The financial costs of terrorism: evidence from Germany

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Abstract

Although the physical and emotional costs of terrorism are widely known, the financial price of terror attacks is still obscure. This paper seeks to examine the heightened uncertainty surrounding terror attacks across the two Germany's largest and most visited cities (in particular, Berlin and Munich) to shed some light on the reactions of disaggregated German stock market to those unforeseen events. We robustly find that the impact of terrorism varies across sectors. The Berlin attack causes substantial German stock price moves. The airline, hotels, leisure and communication services were harmfully influenced to those events. Nevertheless, the banking and financial services and defense were weakly affected. More importantly, the German stock market has proven a sharp resilience and a prompt and efficient adaptation. The investors' cognizance of the Germany's modern greatly diversified, and highly competitive economy and the higher institutional quality have allowed to appropriately dealing with adverse consequences associated with terrorist attacks.

1. Introduction

In recent years, terror attacks became more enduring and widespread than in previous years. The terrorism is a very complicated geopolitical issue that hugely harms the international peace, the security of cities, governments, nations and markets worldwide. In recent years, terror attacks became more enduring and widespread than in previous years. The terrorism is a very complicated geopolitical issue that hugely harms the international peace, the security of cities, governments, nations and markets worldwide. Although an immense amount of thought and tremendous interest have been devoted to the direct costs caused by terror attacks including severe physical injuries, deaths, damaged goods, harmed infrastructure as well as the emotional and behavioral effects of terrorism have been largely studied (inter alia: Chen and Siems

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2004; Karolyi and Martell 2010), much less attention has been given to the indirect costs of terrorism including the financial costs. Indeed, the investigation of the effects of terrorism on financial markets became more frequent at the academic level since the unprecedented 11 September Terrorist attacks (for example, Chen and Siems 2004, Karolyi and Martell 2005, among others). Chen and Siems (2004) carried out an event study methodology to assess the impact of terrorism on US capital markets. The analysis revealed that that the US capital markets returns to the normal state promptly after an attack. Karolyi and Martell (2005) utilized the same method to examine the reactions of equity prices to terror attacks and to determine in which countries companies are targets. They deduced that the losses caused by terrorism are more pronounced when the targets are located in more democratic or richer countries. They added that human capital losses are significantly linked to sharp adverse stock price responses. Likewise, Johnston and Nedelescu (2005) assessed the role of market efficiency to safeguard against unforeseen terrorist attacks and found that the appropriate response of the authorities and coordinated efforts among them can enable financial markets to be more efficient in effectively coping with sudden terror chocks. Arin et al. (2008) explored the impact of terror on different financial markets, and showed that terror exerted a significant and stronger influence on both stock market returns and the stock market volatility, and the magnitude of these effects are likely to be more pronounced in emerging markets.

However, as far as the impacts of terror on disaggregated stock markets is concerned, a very limited strand of literature has been found (see, for instance, Drakos and Kutan 2003; Schiereck and Zeidler 2009; Kolaric and chiereck 2016; Apergis and Apergis 2017; Hadi et al. 2019). For instance, Drakos and Kutan (2003) explored the terror consequences on tourism industries by delving into the cases of Greece, Israel, and Turkey. Significant contagion effects of terrorism on their respective equity markets were consistently shown. Schiereck and Zeidler (2009) assessed the responses of financial and banking services shares to terrorist attacks and found significant detrimental effects. Kolaric and chiereck (2016) empirically examined the dynamics of airline stock prices over the heightened uncertainty surrounding the Paris and Brussels terror attacks. They documented that the stock prices follow the efficient market hypothesis. By meticulously evaluating the performances of 27 biggest US, Canadian,

and European airline companies, they showed that terrorism harmfully affect airline industries. Further, Apergis and Apergis (2017) tried to address whether the Paris terror attack exacerbated the stock market volatility of the biggest defense industries. They documented that terrorism intensified the volatility of defense stocks. More recently, Hada et al. (2019) studied the impact of terrorism on the performances tourism, travel, and leisure companies (in terms of returns and volatility) in China, France, Spain, Thailand, Turkey, the United Kingdom, and the United States. A harmfull effect is found for all the countries under study, with the excption of China.

