressions show insignificant results, it cannot be eliminated that FDI has causality with total terrorism and national terrorism.

The result for national terrorism in this thesis could be considered as an important result since the previous literature, concerning the transnational terrorism, portray transnational terror as the most dangerous one and that this has been the focus of the research area. One should also have in mind that the results within the area of terrorism are inconsistent.

One of the most difficult issues within the subject of terrorism is that the definition is inconvenient, and therefore the results of the research are hard to compare. For the future, the field it would have its advantages to have a consistent definition of terrorism, since the previous literature lacks of it. The researches outcome might differ when the sample of countries and the definition of terrorism and the frequency of the data is different.

The literature concerning the costs of terrorism is large, but its relation of FDI concerning the developed countries, within Europe especially, is fairly limited. The overall evidence of previous research is ambiguous this gets even more important. For further research it would be preferable to build upon previous studies to be able to conclude whether the deduction within previous research is having significant results for an accident or not. According to the survey in 2014 one of the largest determinants to investment in FDI is whether the country has suffered terrorism or not. The subject is also important from the view that FDI has a crucial impact on economic growth. This should make further studies on the subject welcomed.

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Data Source

Global Terrorism Database (downloaded 2017-07-24), last update June 2017
https://www.start.umd.edu/gtd/

Inside Gov (downloaded 2017-08-11), last update 2017
http://terrorist-groups.insidegov.com
*The website was used to define the type of terror groups for an attack is national or transnational*

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https://data.oecd.org

The World Bank (downloaded 2017-07-24), last update 2017
https://data.worldbank.org/indicator/BN.KLT.DINV.CD

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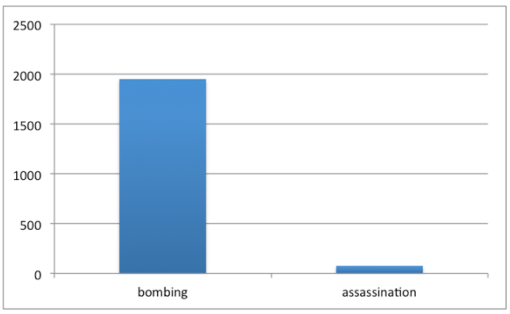
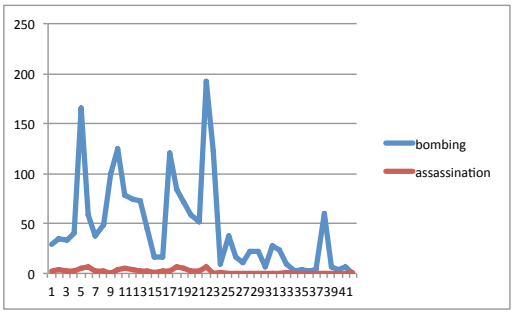
# Appendix

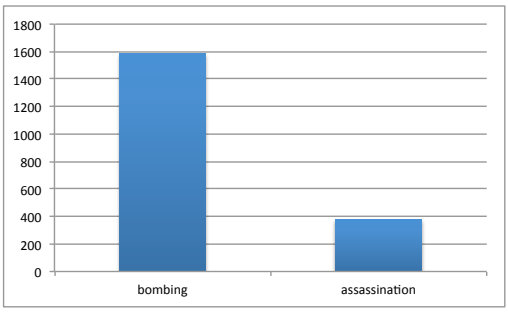
## A. Distribution between bombing and assassination

