Financial Markets and Terrorism:

The Perspective of the Two Sides of the Conflict

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Abstract

This paper uses a unique data set and advanced econometric methods to examine the effect of terrorism on financial markets of both sides of the barricade in the Israeli-Palestinian conflict. The main finding are: (1) Real economies on both sides suffered significantly during the *intifada* period; (2) On the avarege share prices on the Israeli side declined significantly due to terror attack by 0.43% where the decline on the other side (probably due to fear of retaliation) was much less and insignificant; (3) There is a bi-directional causality effects of returns in the two markets and both markets are affected by the US market; (4) The more fatal the terror attack is, the greater is the negative effect in the two markets. In the more severe terror attack event (i.e. more people were killed and injured or if it was suicide attack), share prices in the Israeli market declined significantly by 0.63% compared to a decline of 0.16% in less severe attacks. The same pattern, but less significant is revealed on the Palestinian side. In the more severe terror attack, share prices declined significantly by 0.21% compared with 0.07% in less severe attacks.

Keywords: Terror attack, Terrorism, Stock markets

JEL classifications: G10; G14

1. Introduction

In recent years a number of studies documented that terror attacks adversely affect the expectations of firms' profitability causing share prices to decline and predicting a slowdown in economic activity. Frey, Luechinger & Stutzer (2007), survey the different ways that terrorism may affect economic activity. Additional works regarding the impact of terror are done by Eldor, Hauser, Melnick & Levi (2009) and Melnick & Eldor (2010). Abadie & Gardeazabal (2003) found that terrorism reduced per capita GDP in the Basque Country by some 10 percent while

Eckstein & Tsiddon (2004) estimated a 5 percent decline in GDP for Israel. Eldor & Melnick (2004) estimated a 30 percent decline in the value of the Israeli stock market. Abadie & Gardeazabal (2008) attribute the possible large economic cost to the diversion of net foreign direct investment in an open economy model. The paper is also related to Chen & Sims (2004) study that analyzed 14 cases of terror- or war-related events that had taken place in the US since 1915. They found 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, we analyze the effect terrorism on financial markets in Israel, where terror attacks are committed "routinely" and are not expected to stop.

Unlike previous research, we use a unique data set of stock markets in the West-Bank and in Israel that allows us to examine the effect of terrorism on the financial markets of both sides of the barricade of the Israeli-Palestinian conflict. We use a sample of 460 terror attacks that took place in Israel during the Intifada period (9/2000-6/2003), to estimate the effects of terror attacks in both economies.

We also use Eldor et. al. (2009) pessimism index (Terror Index - TI) to investigate the effect of these terror attacks had on share prices.

The main contribution of this paper to the literature is to provide both sides of the barricade, the Palestinian and Israeli stocks markets perspective of the impact of terrorism on their markets and its relationship to the economy. This perspective, to the best of our knowledge, has never been investigated before (Eldor et. Al (2009) also investigated the effect of targeted killings of some Palestinians and found that their effect on the Israeli stock market is marginal).

The main finding is that the more fatal the terror attack is, the greater is the negative effect in the two markets. In the more severe terror attack event (i.e. more people were killed and injured or if it was suicide attack), share prices on the TASE declined significantly by 0.63% compared to a decline of 0.16% in less severe attacks. The same pattern is revealed on the Palestinian side. In the more severe terror attack, share prices on the PSE declined significantly by 0.21% compared with -0.07% in less severe attacks.

The paper is organized as follows. In Section 2, we describe Israeli and the Palestinian financial markets along with a comparison of the economies and the stock exchanges of both markets. In Section 3, we describe the data and the methodology. Section 4 reports the results. Section 5 summarizes and concludes the paper.

2. The Two Stock Markets

The Tel Aviv Stock Exchange (TASE) was established on 1953. The market value of the stocks listed on the TASE is in general more than one half of Israel's GDP. The TASE, which is an important market for financial intermediation and an important source of financing for the business sector, is quite sophisticated and includes derivatives such as stock index options (the trading volume of which relative to the underlying assets is the world's highest). The unusually highly developed derivatives sector adds critical liquidity to the market (more on the TASE see Eldor & Melnick2004).

