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THE IMPACT OF TERRORISM AND ANTI-TERRORISM ON CAPITAL MARKETS

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The Impact of Terrorism and Anti-terrorism on Capital Markets

Abstract

This paper investigates the effect of continuous terror attacks and anti-terrorism policy on stock and bond markets and on the risk premium required by investors. The empirical findings are based on a unique sample of 280 terror events experienced in Israel and 58 targeted killings carried out as anti-terrorism policy during the *Intifada* years, 2000-2003. Based on daily and intra-daily data of share prices and an index of terror intensity, our main findings are: i) share prices declined by about 0.48% on average following each terror attack but the decline in share prices was due to continued deterioration in expected future cash flows and not due to increased risk premium;; ii) anti-terrorism policy had an insignificant effect on share prices; iii) short-term government bonds substituted for investment in stocks in response to terror attacks

The Impact of Terrorism Attacks and Antiterrorism on Capital Markets

1. Introduction

The discounted-cash-flow valuation model states that stock prices reflect investors' expectations about future corporate earnings and cost of capital. Accordingly, if terror attacks negatively affect expectations of firms' profitability and/or positively affect the cost of capital due to increased uncertainty, share prices are expected to decline. Following the 9/11 attack in NY and the two terror attacks in European capitals – Madrid (March 2004) and London (July 2005) – local financial markets seemed to rapidly recover, indicating that the attacks' effect was transitory. Unlike these events, in this paper we test the hypothesis that the effects of continuous terror attacks on the stock and bond markets are not transitory and yet they do not affect the risk premium required by investors. We also raise the hypothesis anti-terrorism attacks had no effect on the capital markets.

The research is based on a unique sample of 280 terror events witnessed in Israel during the 2000-2003 *Intifada*. The sample allows us to estimate the effect of terror attacks in an economy constantly afflicted by such attacks (an average of one attack

every two days).¹ It extends Eldor, Hauser and Melnick (2007) paper by investigating different aspects of the economic damage suffered by investors in financial markets including the effect of anti-terrorism policy, terror intensity, investors expectations vs. the risk-premium required by them and the substitutability of the bond and stock markets. The effect of anti-terrorism policy on the stock and bond markets is investigated by analyzing market behavior after 58 cases of targeted killings.² The level of investor pessimism is assessed by a *Terror Index (TI)* comprised of factors characterizing the attack, especially its location (inside or outside the Green borderline whether it was a suicide attack, the number of casualties (killed and wounded) and the scope of newspaper coverage.³

This is the also first study that analyzes the effect of terror attacks on stock and bond markets as well as on the substitutability of the two markets. The study extends the findings of recent research that has attempted to estimate the economic damage inflicted by terror attacks. In some of these studies, the economic damage was estimated on the basis of the number of attacks and the number of casualties, economic growth rates and share prices.⁴

One of the studies dealing with the permanence of the effect of terror attacks on economic costs was that conducted by Eldor, Hauser and Melnick (2007) who analyzed the intra-day effects of routine terror attacks and found a permanent effect. Another study conducted by Chen and Sims (2004), who analyzed 14 cases of terror-

¹ See for example Eldor, Hauser and Melnick (2007), Chen and Sims (2004), Brooke and Vickstrom (2004) and Johnston and Nedlesceau (2005).

² The sample was based on the database maintained by the Center for Anti-Terrorism Policy, the Interdisciplinary Center (ICT), Herzliya.

³ See Eldor, Hauser, Melnick and Levi (2007) who suggested the TI index.

or war-related events that had taken place in the US since 1915. Their findings indicate that financial markets became more stable over time and that recovery became increasingly more rapid. Contrary to these findings, which were based on data from markets where terror attacks are rare or sporadic, we analyze the cumulative effect on financial markets in Israel, where terror attacks are considered “routine” events.

Our hypothesis regarding the permanent (or transitory) character of these effects also relates to the Brooke and Vickstrom (2004) argument that the economic effects of terror are felt in the period following the attack and that the extent of the losses depends on the attack’s characteristics – the number of people killed and wounded and the level of property damage. They claim that the impact of visually tangible results (as in the case of the 9/11 attack) should be compared with the effect of fear of other types of attacks, which cultivates anxiety and thus exhibits long-term indirect negative outcomes. These arguments are also explored in this study from several directions, including estimation of the effect of the attack’s characteristics (suicide bombings, number of killed and wounded, location, etc.) on the respective financial markets.