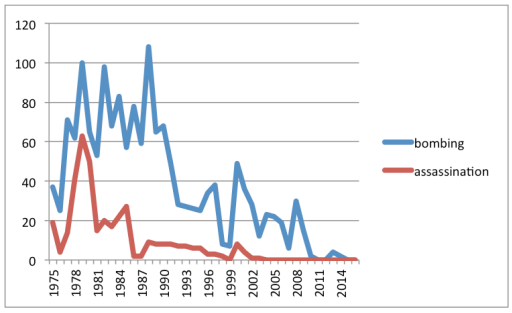
*France*



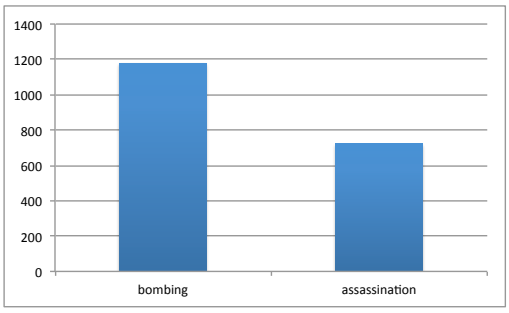



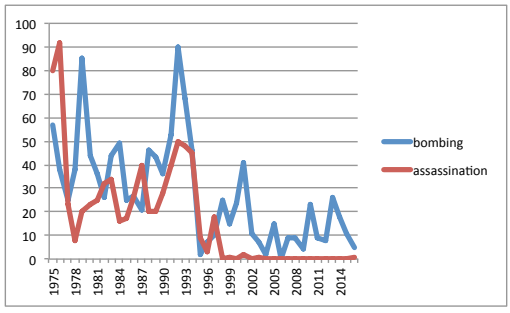

*Spain*



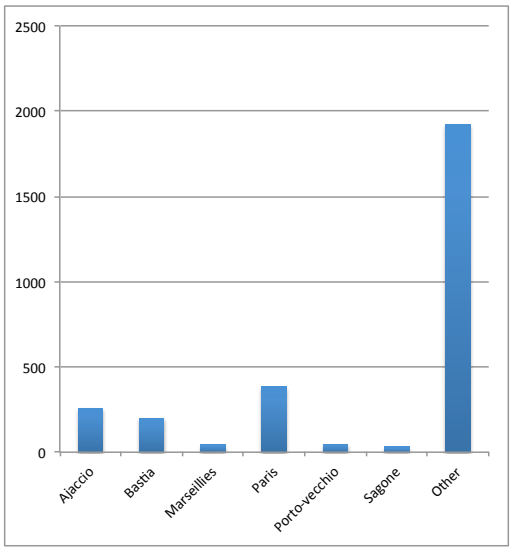

*The United Kingdom*



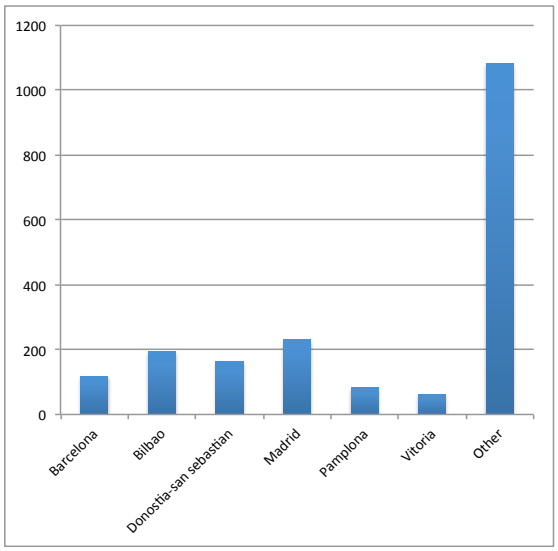



B. Allocation of terrorist attacks

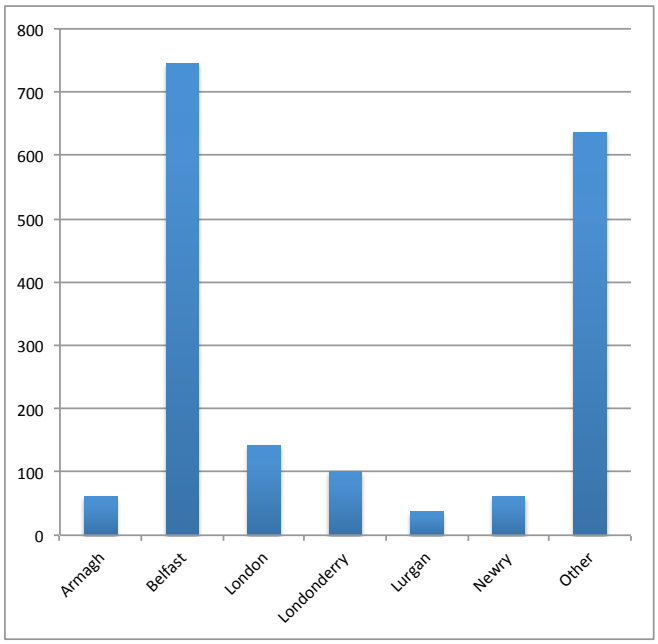
*France*




*Spain*




*The United Kingdom*



## C. Definition of terror groups

*France*

| *Group* | *Definition* |
|---|---|
| Abu Nidal Organization (ANO) | transnational |
| Action Directe | domestic |
| African National Congress (South Africa) | transnational |
| Algerian Moslem Fundamentalists | transnational |
| Anti-Armenian Organization | domestic |
| Anti-Nuclear extremists | transnational |
| Anti-Terrorist Liberation Group (GAL) | domestic |
| Arab Revolutionary Front | domestic |
| Argentine Anti-Communist Alliance (AAA) | transnational |
| Armata Corsa | domestic |
| Armata di Liberazione Naziunale (ALN) | domestic |
| Armed Islamic Group (GIA) | transnational |
| Armed Nucleus for Popular Autonomy | domestic |
| Armenian Secret Army for the Liberation of Armenia | transnational |
| Association Totalement Anti-Guerre (ATAG) | domestic |
| Autonomous Revolutionary Brigade | domestic |
| Baader-Meinhof Group | transnational |
| Basque Fatherland and Freedom (ETA) | transnational |
| Basque Rectitudes | domestic |
| Black War | domestic |
| Breton Liberation Front (FLB) | domestic |
| Breton Separatists | domestic |
| Charles Martel Group | domestic |
| Clandestini Corsi | domestic |
| Comite d'Action Viticol | domestic |
| Commandos | domestic |
| Commandos Against Self Destruction of the Universe | domestic |
| Commandos of France | domestic |
| Committee of action against bull fights | domestic |
| Committee of Solidarity with Arab and Middle East Political Prisoners (CSPPA) | domestic |
| Communist Anti-Nuclear Front | domestic |
| Coordination for Revolutionary Action (CAR) | domestic |
| Corsican Farmers' Front | domestic |
| Corsican National Liberation Front (FLNC) | domestic |
| Corsican Nationalists | domestic |
| Corsican Revolutionary Brigade | domestic |
| Corsican Separatists | domestic |