The Palestinian Securities Exchange (PSE) started its operation in 1997 following the Oslo agreement. The PSE was founded following the creation of the Palestinian Authority. One of its key objectives from its inception was to facilitate foreign investment by providing a platform for securities trading, which conformed to international standards and rules for conducting business. The Palestinian Securities Exchange opened its doors in 1997, launching equity trading on eighteen listed companies. The number of listed companies has since grown and as of the end of 2008 came to 37 firms engaged in manufacturing, services, banking, investment and other financial services. It was established as a privately-owned exchange rather than an entity mutually owned by its members. This form of organization enables the exchange to be publicly floated and facilitates strategic partnering or merger with other exchanges. The Palestine Development and Investment Company (PADICO), the largest Palestinian holding company, was the founder and the developer of the PSE and continues to be its main controlling shareholder. Reports of plans to take the PSE public were circulated in 2008. As of the end of 2008, the PSE reported a total market capitalization of approximately US $2.1 billion, a more than four-fold increase since its inception in 1997 (see Palestinian Securities Exchange, Monthly Statistics December 2008, http://www.p-s-e.com/PSEWEBSite/publications/12-%202008.xls) Acquiring software from the Canadian software company, EFA Software Services, trading on the exchange is solely electronic. Transactions are executed by accredited exchange members, which as of the end of 2008 were eight in number. In 2007 the exchange launched e-trading over the Internet as well, primarily to facilitate infrastructure to foreign investors. Average daily volume, which initially was less than $400,000 in 1997, has risen to about $5 million by the end of 2008. Order flow has

grown from approximately 2,000 transactions to 152,000 transactions. Transactions are cleared and settled in-house through the Clearing, Depository and Settlement Center, which acts as a central depository and clearing house. Registration of shares is paperless and the clearing house operates with a T+3 settlements, which conforms to that employed by many major foreign exchanges. The PSE has contracted with the Arab Bank to serve as settlement bank conducting transfer and payments between counterparties. In 1999 the HSBC Bank Middle East was the designated custodian bank, which, rather than the member brokerage firms, holds the securities on behalf of investors.

The representative share price index is entitled the Alquds Index ('Jerusalem' in Arabic). Launched in July 1997, this index, which originally comprised of 10 shares, currently tracks twelve companies drawn from all sectors listed on the exchange. In the eleven years since the PSE's opening, the price volatility has been significant with annual fluctuations more often than not being well into the double digits. By the end of 2008, the Alquads index closed at 441.66, representing a more than four fold increase since its inauguration. However, this upward trajectory has been far from smooth or monotonic. In 2005 the index soared more than 300% (from a level of 278 to 1129). After peaking in 2005, it lost close to 50% the following year (Which also coincides with the rise of Hamas in Gaza) the index gained in 2007-2008 13% and 16% respectively. The extreme price volatility is attributed in large part to the thin trading as well as to the dramatic political and economic events taking place in the Palestinian Authority over the past decade.

Table 1 presents the main differences between the two economies and the two stock markets. As of 1997, the GDP of Israel was 29.7 times the GDP of the West Bank and Gaza Strip (WBGS) and the per capita GDP of Israel is 12.5 times of that in WBGS. In the intifada period (2000-2002) the GDP of Israel went up by 7.8% and the per capita GDP went up by 0.5%, while the GDP of WBGS went down by 27.7% and the per capita GDP went down by 34.0%. During these years, the market Cap at the TASE declined by 35.1%. Annual trading volume decreased by 38.3% and TA-25 index declined by 30.5%. In the PSE, during the years 2000-2002 the market cap decreased by 32.1%, annual trading volume decreased by 70% and the Alquads Index declined by 36.2%.

As noted above, the economies are affected by the political and the security situation over time, and particularly during the *intifada*. In the next section we provide an in depth causality analysis of the impact of terror attacks on the two markets and exchanges.