To our best knowledge, no study has been tried to empirically assess the impacts of terror shocks on the different sectors of German economy. In 2016, Germany has experienced successive terror attacks with 22 innocent people killed and 111 injured. Not to bring out the human tragedy, the panic and horror caused by terror, the economic implications might be ruinous for an economy where the total contribution of travel and tourism to GDP exceeds 8% in 2015. According to the World Data Atlas[1], the tourist bookings to Berlin were collapsed by approximately 6.6%, dominantly owing to concerns regarding security in Europe (and Germany, in particular). The terror incidents occurring in Germany over 2016 were not isolated events. In 2015 and 2016, the terrorist attacks happened in various countries where tourism represents a prominent share of GDP, including France (9.1%), U.K. (11.2%), Italy (10.2%), US (8.2%), Thailand (20.8%), Egypt (11.5%), Tunisia (12.6%) and Turkey (12.9%), among others. Following the Paris, Brussels and Berlin terror attacks, France, Belgium and Germany are on alert. In Figure A.1 (Appendix), countries are color-coded and numbered based on the extent of terror threat.

The present research explores two events occurring in Germany's largest and most visited cities (in particular, Berlin and Munich) to evaluate how the risk and return in the German stock market changed as a reaction to those events. The responses of sectoral German stock market to each event is employed to rigorously determine the extent and the direction of change. In particular, the present analysis conducts a modified event study methodology[2] that evaluates the abnormal returns attitudes for

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[1] For more details, you can refer to this link: https://knoema.fr/atlas.

[2] We are very thankful for the Reviewer for the thorough review of our manuscript and for pointing out in-depth comments and thoughful suggestions. A major revision of the paper has been carried out to take all of them into account. Precisely, we reestimate the responses of sectoral German stock market

various industries of the German share market around the days of Munich attack (July 22, 2016) and Berlin terror shock (December 19, 2016). The event study methodology quantifies the economic impact of an event on the returns of a specific company, also called abnormal returns. The latter are determined by subtracting the returns that have been realized when the studied event would not have happened from the contemporaneous returns of the equities.

We deduce from our results that, the effect of uncertainty around Munich and Berlin terror attacks is sector-specific. The airline, hotels, leisure and telecommunications sectors were the most harmfully influenced by the attacks. Other sectors proved their great resilience (in particular, banking and financial services and defense). Some elements have been advanced to explain the heterogeneous reactions of the disaggregated German stock market.

The remainder of the paper is organized as follows. Section 2 depicts meticulously the event study methodology. Section 3 summarizes and discusses the obtained outcomes. Some Section 4 concludes.

2. Methodology and data

While trying to effectively assess the financial price of terrorism, we evaluated the behaviors of various sectors of German stock market to the 2016 Munich and Berlin terror attacks (22 July and 19 December, respectively). For this purpose, we adjust the stock returns to obtain the ex post and ex ante abnormal returns.

The abnormal returns are, thereafter, grouped into the investigated sectors in order to properly measure the disaggregated average (*D*) at time *t*, (AR_{Dt}) expressed as follows :

$$AR_{Dt\,it} = \sum_{i=1}^{n} \ln\left(P_{it}\Big/P_{it-1}\right) - E(R_{it})$$

(1)

Where $E(R_{it})$ is determined by means of this equation:

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to major 2016 terror attacks while utilizing an improved event-study methodology based on new researches (in particular, Ramiah et al. 2016 ; Pham et al. 2018).

$$E(R_{it}) = \beta_{0_{it}} + \beta_{1_{it}}(\tilde{r}_{mt} - \tilde{r}_{ft}) \qquad (2)$$

With P_{it} corresponds to the adjusted price of a specific industry i at time t, $E(R_{it})$ denotes the anticipated return on industry i at time t, $\tilde{r}_{mt}$ is the German market return, and $\tilde{r}_{ft}$ represents the German risk-free rate.

Daily frequency data were downloaded from DataStream covering the period from January 2012 to June 2017. Our sample data incorporates seven sectors of the German stock price index (DAX). The DAX mainly consists of thirty biggest German companies trading on the Frankfurt Stock Exchange. Throughout this investigation, we concentrate on sectors whose core business is presumed to be highly sensitive to terrorism; these sectors include Airlines, hotels and leisure, telecommunications, banking and financial services (banks, insurance, reinsurance and financial services), defense and the German treasury bills as a potential proxy for the risk-free rate. The risk-free rate is defined as the interest an investor would anticipate from an investment totally free from monetary loss the yields in the German treasury bills market are often utilized as the risk-free rate for German investors.[3]

In the following, the event window and the post-event window are employed while attempting to examine the evolving behavior of sectoral German stock market prior to and post- Berlin and Munich terror attacks.