| Delta Group | domestic |
| Falangist Security Group | domestic |
| Fanatical Ecologists | domestic |
| First of October Antifascist Resistance Group (GRAPO) | transnational |

| | |
|---|---|
| France's Honour | domestic |
| Francia | domestic |
| French Basque Nationalists | domestic |
| French Liberation Front | domestic |
| Front for the Liberation of Lebanon from Foreigners | domestic |
| Front of French National Liberation | domestic |
| Gracchus Babeuf | domestic |
| Guadeloupe Liberation Army | transnational |
| Guerrillas | domestic |
| Hezbollah | transnational |
| Honour of the Police | domestic |
| Indipendenza | domestic |
| Internal Front | domestic |
| International Revolutionary Action Group (GARI) | domestic |
| International Revolutionary Solidarity | domestic |
| Iparretarrak (IK) | domestic |
| Islamic State of Iraq and the Levant (ISIL) | transnational |
| Jacques de Molay Group | domestic |
| January 22 | domestic |
| Jihadi-inspired extremists | transnational |
| Justice Commandos for the Armenian Genocide | transnational |
| Katsuhisa Omori | domestic |
| Kurdistan Workers' Party (PKK) | transnational |
| Lebanese Armed Revolutionary Faction (LARF) | transnational |
| M-5 | domestic |
| Martyrs of Baalbek | domestic |
| Militant Zionist Resistance Movement | transnational |
| Military Council for the True Liberation of Albania | transnational |
| Movement for the Supremacy of Reason | domestic |
| Muslim Extremists | transnational |
| National Movement Against the Mahgreb Invasion | domestic |
| Nationalist Intervention Group | domestic |
| Neo-Nazi extremists | transnational |
| New Armenian Resistance | transnational |
| New Caledonian independence supporters | transnational |
| Organization for the Liberation of France from Jewish Occupation | domestic |
| Orly Organization | domestic |
| Pacifist and Ecologist Committee | domestic |
| Palestinians | transnational |
| Partisan Sharpshooters | domestic |
| Popular Front for the Liberation of Palestine (PFLP) | transnational |
| Portuguese Liberation Army | transnational |
| Pro-Palestinian Group | transnational |
| Rebels | domestic |
| Resistenza | domestic |
| Resistenza Corsa | domestic |