Table 1. Main Figures of the Two Exchanges and Economies 1997-2008

3. Data and Methodology

3.1 Data

The data include characteristics of 460 terror attacks taking place during the period of the *Intifada* (September 2000 - June 2003). Since we are using an event study analysis, we are forced to compile the data in the following way. Whenever more than one terror attack occurred on the same day, the attacks were considered as a single event. As a result we end up with only 280 terror events. Since we have to exclude terror events occurred on dates when the Palestinian stock Exchange halted its trade for security reasons, we are left with only 168 terror events. We use daily share prices (TA-25 index) and Alquads index on days surrounding each date of the 168 terror events. The data on the characteristics of the terror attacks were obtained from the databank of the Interdisciplinary Center in Herzeliya.

We also use share prices of the TA25, Alquads and SP500 indices to examine the causal relation among them and their volatilities. We use the GARCH (1, 1) model to generate daily standard deviation of rates of returns using the following model:

$$\sigma_t^2 = \beta_0 + \beta_1 \varepsilon_{t-1}^2 + \gamma_1 \sigma_{t-1}^2 \quad (1)$$

Where: $r_t = \alpha_0 + \alpha_1 r_{t-1} + \varepsilon_t$, r_t is the index rate of return. The results displayed in Table 2 provide the model estimates

Table 2. Estimates of the GARCH model for daily standard deviation

Based on the GARCH model estimates and share prices data, Table 3 provide summary statistics of the variables used in this study to test the causal relationships between the two capital markets: Israeli and Palestinian. The US market is used as control variable that is assumed to have possible effects on the two markets. Note that we also used EGARCH models and additional lags in these models. The results for the estimated variance were similar).

Table 3. Descriptive Statistics

3.2 Methodology

To examine share prices behavior in response to terror attacks, we start with an event-study analysis based on daily data (closing prices) of the TA-25 and Alquads indices. Based on the daily data, we estimated rates of return of both indices on the day of the event (-1, 0), and the days following the event (0, +1) and (+1, +2).

First, we investigate the causal relationships among the variables using the commonly testing procedure for causal relationship between variables - the VAR (vector auto-regression) or VEC (vector error-correction) model (Note 1). The latter requires that if the time series in the tests be non-stationary or integrated of order greater than zero. Violation of either one of, or both of, these two conditions would suggest implementation of the VEC model. For this reason, the properties of stationary of each time series used in this study and probable order of integration is first examined.

We start with unit root tests using two models of the Augmented Dickey-Fuller methods (ADF).

(2) Model 1: $y_t = \alpha_1 + \delta_1 y_{t-1} + \varepsilon_t$

(3) Model 2: $y_t = \alpha_2 + \gamma_2 + \delta_2 y_{t-1} + \varepsilon_t$

The ADF test involves decisions on selecting the optimal lag length. The statistical inferences about the stationary properties of each time series are presented in Table 3 using two models and for different lag lengths. The results indicate that the null hypothesis of a unit root is not rejected for the levels of the TA25, Alquds and SP500 and is rejected for the levels of the time series of volatility of each of the three indices. The null hypothesis is also rejected for stock indices time series when they are differenced once. Since the six time series, three stock indices (rates of return), and their volatilities, are stationary, we use the VAR model and not the VEC model.

Table 4. ADF tests for unit root tests

Based on these results, we use the VAR model to test the causal relationships between the Palestinian and Israeli stock markets. The analysis includes share prices behavior of the two markets and their volatilities in addition to the SP500 index and its volatility as control variables. The following model is estimated:

(4)
$$Y_t = a_0 + \sum_{j=1}^{T} b_j TA25_{t-j} + \sum_{j=1}^{T} c_j AlQuds_{t-j} + \sum_{j=1}^{T} d_j SP500_{t-j} +$$
$$\sum_{j=1}^{k} e_j SIGTA25_{t-j} + \sum_{j=1}^{T} f_j SIGALQUDS_{t-j} + \sum_{j=1}^{T} g_j SIGSP\%00_{t-j} + \eta_t$$

Where Y is the dependent variable: TA25 or Alquds, SP500 is US SP500 index, SIGTA25. SIGAlquds and SIGSP500 are daily standard deviations of the three indices estimated by the GARCH (1, 1) model and T=1,..,5 is the number of lags included in the estimation**.**.