One factor frequently ignored in the literature is the dilemma facing governments regarding the relationship between anti-terror policy and that policy’s economic impacts. Garfinkel (2004) has proposed a model that considers two of the hazards that affect an economy’s stability. The first is uncertainty and a weak sense of security, which undermines economic growth; the second pertains to the effectiveness of

⁴ See for example Abadi and Gregzabel (2003), Brooke and Vickstrom (2004), Eldor and Melnick

government responses to the terrorist threat, actions that determine whether terror will exert meaningful (long-term) influences. The latter factor is difficult or impossible to analyze in capital markets experiencing few and sporadic terror attacks. However, because terror attacks in Israel have become a "routine" element of daily life in Israel, we are able to analyze the influence of the Israeli government's anti-terror policy. This policy, often conducted by means of targeted killings, is meant, among other things, to reduce the uncertainty experienced by the country's citizens. Such circumstances allow us to test the theoretical model proposed by Jin and Mockland (2004), according to which terror attacks modify the expectations of victims as well as of the terrorists themselves.

The study is organized into seven parts. In part 2, we present the data and methodology used to investigate the effect of terror attacks on financial markets. In part 3 we analyze the effect of terror attacks on share prices, investors' expectations and the risk premium investors require. In part 4 we estimate the effect of terror attacks on the bond market. In part 5, we analyze the influence of anti-terrorism policy (i.e., targeted killings) on financial markets. In part 6 we suggest an additional analysis, aimed at testing the hypothesis that terror's effect on capital markets is permanent, by applying a terror index that measures terror intensity. In section 7 we provide a summary of the main findings and conclusions.

(2004), Chen and Sims (2004) and Eckstein and Tsidon (2004).

2. Data and Methodology

2.1 Data

The data include characteristics of the terror attacks committed during the period of the *Intifada al-Aqsa* from its outbreak in September 2000 until its conclusion in late 2003. During this period, 460 terror attacks were carried out. Our sample includes data on all 460 terror attacks. For purposes of the event study, whenever more than one terror attack occurred on the same day or during the weekend, or when trading did not take place, the attacks were considered as single events. The sample was reduced accordingly, to 280 terror events. In addition, the data include 58 reprisal events – implementation of the Israeli government’s anti-terror policy by means of targeted killings.

We use daily share prices (TA-25 index) on the days surrounding the date of each of the 280 terror events. These data include the government bond indices for bonds maturing between 2 and 15 years. TA-25 stocks represent more than 60% of the volume traded on the TASE, where trading is continuous and electronic (see Kalai, Wey and Wohl (2002) for a description of the Tel Aviv system). Data on the characteristics of the terror attacks and on the time of the attacks were culled from the databank maintained by the Interdisciplinary Center in Herzeliya and from newspaper reports.

Place Table 1 about here

To measure the effect of the risk premium, we also used the S&P500 daily price index and a global index. The global index was constructed as a weighted average of four

currencies (those used for almost 100% of Israel's foreign trade): the US dollar, Euro, Japanese Yen and Canadian Dollar. The daily weights were extracted from the basket of currencies calculated and published by the Central Bank of Israel. The daily return was calculated in Israeli currency by using the exchange rate of a unit of each of the basket's currencies per 1 NIS.

2.2 Methodology

We use an event-study analysis based on daily data (closing prices) and intra-day data (half-minute prices) of the TA-25 index (the 25 largest companies traded on the TASE). Using the daily data, we estimated the rates of return of the TA-25 stock index on the day prior to the event (-1), the day of the event (0), the day following the event (+1) and two days after the event (+2). If the rates of return on the second day after the attack were either not significant or exhibited a sign different from the overshooting response, we consider it evidence of the terror attack's permanent influence on stock prices.

Following the Eldor, Hauser and Melnick (2007) methodology, we also estimated the effect of several factors on stock market investors' responses by constructing their *Pessimism* or *Terror Index (TI)*. The index is based on the following parameters:

$$(1) \quad TI = D_1 + D_2 + D_3 + D_4 + D_5$$

where:

$D_1 = 0$ if the attack was beyond the green line and 1 if it was within the green line;

$D_2 = 0$ if the attack was not a suicide attack and 1 if it was;

$D_3 = 0$ if there were no deaths and 1 if there were;

$D_4 = 0$ if there were no injured and 1 if there were;

$D_5 = 0$ if the event was not reported on a newspaper's front page and 1 if it was.