For Munich attack, we account for a window of 260 days, consisting of 239 days prior to the event day and 20 days after the event day. Concerning the Berlin attack, we consider a window of 120 days composed of 99 days[4] before the attack and 20 days after the terror shock. For both events, we estimate the abnormal returns for each industry i during well specified event windows, in particular $[-5;+5],[-10;+10]$, and $[-20; +20]$. To determine the change in systematic risk, a dummy variable (DV), which takes the value 1 on the first day following the terror (i.e., both Berlin and Munich) attack and 0

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[3] The of German Treasury bill is downloaded from the Federal Reserve Bank of St. Louis. For more details, you can refer to this link: https://fred.stlouisfed.org/series/INTGSTDEM193N.

[4] We consider the period beginning after Munich attack and prior to Berlin attack.

otherwise, is included. We multiply the *DV* by the market risk premium to create an interaction variable. The function to estimate is written as follows :

$$\tilde{r}_{it} - \tilde{r}_{ft} = \beta_i^0 + \beta_i^1 \left[\tilde{r}_{mt} - \tilde{r}_{ft}\right] + \beta_i^2 \left[\tilde{r}_{mt} - \tilde{r}_{ft}\right] * DV + \beta_i^3 DV_t + \tilde{\varepsilon}_{it} \tag{3}$$

where $\tilde{r}_{it}$ is the industry *i*'s return at time t, $\tilde{r}_{ft}$ denotes the risk free rate, $\tilde{r}_{mt}$ is the market return, *DV* corresponds to the dummy variable that takes the value 1 on the first day after the terrorist event and 0 otherwise, β_i^0 denotes the intercept, β_i^1 corresponds to the coefficient of the short-run systematic risk of a specific company, β_i^2 corresponds to the coefficient of change in the industry risk, and β_i^3 measures the coefficient of *DV*, $\tilde{\varepsilon}_{it}$ represents the error term.

3. Main empirical results

3.1. Event study methodology results

This study compares the responses of disaggregated German stock market to uncertainty surrounding two 2016 terror attacks. We focus on sectors that are assumed to be most exposed to terrorist attacks. These sectors mainly include airlines, hotels and leisure, telecom, banking and financial services and defense.

Table 1 (Panel A) displays the abnormal returns and cumulative abnormal returns prior to and after the Munich attack (i.e., after 5, 10 and 20 days). Our findings reveal that the impact of the Munich terror attack on the German stock market varies across the different sectors under investigation. Some sectors responded positively to this event including banking and financial services and defense. More specifically, the banking and financial services industry is influenced positively by approximately 1.71% over 5 days after the event day, and continued to experience an increased return after 20 days by about 3.27%. The defense sector witnessed an abnormal return of approximately 2.14% after 20 days. The resilience of banking and financial services can be highly explained by the soundness, the stability and the diversification of German banking system. The positive reaction of the defense sector to the risk of terrorism is also not surprising. In fact, the recent increase in terror attacks pushed the German

government to grant immense aid to defense and security industries while attempting to deeply encourage them to develop innovative defense products allowing to efficaciously preventing possible threats. However, three sectors harmfully reacted to terror, in particular airlines, hotels and leisure and telecommunications. Airlines experienced a negative abnormal return over 5 days after the Munich attack, but this response becomes positive after 20 days. The immediate negative reaction of airlines industry is widely anticipated. A significant literature on the focal topic claimed that terror reshape tourism demand yielding to an increased desire to cancel travel especially instantly after the attack (inter alia: Seddighi et al. 2001; Stafford et al. 2002; Chen and Noriega 2004; Kingsbury and Brunn 2004). It must be pointed out that the attitude is one of the main driving forces of tourist' motives towards a destination. Indeed, negative attitudes owing to a terrorist incident may raise safety concerns, and as a consequence harmfully affects the travel decision (Stafford and Armoo 2002; Floyd et al. 2003). Hotels and leisure sector was also adversely impacted over 5 days after the event date, before recovering after ten days. Expectedly, immediately after a terror attach, tourists might abandon travelling if the major goal of the travel is for leisure (Santana-Gallego et al. 2016). The telecommunications sector was also negatively impacted after 10days, but it its reaction becomes positive after 20 days (i.e., CAR of 1.54%). The remarkable enhancement of information exchange in the fight against terror incidents becomes much more appealing in Germany after the consecutive 2016 terror attacks.