The VAR model enables us to investigate the causality effects of different markets on share prices. If Y=TA25 and c_j, d_j, e_j, f_j, g_j are significantly different from zero for some *j*, it would indicate that the independent variable has significant effect on the TA25 variable. If Y=Alquds and b_j, d_j, e_j, f_j, g_j are significantly different from zero for some *j*, it would indicate that the independent variable has significant effect on the Alquds variable.

Next we use Eldor et. al.(2009) Terror index (*TI*) to investigate the effect of investors' pessimism on the stock market. This index was developed in order to obtain a measure of terror attack with the highest correlation between the impacts of the level of the measure the prices in Tel Aviv Stock market.

The Eldor's Terror index Terror *Index* (*TI*) is constructed as follows:

(4) $TI = D_1 + D_2 + D_3 + D_4 + D_5$

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.

4. Results

4.1 Share prices behavior on the TASE and PSE

Figure 1 and Table 5 describe share prices behavior in the Palestinian and Israeli markets during 1997-2007, a period that includes the intifada period 2000-2003. The first observation that comes out of Figure 1 is that share prices soared in both markets but more so in the Palestinian markets. Two years following the intifada, the markets were characterized by economic boom when share prices multiplied themselves, on average, by seven. While during this period share prices increased in Israel too, consistent with most financial markets around the globe, in the midst of 2005, share prices West-Bank (Palestinian-Stock-Exchange (PSE)) fell dramatically from 1300 level to 400 level. In that period share prices in Israel continued to climb as many financial markets around the globe did. The main explanation to this decline in share prices is that at time the Hamas movement took power in Gaza.

Figure 1 – Share prices

Table 5. Share prices in the West-Bank, Israel and US during the *Intifada*

Compared with other periods

Prior to examining the effect of terrorism on both markets, we examined the causality relationship between share prices on the TASE and those on the PSE. We also include in our tests the effect of US market as control variable, represented by the SP500, on both markets. Table VI displays the results.

Table 6. Causality between TA25 and Alquds Share Prices

The main findings regarding returns are: (1) both markets are significantly affected by the US market. However, it appears that the PSE is affected to a lesser extent than that of the TASE. One possible explanation is that Palestinians investors are generally less sensitive to the information from the US markets than the Israeli investors. (2) In both markets there is a significant causality effects. Surprisingly, share prices behavior on the TASE seems to be significantly affected by those on the PSE. This finding may be due to the fact that positive (negative) returns on the PSE are a reflection of positive (negative) economic atmosphere on the West Bank side which is significantly correlated with positive (negative) expectations of the Israeli investors.

The main findings regarding volatility are: (1) only the Israeli market volatility is significantly affected by the US market volatility. It appears that the PSE is not affected by the US market volatility. (2) In both markets there is a significant causality effects in volatility.

4.2 Share prices behavior on the TASE and PSE around terror attacks

This Section focuses in the intifada period (2000-2003). The results are displayed in Table 6 and 7. There was an average significant decrease of 0.43% in share prices on the TASE (-p-value=0.006) and insignificant decline of -0.23% on the PSE (p-value=0.595). It appears that in both markets, investors respond almost immediately when the terror attack occurs. The decline of share prices on the PSE may be explained by the fear of retaliation of the Israeli Defense Forces to the terror attack. The insignificance of that decline that is well exhibited in Table 7, may indicate that in many cases such retaliation was not expected (Note 2).