We then ran the following regression:

$$(2) \quad Y_t = \alpha_0 + \beta_1 R_US_t + \gamma_0 TI_t + \gamma_1 TI_{t-1} + \gamma_2 TI_{t-2} + \gamma_3 Y_{t-1} + \varepsilon_t$$

Where $Y_t = R_TA_t, R_govt_t$ represent stock and bond indices rates of return, respectively; R_US (rates of return of US stocks or bond indices, respectively) of the domestic economy that is linking it to international financial markets.⁵ TI represents the level of pessimism, an index receiving values ranging from 0 to 5 (Eq. (1)), where 5 indicates the highest level of attack severity. Y_{t-i} represents stock or bond rates of return, respectively, on day $t-i$. According to this regression, $\gamma_0 + \gamma_1 + \gamma_2 \neq 0$ indicates that the terror attack's effect is permanent, and $\gamma_2 > 0$ indicates that the attack's effect is characterized by overreaction and subsequent corrections, that is, it is temporary.

Finally, we examined the effect of the government's response to the terror attacks by means of targeted killings. It is aimed at testing the hypothesis that anti-terror policy (targeted killings) has a positive effect on stock prices by compensating for the negative influence of terror attacks on capital markets as well as the general economy.

3. The Stock Market

Declining share prices may be due to a decline in the anticipated profitability of firms and/or a rise in the cost of capital, possibly due to increased risk premiums. In this section we test the effect of terrorism on investors' expectations and on the risk premium required by them.

Similar to Eldor, Hauser and Melnick (2007) we find an immediate decline of share prices by an average of $CAR(-1,2)=0.48\%$ (p-value=0.006) in share prices. Next day changes in share prices were insignificantly different from zero.

Based on basic present value reasoning, there are two possible explanations to this decline: Either terrorism increases the cost of equity through an increase in the market's systematic risk and/or the market price of risk; or it decreases traders' expectations regarding firms' profitability and the economy as a whole. The latter possibility is difficult to verify empirically since it needs a complete model of the economy that will provide testable assumptions as to agents' formation of expectations. Instead, given the fact that share prices decline following terror attacks, we test whether this decline is also due to increased risk premiums by examining whether the Israeli market's aggregate systematic risk and risk premiums have been affected by terrorism.

⁵ Over 100 Israeli firms are listed in the US; 38 of these firms are traded in the US, the majority on the NASDAQ as well as the Tel Aviv Stock exchanges. Some also enjoy a very high volume of trade in Israel, which is affected by both markets.

For this purpose, we first examined systematic risk over time by estimating a simple unconditional international capital asset pricing model using the S&P500 as the market portfolio. This choice is dictated by the historical linkage between the Israeli and the US markets, stemming from the fact that most of Israeli foreign trade is with the US and that a large number of Israeli companies are traded on US exchanges. We thus ran the following regression:

$$(3) \quad R_{i,t} = \alpha_1 + \alpha_2 \cdot D + \beta_1 \cdot R_{m,t} + \beta_2 \cdot (D \cdot R_{m,t}) + \varepsilon_t$$

where $R_{i,t}$ signifies the daily rate of return on the Israeli stock index, $R_{m,t}$ signifies the S&P500 return and D is a dummy equal to 0 outside the *Intifada* period and 1 during the *Intifada*. The parameter α_2 is susceptible to changes in mispricing during the *Intifada* period while β_2 captures changes in the systematic risk of the Israeli stock market during the same period.

Based on daily returns, the results of this estimation (p-values are given below the parameters estimates) are:

$$(4) \quad R_{i,t} = \underset{(0.515)}{0.000336} - \underset{(0.273)}{0.000822} \cdot D + \underset{(0.0947)}{0.066} \cdot R_{m,t} + \underset{(0.1728)}{0.0753} \cdot (D \cdot R_{m,t})$$

and R^2 is 0.0132.

The first notable implication of this estimation is that the model does quite well at capturing the behavior of Israeli market returns since the pricing error is not

significantly different from 0. This result is in line with Lewellen and Nagel (2005), for example, who show that conditional models are not necessary helpful in explaining the behavior of asset returns. The *Intifada* has not affected the ability of this model to explain Israeli market returns, reflected by the fact that α_2 is not significantly different from 0. The most important finding here, which is at the heart of our analysis, is that the Israeli market's Beta, relative to the US market, has not been affected by the *Intifada*. We consequently tend to conclude that the Israeli market's systematic risk remained unchanged throughout the *Intifada*.