Table 1 (Panel B) displays the abnormal returns and the cumulative abnormal returns before and after the Berlin attack (i.e., 5, 10 and 20 days after the attack). We first note that the German stock market was more responsive to Berlin attack. This result can be explained by the popularity of this city. According to travel analysts Euromonitor, Berlin is the most popular destination in Germany. It is ranked as the third among the most-visited destinations in Europe. Thus, it is hugely expected that the Berlin attack would have an adverse and pronounced impact on the amount of visitors, and thereafter on the travel and tourism industries. The banking and financial services and defense sectors were significantly influenced by Berlin attacks but such an impact seems weak. Although a decline in the cumulative abnormal returns is found over 5days after the event day, a marked increase is shown after 20 days. The negative responses of some sectors including airlines, hotels and leisure and telecommunications are observed

after the Berlin attack. But these negative responses are not persistent. The effect vanishes over time.

Table 1. The sectoral responses of the German industries to terror attacks

Panel A. Munich attack

Sectors	AR	CAR(-239)	CAR5	CAR10	CAR20
Airlines	-1.49* (-1.95)	5.12*** (6.21)	-1.24** (-2.80)	-1.55* (-1.95)	1.62*** (3.50)
Hotels and leisure	-0.76* (-1.79)	1.91** (2.37)	-0.76*** (-3.42)	1.17*** (3.69)	1.52*** (4.34)
Telecommunications	-1.14** (-2.67)	3.06* (1.89)	-1.69 (-1.13)	-0.81** (-1.77)	1.54* (1.82)
Banking and financial services	2.41*** (4.38)	3.17 *** (4.29)	1.71* (1.88)	2.14* (1.90)	3.27*** (4.55)
Defense	1.96** (2.80)	2.16** (2.88)	1.11** (2.36)	1.49* (1.72)	2.14* (1.91)

Panel B. Berlin attack

Sectors	AR	CAR(-99)	CAR5	CAR10	CAR20
Airlines	-2.38* (-1.77)	1.58*** (3.95)	-2.50** (-2.91)	-3.42*** (-5.27)	1.77** (2.68)
Hotels and leisure	-1.69** (-2.41)	1.79*** (5.14)	-0.81*** (-4.16)	-1.34* (-1.73)	1.81* (1.99)
Telecommunications	-1.74*** (-3.52)	1.79** (2.54)	-1.87* (-1.99)	-1.69* (-1.83)	1.32* (1.75)
Banking and financial services	1.95** (2.81)	1.68* (1.90)	1.28*** (3.49)	2.40** (2.78)	2.96*** (5.32)
Defense	1.86* (1.91)	1.55* (1.87)	0.81** (2.13)	1.79* (1.82)	2.73** (2.84)

*Notes: AR: Abnormal returns; CAR: Cumulative abnormal returns; *, **, *** denote statistical significance at the 10%, 5% and 1% levels, respectively.*

Figure 1 accurately depicts the cumulative abnormal returns of sectoral German stock market as a reaction to the Munich and Berlin terror attacks with more details for an extended event window : [-20, +20]. We confirm that the effect is sector-specific.