| | |
|---|---|
| Revolutionary Anarchist Armed Terrorist Movement | domestic |
| Revolutionary Nationalist Movement | domestic |
| Right-wing extremists | domestic |
| Secessionists | domestic |
| Self-Defence Against All Authority | domestic |
| Separatists | domestic |
| Sixth of March Group | domestic |
| Solidarist Resistance Movement | domestic |
| Supporters of Right and Freedom | domestic |
| Survivors of Golfech | domestic |
| Turks | transnational |
| Ukrainian nationalists | transnational |
| United Liberation Front for the New Algeria | transnational |
| Youth Action Group | domestic |

*Spain*

| *Group* | *Definition* |
|---|---|
| 28th of December Group | domestic |
| Abd al-Krim Commandos | domestic |
| AGEL | domestic |
| Anti-Clerical Pro-Sex Toys Group | domestic |
| Anti-Independence Extremists | domestic |
| Anti-Terrorism ETA (ATE) | transnational |
| Anti-Terrorist Liberation Group (GAL) | transnational |
| Argentine Anti-communist Alliance (AAA) | transnational |
| Armed Groups for Communism | domestic |
| Armenian Secret Army for the Liberation of Armenia | transnational |
| Autonomous Anti-Capitalist Commandos (CAA) | domestic |
| Basque Country Autonomous Self-Defence Group | domestic |
| Basque Extremists | domestic |
| Basque Fatherland and Freedom (ETA) | domestic |
| Basque Separatists | domestic |
| Basque Terrorists | domestic |
| Canary Islands Independence Movement | domestic |
| Catalan Liberation Front (FAC) | domestic |
| Commando Adolph Hitler | transnational |
| Coordination of the United Revolutionary Organization (CORU) | transnational |
| East Timorese Extremists | transnational |
| Fatah Uprising | transnational |
| First of October Antifascist Resistance Group (GRAPO) | domestic |
| Force 17 | transnational |
| Fuerza Nueva | domestic |
| Guerilla Party of the Galician Poor | domestic |

| | |
|---|---|
| Guerrillas of Christ the King | domestic |
| International Anti-Communist Intelligence Service | domestic |
| Jarrai | domestic |
| Justice Commandos for the Armenian Genocide | transnational |
| Mateo Morral Insurrectionist Commandos | domestic |
| Neo-Fascists | transnational |
| Neo-Nazi extremists | transnational |
| Polisario Front | transnational |
| Red Army for the Liberation of Catalonia | domestic |
| Republican Anticlerical Group | domestic |
| Resistance Group | domestic |
| Resistencia Galega | domestic |
| Revolutionary Patriotic Anti-Fascist Front (FRAP) | transnational |
| Right-wing extremists | domestic |
| Right-Wing Group | domestic |
| Spanish Armed Group | domestic |
| Spanish Basque Battalion (BBE) (rightist) | domestic |
| Terra Lliure | domestic |
| Three Stars Autonomous Commando | domestic |
| Young Brigade of Navarro | domestic |
| Youths | domestic |