Table 7. Effect of Terror Attacks on Stock Prices

Finally, we examine the effect of the terror attack severity on share prices in both markets. The findings are displayed in Table 8. The main finding is that the more fatal the terror attack is, the greater is the negative effect in the two markets. In the more severe terror attack event (i.e. more people were killed and injured, if it was suicide attack or if it was within the green-line border), share prices on the TASE declined significantly by 0.63% compared to a decline of 0.16% in less severe attacks. The same pattern is revealed on the Palestinian side. In the more severe terror attack, share prices on the PSE declined significantly by 0.21% compared with -0.07% in less severe attacks. Most likely, this is due to the fact that Palestinians expected a retaliation of the Israeli Defense Forces on days the results of terror event were more fatal.

Table 8. Effect of Attack's Severity on Stock Prices

5. Conclusion

This paper uses a unique data set to examine the effect of terrorism on financial markets of both sides of the barricade in the Israeli-Palestinian conflict. The main finding is that the more "successful" the terror attack is the more the Israeli as well as the Palestinian markets suffer economically. Specifically: real economy suffered during the *intifada* period and share prices declined in both markets. A statistical significant decline of 0.43% on average

following each terror event in the TASE, compared with insignificant decline of 0.23% in PSE. These findings indicate that the effects of terrorism are negative on all markets involved.

An analysis of the links between the Israeli and the Palestinian markets has been carried out. The main finding regarding returns is in both markets there is a significant causality effects. Surprisingly, share prices behavior on the TASE seems to be significantly affected by those on the PSE. This finding may be due to the fact that positive (negative) returns on the PSE are a reflection of positive (negative) economic atmosphere on the West Bank side which is significantly correlated with positive (negative) expectations of the Israeli investors.

The main findings regarding volatility are: (1) only the Israeli market volatility is significantly affected by the US market volatility. It appears that the PSE is not affected by the US market volatility. (2) In both markets there is a significant causality effects between the volatilities of the two markets.

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Notes

Note 1. This analysis is performed by using EVU6.

Note 2. the number of attacks is kept the same in all CR calculations.

Table 1. Main Figures of the Two Exchanges and Economies 1997-2008

	Israel				Palestinian Authority			
	Tel -Aviv stock Market				Palestinian Stock Exchange			
Year	market Cap Billions USD	Annual Trading Volume in billions USD	Annual change of TA-25 Index	GDP 2008 prices (billions USD)	market Cap Billions USD	Annual Trading Volume in billions USD	Annual change of of Alquds Index	GDP 2008 prices (billions USD)
1997	46.4	14.0	26.4%	129.3	0.53	0.03	39.1%	4.36
1998	40.9	14.3	-5.2%	134.8	0.59	0.07	11.4%	4.88
1999	65.4	20.9	62.2%	139.1	0.85	0.15	52.8%	5.31
2000	66.7	28.4	0.3%	151.6	0.77	0.19	-12.3%	4.85
2001	57.1	15.0	-7.9%	151.0	0.72	0.07	-6.1%	4.43
2002	42.3	12.9	-24.8%	150.0	0.58	0.05	-22.5%	3.84
2003	69.7	20.4	58.4%	152.7	0.65	0.06	19.0%	4.41
2004	87.1	37.1	16.2%	160.4	1.10	0.20	54.4%	4.94
2005	112.8	54.0	29.7%	168.6	4.46	2.10	306.6%	5.27
2006	140.8	84.6	5.9%	177.3	2.73	1.07	-46.4%	5.09
2007	198.1	134.2	18.9%	188.2	2.47	0.81	-12.9%	5.34
2008	106.7	128.5	-46.2%	195.7	2.12	1.19	-16.2%	6.02

Source: PSE, PCBS, TASE, ICBS 2009 and annual reports.

Table 2. Estimates of the GARCH model for daily standard deviation

The daily variance is estimated by the following model: $\sigma_t^2 = \beta_0 + \beta_1 \varepsilon_{t-1}^2 + \gamma_1 \sigma_{t-1}^2$ where $r_t = \alpha_0 + \alpha_1 r_{t-1} + \varepsilon_t$. AIC is a Akaike Info Criterion. P-values in parenthesis signify the significance of the coefficients.