Figure 1. The cumulative abnormal returns of sectoral German stock market in response to terror attacks over an expanded event window
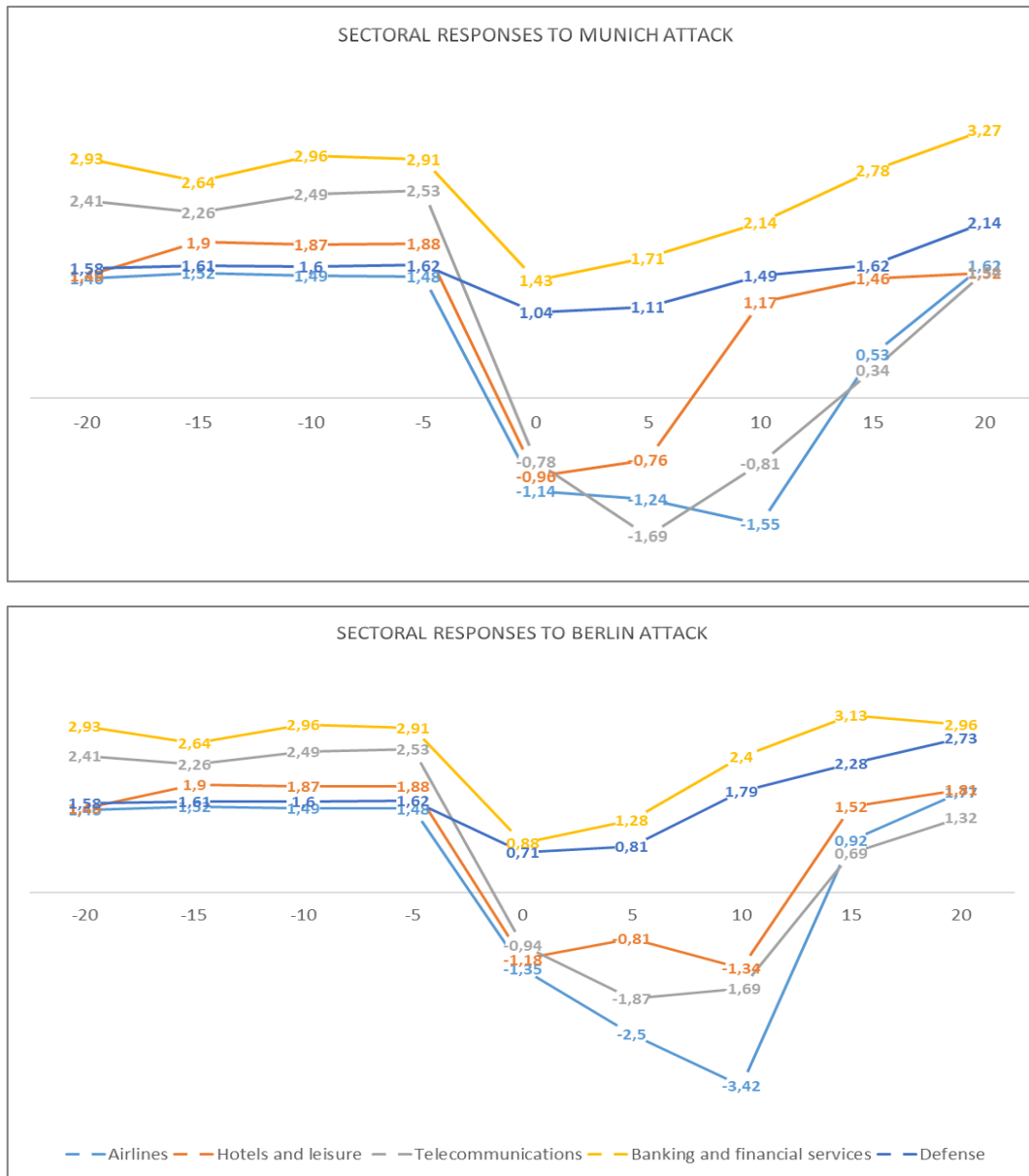

Table 2 display the changes in the short-run systematic risk by industry after Berlin and Munich terror attacks (Panels A and B, respectively). Our findings reveal that the terrorist attack has yielded to a notable rise in systematic risk for the majority of industries under study, particularly for airlines, hotels and leisure and telecommunications. Following the Berlin attack, the airlines sector witnessed a marked rise in systematic risk from 0.16 to 0.89. Likewise, hotels and leisure sector experienced

also an increase in immediate risk from 0.41 to 0.79. However, we clearly note that the periods post-Munich and Berlin attacks are marked by a sharp decline in risks for all the industries under consideration.