To check for the robustness of our findings, we ran regression (3) on monthly returns. The results are:

$$(5) \quad R_{i,t} = 0.01428 - 0.01514 \cdot D + 0.362 \cdot R_{m,t} + 0.068 \cdot (D \cdot R_{m,t})$$

(0.191)
(0.321)
(0.064)
(0.8175)

and R^2 is 0.1138.

The findings, using monthly data confirm, the results obtained with daily data and are even better.

Another robustness test was conducted by using an alternative market portfolio. We built a market portfolio based on the basket of currencies used by the Israel's Central Bank to conduct its monetary policy. This basket of currencies (similar in its nature to SDRs) contain currencies from the main regions of the world with which Israel carries on important exchange relationships; the weight of each currency is related to the weight of the country and/or the region in Israel's foreign trade. To build the

alternative market portfolio return, we used the indices for each of these regions, as described in Section 2.3. The results using daily returns were:

$$(6) \quad R_{i,t} = 0.00040 - 0.00078 \cdot D + 0.211 \cdot R_{m,t} + 0.00032 \cdot (D \cdot R_{m,t})$$

(0.424)
(0.283)
(<0.001)
(0.996)

and R^2 is 0.0353. Using monthly returns, the results were:

$$(7) \quad R_{i,t} = 0.014 - 0.0149 \cdot D + 0.414 \cdot R_{m,t} + 0.055 \cdot (D \cdot R_{m,t})$$

(0.187)
(0.3185)
(0.043)
(0.846)

and R^2 is 0.1389.

The overall picture emerging is a robust response to the question of whether the continuous terror attacks during the period studied provoked a decline in asset prices through expected cash flows or through the discount rate. It appears that during the *Intifada*, the *market price of risk* did not change and that the decline in share prices resulted from agents' expectations of future deteriorating cash flows from stock holdings. That is, "routine" terror attacks caused investors to become more pessimistic and little by little reduced their expectations of a firm's future profits. This occurred without raising their evaluations regarding the height of the risk premium – so long as the wave of terror continued.

4. The effect of terror attacks on bond prices

Bond prices are primarily influenced by two factors, operating in polar directions. The first factor is investors' expectations of a rise in interest rates as a result of

increases in uncertainty, an event that has a negative impact on bond prices. Second, if investors decide to transfer their investments in stocks to more solid investments, such a decision will have a positive effect on bond prices due to the increased demand. In order to determine which of these factors is more dominant, we estimated **changes of** different bond indices, including the general bond index (0-15 years), the short-term bond index (redemption within 2 years) and long-term bonds (redemption within 10 to 15 years).

Table 2 about here

Table 2 displays the results for different bond indices. The main findings are: (1) the general bond index significantly increased by about 0.041% ($p = 0.060$); (2) the short-term government bond index (redemption within 2 years) rose even more, by about 0.065% ($p = 0.000$); and (3) the long-term bond index (redemption within 10 to 15 years) declined by about 0.012% although the decline was not significantly different from zero ($p = 0.750$). One possible explanation of these findings is that investors sold stocks as a result of the terror attacks since they expected firms' profitability to decline and subsequently bought short-term government bonds. The rise in demand culminated in increased bond prices. This finding indicates that the substitution effect can be more dominant than that of uncertainty, which drives increases in the interest rate. The fact that the long-term bond index did not rise indicates that given fear of damage to economic growth in response to terror attacks, investors seek alternative investments in short-term government bonds. These investors thus avoid long-term bonds, which are more sensitive to fundamental changes in the wider.

5. The effect of anti-terrorism policy on financial markets

Garfinkel (2004) as well as Jin and Mockland (2004) argue that terror attacks influence the expectations held by victims as well as the terrorists themselves; therefore, an anti-terrorism policy should be aimed at increasing uncertainty among the terrorists, thus decreasing their motivations to act. In this section we analyze the effect of the anti-terrorism policy implemented by the government of Israel by means of targeted killings. According to this policy, Israel tirelessly searches for the initiators of terror attacks in order to minimize their opportunities to act individually and to activate others. Considering the commonly held belief that this policy usually bears fruit, our hypothesis is that targeted killings will have a positive effect on stock prices (Frye, Lusiniger and Stultcher (2004) and Zussman and Zussman, (2006)).