*The United Kingdom*

| *Group* | *Definition* |
|---|---|
| Abu Hafs al-Masri Brigades | transnational |
| Angry Brigade | domestic |
| Animal liberation Front (ALF) | domestic |
| Animal rights extremists | transnational |
| Animal Rights Militia | domestic |
| Armenian Secret Army for the Liberation of Armenia | transnational |
| Catholic Reaction Force | domestic |
| Combat 18 | domestic |
| Continuity Irish Republicans Army (CIRA) | domestic |
| Direct Action Against Drugs | domestic |
| Dissident Republicans | domestic |
| Guardians of the Islamic Revolution | domestic |
| Guerrillas | domestic |
| Informal anarchist federation | transnational |
| Irish National Liberation Army (INLA) | domestic |
| Irish People's Liberation Organisation (IPLO) | domestic |
| Irish republican Extremists | domestic |
| Justice Commandos for the Armenian Genocide | transnational |
| Libyan Students | transnational |

| | |
|---|---|
| Loyalists | domestic |
| Loyalists Volounteer Force (LVF) | domestic |
| May 15 Organization for the Liberation of Palestine | domestic |
| Meibion Glyndw | domestic |
| Neo-Nazi Extremists | transnational |
| Official Irish Republican Army (OIRA) | domestic |
| Oglaigh na hEireann | domestic |
| Orange Volunteers (OV) | domestic |
| Palestinians | transnational |
| Prison Action Force | domestic |
| Protestant action group | domestic |
| Protestant extremists | transnational |
| Real Irish Republican Army (RIRA) | domestic |
| Real Ulster Freedom Fighters | domestic |
| Red Hand Defenders | domestic |
| Republican Action Against Drugs | domestic |
| Scottish National Liberation Army | domestic |
| Secret Organization of al-Qaida in Europe | domestic |
| Supporters of Johnny Adair | domestic |
| Supporters of Quadafi | transnational |
| The Irish Volunteers | domestic |
| The New Irish republican army | domestic |
| Ulster Volunteer Force (UVF) | domestic |
| White Extremists | transnational |

## D. VAR analysis

*Significant results of Granger Causality test*

| *Causality* | *Significance* |
|---|---|
| *FDI and terrorism* | |
| *France* | |
| FDI → total terrorism | 5% |
| FDI → national terrorism | 5% |
| | |
| *Spain* | |
| FDI → total terrorism | 10% |
| FDI ← total terrorism | 10% |
| FDI → national terrorism | 10% |
| FDI ← national terrorism | 10% |
| | |
| *Within terror* | |
| *The United Kingdom* | |
| national terror → total terror | 5% |
| total terror → transnational teror | 5% |
| national terror → transnational terror | 1% |

*Lag Length Criteria*

*France*

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|---|---|---|---|---|---|---|
| 0 | -1590.573 | NA | 5.34e+32 | 83.87224 | 84.00152* | 83.91824* |
| 1 | -1582.375 | 14.67008 | 5.59e+32 | 83.91445 | 84.43159 | 84.09844 |
| 2 | -1577.307 | 8.268617 | 6.94e+32 | 84.12141 | 85.02639 | 84.44339 |
| 3 | -1561.739 | 22.94140* | 5.04e+32* | 83.77576* | 85.06859 | 84.23574 |

*Spain*

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|---|---|---|---|---|---|---|
| 0 | -1585.431 | NA | 4.08e+32 | 83.60164 | 83.73092 | 83.64764 |
| 1 | -1548.050 | 66.89315 | 9.17e+31 | 82.10788 | 82.62501* | 82.29187 |
| 2 | -1535.378 | 20.67406 | 7.64e+31 | 81.91466 | 82.81964 | 82.23664 |
| 3 | -1518.424 | 24.98566* | 5.16e+31* | 81.49600* | 82.78883 | 81.95598* |

*The United Kingdom*

| Lag | LogL | LR | FPE | AIC | SC | HQ |
|---|---|---|---|---|---|---|
| 0 | -1640.167 | NA | 7.27e+33 | 86.48249 | 86.61178 | 86.52849 |
| 1 | -1618.289 | 39.15055* | 3.70e+33* | 85.80469* | 86.32182* | 85.98868* |
| 2 | -1614.451 | 6.262500 | 4.90e+33 | 86.07636 | 86.98134 | 86.39834 |
| 3 | -1611.026 | 5.046371 | 6.75e+33 | 86.36982 | 87.66265 | 86.82980 |