Table 2. Changes in immediate risk of the German stock market industries after terror attacks

Sectors	Beta prior to the attack	Immediate risk	Beta post-attack
Panel A. Munich attack			
Airlines	0.21	0.92	0.38
Hotels and leisure	0.15	0.79	0.26
Telecommunications	0.06	0.48	0.14
Banking and financial services	0.11	0.17	0.13
Defense	0.12	0.19	0.14
Panel B. Berlin attack			
Airlines	0.16	0.89	0.21
Hotels and leisure	0.21	0.77	0.19
Telecommunications	0.22	0.31	0.23
Banking and financial services	0.18	0.27	0.19
Defense	0.16	0.20	0.15

3.2. Robustness tests

Throughout the rest of our analysis, we assess the sensitivity of our findings to the incorporation of supplementary explanatory variables. The global financial and economic factors are largely perceived as potential channels through which sharp changes the global economic and financial situations are transmitted to the various industries of the German stock market. Given this consideration, we incorporate the German volatility index (*VDax*) that is calculated by Euronext and Eurex, and the world gold price (*Gold*). We used the gold fixing price 10:30 A.M. (London time) downloaded from the Federal Reserve Bank of St. Louis. It must be stressed that gold has been widely seen as a well-established safe haven investment against stock market volatility (Baur and McDermott, 2010). Additionally, the literature in finance has been predominantly relied on multiple uncertainty indicators. One of these indicators is the implied volatility of stock returns. The latter effectively reflects the increased anxiety of German companies surrounding the 2016 terror attacks. In this context, *VDax* seems sensitive to all events that may cause heightened uncertainty including the 2016 terror attacks. Briefly, the equation to be estimated is expressed as follows:

$$\tilde{r}_{it} - \tilde{r}_{ft} = \delta_i^0 + \delta_i^1 \left[\tilde{r}_{mt} - \tilde{r}_{ft} \right] + \delta_i^2 \left[\tilde{r}_{mt} - \tilde{r}_{ft} \right] * DV + \delta_i^3 DV_t + \delta_i^4 VDax_t + \delta_i^5 Gold_t + \tilde{\xi}_{it} \quad (4)$$

where δ_i^0 denotes the intercept term of the equation [E(δ_i^0) = 0], δ_i^1 measures the average immediate systematic risk of each industry, δ_i^2 refers to the change in the industry risk, and δ_i^3 is the intercept of Equation (4), δ_i^4 corresponds to the change in the *VDax* coefficient, δ_i^5 denotes the gold return coefficient, and $\tilde{\xi}_{it}$ is the error term.

By adding *VDax* and *Gold* as relevant control variables, our main findings are still fairly robust. Table 3 reports the cumulative abnormal returns prior to and post Munich/Berlin attacks.

We sustain evidence that terror has an adverse impact on most sectors, though with different sensitivities. The Munich Berlin attacks are significantly linked to adverse stock prices responses of airlines, hotels and leisure and telecommunications from the event day and the ten first days of trading. But these reactions becomes positive after 20 days. Banking and financial services and defense sectors appear much less harmed, spotlighting their resilience and efficient adptation to terror shocks.

$$\tilde{r}_{it} - \tilde{r}_{ft} = \delta_i^0 + \delta_i^1 \left[\tilde{r}_{mt} - \tilde{r}_{ft} \right] + \delta_i^2 \left[\tilde{r}_{mt} - \tilde{r}_{ft} \right] * DV + \delta_i^3 DV_t + \delta_i^4 VDax_t + \delta_i^5 Gold_t + \tilde{\xi}_{it}$$

Available online at http://eaces.liuc.it

Table 3. The sectoral reactions of the German industries to terror attacksafter accounting for further control variable

Sectors	AR	CAR(-239)	CAR5	CAR10	CAR20
Panel A. Munich attack					
Airlines	-1.61** (-2.78)	4.89** (2.72)	-1.42* (-1.95)	-1.61* (-1.74)	1.57*** (4.16)
Hotels and leisure	-0.81** (-2.45)	2.17** (2.58)	-0.94** (-2.65)	0.23* (1.78)	1.42** (2.33)
Telecommunications	-1.09*** (-3.42)	1.98** (2.31)	-0.67* (-1.90)	0.61** (-2.21)	1.33* (1.94)
Banking and financial services	1.98** (2.73)	4.61 *** (3.95)	1.61** (2.49)	3.23*** (4.88)	3.19*** (5.81)
Defense	1.86*** (4.09)	3.04*** (3.26)	1.40*** (3.41)	2.14* (1.83)	2.68** (2.30)
Panel B. Berlin attack					
Airlines	-1.76*** (-3.11)	1.81** (2.16)	-1.51* (-1.84)	-1.44** (-2.56)	1.33* (1.94)
Hotels and leisure	-1.58* (-1.92)	1.94** (2.76)	-1.23 ** (-2.52)	0.62* (1.90)	1.29*** (3.41)
Telecommunications	-0.98** (-2.61)	1.88*** (3.39)	-0.95* (-1.74)	0.76* (1.86)	1.31* (2.61)
Banking and financial services	1.73** (2.67)	1.55* (1.78)	1.61** (2.69)	2.64* (1.93)	3.19** (2.73)
Defense	1.94*** (4.24)	1.53* (1.81)	1.52** (1.94)	2.09* (1.85)	2.53** (2.11)