	β_0	β_1	γ_1	**AIC**	**Log-Likelihood**
TA25	0.00051	0.1038	0.8120	-5.3622	4295.4
P-Value	(0.000)	(0.000)	(0.000)		
Alquds	0.00109	0.1368	0.8497	-5.0584	4052.2
P-Value	(0.000)	(0.000)	(0.000)		
SP500	0.00006	0.1057	0.8953	-5.7840	4633.1
P-Value	(0.000)	(0.000)	(0.000)		

Table 3. Descriptive Statistics

RTA25, RAlquds and RSP500 are the rates of returns of the TA25, Alquds and SP500 stock indices. SIGTA25. SIGAlqudsand SP500 are daily standard deviations of the three indices estimated by the GARCH (1, 1) model.

	RTA25	RAlquds	RSP500	SIGTA25	SIGAlquds	SIGSP500
Mean	0.000446	0.000960	-0.000125	0.017697	0.021092	0.014947
Median	0.000471	-0.000099	0.000564	0.015542	0.018291	0.012603
Maximum	0.084159	0.124893	0.102457	0.057356	0.074790	0.061587
Minimum	-0.155385	-0.172717	-0.134612	0.008484	0.008931	0.006108
Std. Dev.	0.018473	0.022565	0.016785	0.007338	0.009863	0.008170
Skewness	-0.766864	-0.224207	-0.970259	1.581866	1.238238	2.228186
Kurtosis	10.094570	9.111859	12.001910	6.164792	4.656447	9.703967
Jarque-Bera	3514.55	2505.29	5656.87	1335.84	592.15	4322.86
Probability	0.000	0.000	0.000	0.000	0.000	0.000

Table 4. ADF tests for unit root tests

The table reports the ADF tests for 2 models. Model 1: $y_t = \alpha_1 + \delta_1 y_{t-1} + \varepsilon_t$; Model 2: $y_t = \alpha_2 + \gamma_2 + \delta_2 y_{t-1} + \varepsilon_t$. Mackinnon p-values appear in parenthesis. We use log of the stock indices. Rates of returns are obtained by differencing them once. The models are tested for 3, 5 and 7 days lag length.

	Model 1			**Model 2**		
Variable	3	5	7	3	5	7
Level						
Ln(ta25)	-1.622	-1.662	-1.739	-0.928	-0.919	-1.020
	(0.477)	(0.450)	(0.411)	(0.951)	(0.952)	(0.939)
Ln(Alquds)	-1.208	-1.249	-1.289	-1.619	-1.666	-1.769
	(0.908)	(0.899)	(0.865)	(0.432)	(0.449)	(0.396)
Ln(sp500)	-1.239	-1.340	-1.289	-0.792	-0.871	-0.791
	(0.654)	(0.613)	(0.637)	(0.965)	(0.957)	(0.964)
σ_{TA25}	-4.567	-4.441	-4.433	-4.877	-4.700	-4.708
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
σ_{Alauds}	5.203	-4.595	-5.627	-5.239	-4.631	-5.729
	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.001)
σ_{SP500}	-18.289	-15.927	-13.498	-18.395	-16.067	-13.659
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
1st Difference						
Ln(ta25)	-19.964	-15.819	-13.082	-20.011	-15.881	-13.157
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Ln(Alquds)	-18.602	-14.536	-11.840	-18/640	-14.606	-11.898
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Ln(sp500)	-18.289	-15.927	-13.498	-18.395	-16.067	-13.659
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Table 5. Share prices in the West-Bank, Israel and US during the Intifada Compared with other periods

This table presents figures on annual rates of return (CR) on stocks represented by the TA25, SP500 and Alquds indices for different periods, where: $CR = (P_t / P_{t-n})^{\frac{n}{365}}$ and n indicates the number of trading days in the period in which CR

Period		Alquds	TA25	SP500
The whole period: 7/1997-12/2008		0.171	0.139	0.046
Prior to the *Intifada*:	7/1997-9/2000	0.345	0.202	0.149
Intifada: 10/2000-6/2003		-0.093	-0.086	0.017
Following the *Intifada*:	7/2003-12/2007	0.244	0.253	0.096