This hypothesis is been tested in two ways. First, we used an event-study analysis to examine the effect of the 58 targeted killings on stock prices. We found that on the days that targeted killings were executed, stock prices rose insignificantly, by an average of about 0.13% ($CR(-1,1)$, $p = 0.680$).

Second, we compared changes in stock and bond prices on the days when targeted killings took place immediately after the terror attack with other days, when no targeted killings occurred subsequent to terror attacks. The findings are shown on Table 3.

Table 3 about here

It appears that stock prices declined on days when targeted killings followed terror attacks by about 0.32% in comparison to 0.45% on the days when no targeted killings were executed. The difference (0.13%) between them is similar to the positive effect on stock prices obtained in the first test, a result that also lacks statistical significance ($p = 0.301$). In contrast, however, when compared to days on which targeting killings did not follow a terror attack, we found significant increases in the prices of the general and government short-term bond indices on those days that targeted killings did take place. The general bond index rose by about 0.071% in response to terror attacks when no targeted killings were executed and declined by about 0.005% on the days when targeted killings were executed shortly after an attack.

Does this finding contradict economic intuition? Not necessarily, especially when one takes into account the finding that investors substitute their investments in stocks for investments in bonds, particularly short-term government bonds. The latter is consistent with the described tendency of investors to exchange stocks for the government bonds in response to terror attacks, but only on days when no targeted killings took place. Alternatively, on those days when targeted killings were not executed, this tendency remained dormant. These findings support the Jin and Mockland (2004) model in the sense that within the stock market, investor responses to demonstrations of government anti-terror policy are much less extreme than on days when such actions did not take place.

6. Testing the permanent effect of terrorism on capital markets

In section 3 we analyzed the effect of terror attacks on stock prices. We found that stock prices declined at an average of about 0.4% but no evidence of overshooting and subsequent corrections. In section 4 we found a significant increase of bond prices. In this section, we provide an additional test of the permanent effects of terror attacks on the stock and bond markets by applying a regression model (2) suggested by Eldor and Melnick (2004). However, unlike Eldor and Melnick, we enter the pessimism (terrorism) index (TI) as well as the indices of US stocks and bonds traded into the model. According to the regression, if $\gamma_0 + \gamma_1 + \gamma_2 \neq 0$ is significant, the effect of terror attacks is permanent. If, in addition, $\gamma_2 > 0$, we can again conclude that the effect of terror attacks is permanent but that it is also characterized by overshooting with subsequent mild corrections.

Table 4 about here

The findings shown in Table 4 indicate that the effect of terror attacks on the stock and government bond markets are permanent (general index of government bonds). The two regressions indicate that it is impossible to accept the hypothesis that $\gamma_0 + \gamma_1 + \gamma_2 = 0$ and that it is also impossible to reject the hypothesis that $\gamma_2 = 0$. The last finding, $\gamma_2 = 0$, indicates that there is no overshooting with subsequent corrections and that the capital market efficiently internalizes the information inherent in the terror attacks.

7. Summary and conclusions

In this article we investigated the influence of "routine" terror attacks on capital markets over time. The study was based on a unique sample containing data on 280 terror events carried out in Israel during 2000–2003 in addition to 58 instances of targeted killings, the latter representing the Israeli government's anti-terrorism policy. The sample allowed us to examine whether the influence of continuous terror attacks can be permanent.

The main findings are: (1) Unlike cases of sporadic terror attacks, such as those in NY (9/01), Madrid (3/04), London (7/05) or even Israel (7/06), share prices declined by an average 0.48% in response to each terror attack, with accumulated damage to firm values of about 30% during the three years of the *Intifada*. This decline was not, however, due to any increase in the risk premium. (2) Share prices were not affected by Israel's anti-terrorism policy (targeted killings) in response to terror attacks; we found that stock prices increased by 0.13% after each targeted killing, executed in the wake of a terror attack, but that the increase was not statistically significant. (3) "Routine" terror attacks caused investors to transfer investments from stocks to more solid channels, such as short-term government bonds; (4) the effect of "routine" terror attacks on capital markets is permanent and "routine" in the sense that we observed neither overreaction to attacks nor corrections on days subsequent to the events.

Our findings appear to imply that the threat of global terror may have significant permanent negative effects on a country's growth and the behavior of their capital markets.