*Notes: AR: Abnormal returns; CAR: Cumulative abnormal returns; *, **, *** denote statistical significance at the 10%, 5% and 1% levels, respectively.*

Figure 2 describes the cumulative abnormal returns of the German industries in response to the two major 2016 terror attacks for an expanded event window. We sustain evidence of heterogenuous responses of the sectoral Geman stock market, and that the various industries studied are more responsive to Berlin attack.

Figure 2. The cumulative abnormal returns of sectoral German stock market in response to terror attacks over an expanded event window after accounting for further control variables
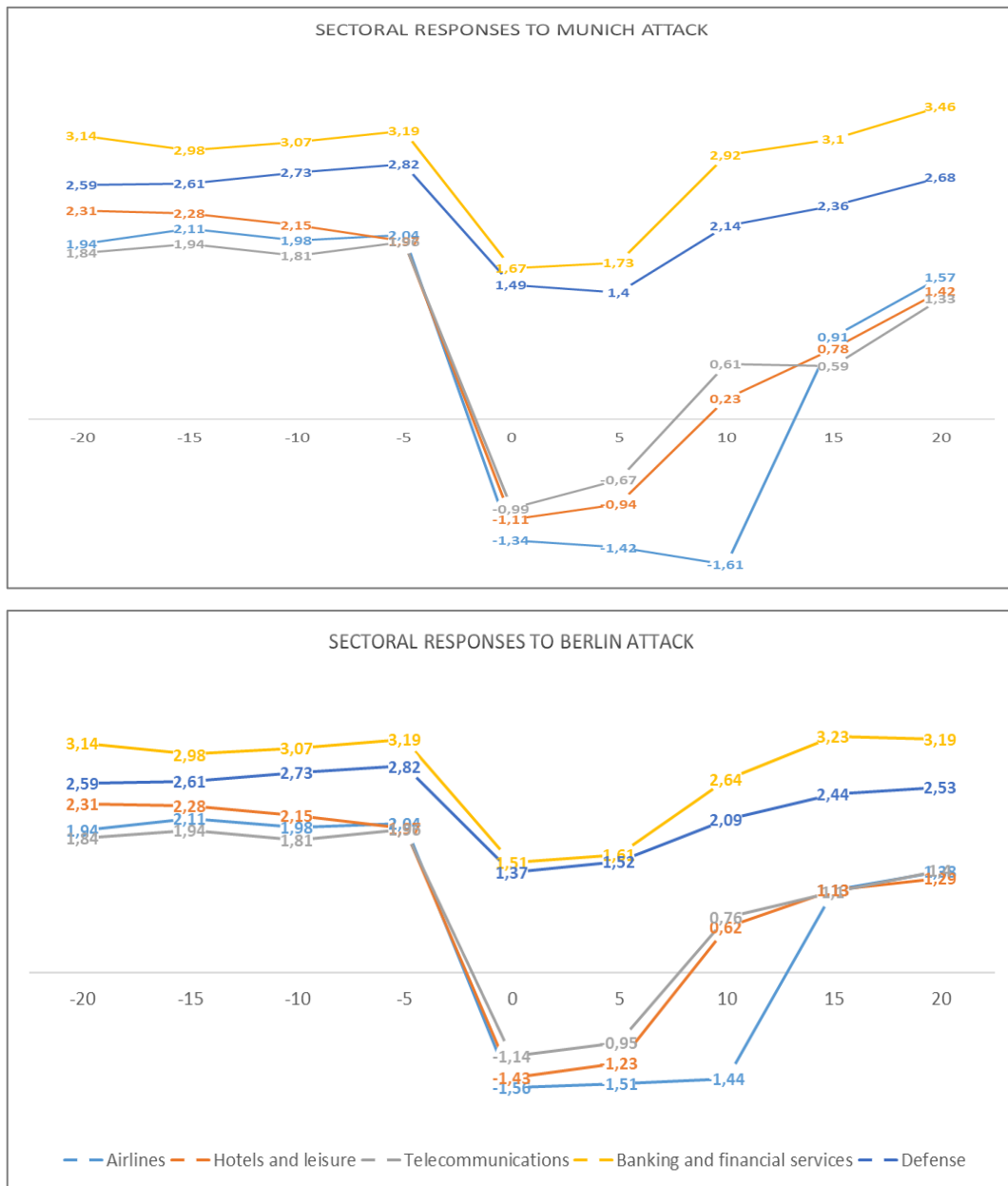
Besides, the changes in the short-term systematic risk following the 2016 Munich and Berlin attacks by sector remain robust after adding further control variables (in particular, *VDax* and *Gold*). Table 4 summarizes the results for Munich and Berlin attacks (Panels A and B, respectively). We consistently document that (a) terror attacks had prompted a marked increase in systematic risk for all sectors, though with varying