Table 6. Causality between TA25 and Alquds Share Prices

This table displays the results of tests on the relationship between share prices in the West-Bank, Israel and US, using the following Vector Auto Regression model (VAR):

$$Y_t = a_0 + \sum_{j=1}^{T} b_j TA25_{t-j} + \sum_{j=1}^{T} c_j AlQuds_{t-j} + \sum_{j=1}^{T} d_j SP500_{t-j} +$$

$$\sum_{j=1}^{k} e_j SIGTA25_{t-j} + \sum_{j=1}^{T} f_j SIGALQUDS_{t-j} + \sum_{j=1}^{T} g_j SIGSP\%00_{t-j} + \eta_t$$

Where Y is the dependent variable: TA25 or Alquds, SP500 is US SP500 index, SIGTA25. SIGAlquds and SP500 are daily standard deviations of the three indices estimated by the GARCH(1,1) model. "*", "**" and "***" signify that the coefficient is significant at the 1%, 5% and 10% level, respectively. T=1,..,5 is the number of lags included in the estimation**.**

		Dependent Variable			
Coefficient		TA25	SIGTA25	Alquds	SIGAlquds
	a_0	0.000897	0.000609*	0.000321*	0.000794*
TA25	b_1	-0.036872*	-0.009223*	-0.007964	-0.009959*
TA25	b_2	-0.018975	0.000775	0.032178	-0.003186
TA25	b_3	-0.025435	-0.003952	-0.066157***	-0.003456
TA25	b_4	-0.031831	-0.001315	-0.00672	0.004135
TA25	b_5	0.009006	-0.004716**	0.016611	0.002368

Alquds	c_1	0.062176*	-0.002174	0.163826*	0.001218*
Alquds	c_2	-0.030394***	0.001447	-0.01568	0.004708
Alquds	c_3	0.042865**	-0.000513	0.020022	0.003278
Alquds	c_4	-0.009289	0.004433***	0.010321	0.004265
Alquds	c_5	-0.043301**	0.000609	0.026273	-0.001411
SP500	d_1	0.465451*	-0.029472*	0.083388**	-0.014577
SP500	d_2	0.130577*	-0.001714	0.047450	-0.002115
SP500	d_3	0.067412**	-0.006944**	0.069726**	0.004452
SP500	d_4	0.100819*	-0.002943	0.042056	0.004796
SP500	d_5	0.041705	-0.004053	-0.017646	-0.00144
SIGTA25	e_1	0.436250*	0.915004*	0.246334	-0.010548*
SIGTA25	e_2	-0.24867	0.003933	-0.251071	0.030750
SIGTA25	e_3	-0.174319	0.052792	-0.324227	-0.011641
SIGTA25	e_4	-0.03354	-0.035054	-0.2253	0.048881
SIGTA25	e_5	0.187348	0.020671	0.578643***	-0.034091
SIGAlquds	f_1	-0.179644	-0.010059	0.033254	0.961265*
SIGAlquds	f_2	0.120898	-0.007706	0.048681	-0.044579
SIGAlquds	f_3	0.125202	0.003988	-0.039594	-0.01541
SIGAlquds	f_4	0.037212	0.018408	0.022262	0.042382
SIGAlquds	f_5	-0.139200	-0.006239	-0.02472	0.017894
SIGSP500	g_1	0.119648	-0.039617	0.362930	0.001058
SIGSP500	g_2	-0.414259	0.041804	0.020297	0.011398
SIGSP500	g_3	0.012226	-0.014957	0.368758	0.037254**
SIGSP500	g_4	-0.291416	0.046978	-0.299627	-0.119723
SIGSP500	g_5	0.405237	-0.02157	-0.502428	0.042406
R-squared		0.216759	0.938452	0.048081	0.925006
Adj. R-squared		0.201735	0.937271	0.029822	0.923567
F-statistic		14.42767	794.9005	2.633221	643.0305
Log likelihood		4304.063	7798.031	3851.666	7176.476
Akaike AIC		-5.358072	-9.739224	-4.790804	-8.959844
Schwarz SC		-5.253613	-9.634764	-4.686344	-8.855385