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Table 1
Summary of Terror Attacks

This table describes 460 terror attacks, reclassified as 280 terror events for the period 9/2000–12/2003. Among the 280 events, 47 occurred inside trading hours. The difference between the 460 terror attacks and the 280 events resulted primarily from the fact that multiple attacks, occurring on the same day or during the weekend, were considered as single events. The time periods are divided into two periods, with the first half compared to the second half of each period.

	Number of Terror Attacks	Number of People Killed	Number of People Injured
Total	460	890	4,318
<u>Our Sample – Terror Events</u>	280	837	3,916
9/2000-4/2002	151	442	2433
5/2002-12/2003	129	394	1483
Green line – Inside	110	599	3,609
Outside	170	238	307
Suicide attacks	74	360	915
Other	206	477	3,001
Reported on front page	170	383	1557
Inside pages	39	28	255

Table 2

The Effect of Terror Attacks on Bond Prices

In this Table we present the $CR(-1,1)$ of general (redemption within 0 to 15 years), short-term (redemption within two years) and long-term (redemption from 10 to 15 years) government bonds traded on the TASE. The numbers in parentheses represent the t-test p-values obtained when testing the hypothesis that the average CRs are not significantly different from 0,.

	$CR(-1,1)$ of Bond Indices Surrounding the Day of the Attack/Event		
	General Bond Index (0-15 years)	Short-term Bonds (0-2 years)	Long-term Bonds (10-15 years)
Average	0.041	0.065	-0.012
p-value	(0.060)	(0.000)	(0.750)

Table 3

The Effect of Targeted Killings on the Stock and Bond Markets

This table presents $CR(-1,1)$ (in %) of the TA-25 index, general (redemption within 0 to 15 years), short-term (redemption within 2 years) as well as long-term (redemption within 10 to 15 years) government bonds. Observations pertain to the days surrounding the terror event – during the days on which targeted killings occurred when compared with the days in which no killings occurred. For the comparison, we identified the days on which target killings occurred close to the terror events: a day prior to the attack, on the day of the attack, or on the day after the attack. Numbers in parentheses indicate p-values obtained when testing the hypothesis (ANOVA) that there is a significant difference between the $CR(-1,1)$ averages.

	Long-Term Bonds (10-15 years)	Short-Term Bonds (0-2 years)	General Bond Index (0-15 years)	Stocks
Terror attack with no targeted killings	0.067	0.084	0.071	-0.045
Terror attack with targeted killings	0.007-	0.011	0.005-	-0.032
p-value	(0.191)	(0.013)	(0.007)	(0.347)

Table 4**Do Terror Attacks Exert a Permanent Effect on the Stock and Bond Markets?**

This table shows the results of testing the hypothesis that the effect of terror attacks on stock and bond markets is permanent. The test was performed with the following regression:

$$Y_t = \alpha_0 + \beta_1 R_US_t + \gamma_0 TI_t + \gamma_1 TI_{t-1} + \gamma_2 TI_{t-2} + \gamma_3 Y_{t-1} + \varepsilon_t$$

Where $Y_t = R_TA_t, R_govt_t$ represents stock and bond indices' rates of return ($CR(-I, I)$), respectively; R_US is a fundamental variable (rates of return of US stocks or bond indices, respectively) of the domestic economy that is linked to the international financial markets. TI represents the level of pessimism, an index that receives values ranging from 0 to 5 (Eq. (1)), where 5 indicates the highest level of attack severity. Y_{t-i} represents stock or bond rates of return, respectively, on day $t-i$. According to this regression, $\gamma_0 + \gamma_1 + \gamma_2 \neq 0$ indicates that the terror attack's effect is permanent, and $\gamma_2 > 0$ indicates that the attack's effect is also characterized by overreaction and subsequent corrections. Numbers in the parentheses represent the p-values obtained when testing the hypothesis that the coefficients are insignificantly different from zero.

Regression Coefficients	$CR(-I, I) - \text{Dependent Variable}$	
	Bonds Returns	Stock Returns
α_0	0.00099 (0.002)	0.00488 (0.168)
β_1	0.0043- (0.105)	0.16100 (0.055)
γ_0	0.00021- (0.066)	-0.00247 (0.032)
γ_1	0.00006 (0.949)	-0.00021 (0.840)
γ_2	0.00019- (0.122)	0.00026 (0.807)
Y_{t-1}	1.65277 (0.000)	1.03673 (0.000)
$\gamma_0 + \gamma_1 + \gamma_2$	0.00039- (0.089)	-0.00293 (0.058)
R^2	0.549 (0.000)	0.341 (0.000)