extent, and (b) the immediate risk drops sharply after Berlin and Munich event days; this holds valid for all the industries under study.

Table 4. Changes in immediate risk of the German industries after controlling for further control variables

Sectors	Beta prior to the attack	Immediate risk	Beta post-attack
Panel A. Munich attack			
Airlines	0.14	0.68	0.19
Hotels and leisure	0.10	0.54	0.13
Telecommunications	0.12	0.39	0.16
Banking and financial services	0.08	0.19	0.10
Defense	0.11	0.17	0.09
Panel B. Berlin attack			
Airlines	0.19	0.79	0.24
Hotels and leisure	0.17	0.66	0.19
Telecommunications	0.13	0.44	0.16
Banking and financial services	0.11	0.20	0.13
Defense	**0.14**	**0.18**	**0.12**

4. Conclusions

The noticeable surge in the number of terrorist attacks in Europe in recent years likely implies that the price of terrorism will continue to rise. Much significant research has shown that terrorist attacks are significantly associated with episodes of heightened uncertainty, and thus, it is of interest to explore the effects of terrorism on stock market performances to appropriately guide policy. Throughout this paper, we assess, by means of relatively new econometric tools (i.e., an improved event study methodology) the stock price responses of German industries to Berlin and Munich terrorist attacks happening in 2016 to provide fresh insights regarding the losses caused by these dramatic events.

This article' outcomes deeply suggest that Munich and Berlin attacks significantly influence the German stock market. But this effect seems sector-specific. More accurately, some sectors had proven their great resilience and adaptability to these unforeseen terror including banking and financial services and defense industries. The financial sector provides adequate liquidity to foster market stability and curb panic. The prompt adaptation of defense sector might be attributed to the fact that an increase in terror attacks enforced German government to seriously and swiftly act by funding

programs designed to keep cities more secure from terrorist attacks, and to further enhance military technologies and capabilities to successfully fight terrorism. Airlines, hotels and leisure and communication services, however, have been harmfully affected by terror. But these responses did not persist. Expectedly, the immediate effect of any potential event might prompt negative abnormal returns due to rising uncertainty as the new information is being well absorbed and the possible consequences of terror are carefully assessed, equities might return to their pre-event states.

Regardless of the subsequent terror attacks, German industries appear sharply resilient towards terror. This underscores that the German market conditions have the ability to bounce back instantly or swiftly, as economic resilience and investors' trust roll back short-term setbacks. This may reflect an industrial strength that has been widely evaluated in global competition over several decades and has demonstrated its great resilience and prompt and efficient adaptation to unforeseen shocks. The increased financial integration has allowed Germany to safeguard against major events or sudden shocks. For a country mainly distinguished by its financial system's soundness and stability (IMF, 2017) as well as its higher ability to innovate and to compete globally, terror attacks are less likely to have pronounced and long-term financial and economic repercussions. Last but not least, hedging and financing tools, which are usually substantially linked to investment banking, form an integral part of financial services for German companies, which may also help to successfully deal with sudden shocks.

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Appendix

Figure A.1. Terrorism risk in Europe

Source : Foreign & Commonwealth Office.