Table 7. Effect of Terror Attacks on Stock Prices

CR(-1,2) signifies cumulative rates of return on the 3 days – day of the attack *CR(-1,0)+CR(0,+1)+CR(+1,+2)*. CR(-1,0) is the day of the attack, CR(0,+1) and CR (+1,+2) are the two days following the attack. Numbers in parenthesis are p-values. Results are related to the whole period including the intifada period

Returns	**TA-25**	**Al-Quds**
CR(-1,0)	-0.203	-0.123
(p-value)	(0.039)	(0.188)
CR(0,1)	-0.147	-0.077
(p-value)	(0.074)	(0.575)
CR(1,2)	-0.082	-0.013
(p-value)	(0.376)	(0.952)
CR(-1,2)	-0.431	-0.230
(p-value)	(0.006)	(0.595)

Table 8. Effect of Attack's Severity on Stock Prices

CR(-1,1) signifies cumulative rates of return on the 2 days – day of the attack CR(-1,0)+CR(0,+1). P-values signify the significance level using ANOVA. In this Table, *TI* receives a value 1 if its score is higher then 3 and 0 otherwise. Results are related to the whole period including the intifada period

		TA25		**Alquds**	
		N	Average (%)	N	Average (%)
Terror Index (*TI*)	High	163	-0.627	92	-0.208
	Low	117	-0.159	76	0.068
	p-value		(0.065)		(0.375)

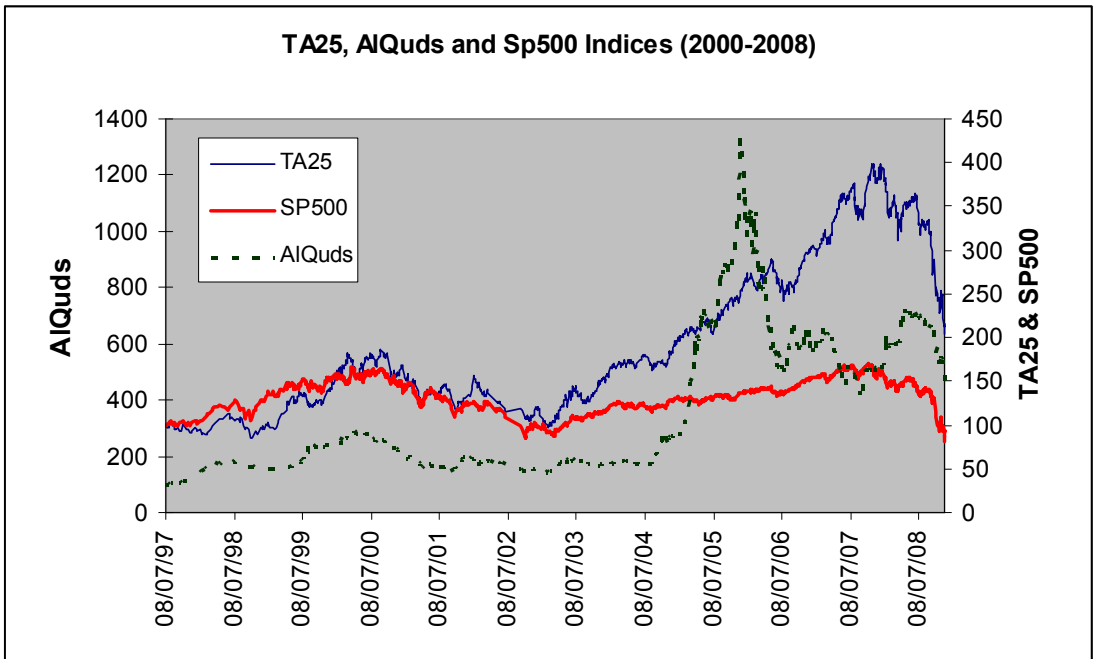

Figure 1. Share prices