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TERRORISM AND CAPITAL MARKETS: THE EFFECTS OF THE ISTANBUL BOMBINGS

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Abstract: Beyond the loss of life and personal injuries that the victims of terrorist actions suffer and the atmosphere of fear terrorists seek to create with their premeditated use of brutal violence, terror also has real economic and political costs that go beyond the immediate costs and damages of a terrorist attack. Terrorist actions can have a multitude of economic consequences that may adversely affect a number of economic indices, sectors and activities including their impact on capital markets. This paper sets out to examine the effect of these attacks on the Turkish Stock Market. It focuses its empirical investigation on the Istanbul stock-market and the impact that recent major terrorist incidents exerted on market behaviour. Findings reported herein indicate in some cases significant abnormal returns

JEL Classification: G14, G21, C22

Key Words: terrorism, capital markets, conditional volatility

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Introduction – Turkey in the new era

Turkey is one of the few exceptions in the Middle East of a country that is undergoing such a rapid globalization in all fields, even compared to other countries' progress of which their "europeanness" was never disputed. That procedure placed her into one of the countries of the global capitalist system. The role Turkey acquired as a mediator between the "East" and the "West" indicates that "the perspective of new regionalism better reflects the actual regionalist projects in the contemporary era" and that, "since it puts the emphasis on the conceptualization of new regionalism as a means of riding on economic globalization, it often overlooks the aspect of globalization as *facilitator* of the new regionalism".¹ This is true for Turkey, especially considering her increased integration into the world capitalist system through the neoliberal reforms in the 1980s under Turgut Özal.² In addition, the leading role in international institutions, such as the International Monetary Fund (IMF), the World Bank and World Trade Organization (WTO) helped tremendously towards that direction.

Despite the economic progress however, it is often argued that it is the countries of the semi-periphery³ and not the centre that are hit by terrorist attacks, although the 9/11 attacks in the US, as well as the 7/7 attacks in London, should make us skeptical about the validity of such a conclusion.⁴ This is true for Turkey of which the leading regional role in the Middle East put her on the target list of international terrorism. Some of them, Turkey being just one of them, indicate that they are on this list for quite some time,⁵

¹ Two major dynamics explain the Turkish state's pursuance of new regionalist projects: 1) the end of the cold war and the collapse of the Soviet system and 2) neoliberal economic globalization. Nilgun Onder, "The Turkish Project of Globalization and the New Regionalism", *Alternatives: Turkish Journal of International Relations*, vol. 7, No 2& 3, Summer and Fall 2008, pp. 87-88; emphasis on the original

² For the Turgut Özal economic program see among others Feride Acar, "Turgut Özal: Pious Agent of Liberal Transformation", in Metin Heper and Sabri Sayarı (eds.), *Political Leaders and Democracy in Turkey*, Lexington Books, Lanham, Maryland, 2002, pp.163-180; Ziya Öniş, *State and Market: The Political Economy of Turkey in Comparative Perspective*, Boğaziçi University Press, Istanbul, 1998 and Ziya Öniş, "The Political Economy of Turkey in the 1980s: The Anatomy of Unorthodox Liberalism", pp. in Metin Heper (ed.), *The Strong State and Economic Interest Groups. The Post-1980 Turkish Experience*, Walter de Gruyter, New York and London, 1991

³ Ali Ozdogan, «Where do Terrorists Come From?», pp. 21-42 in Robert W. Orttung and Andrey Makarychev (eds.), *National Counter-Terrorism Strategies. Legal, Institutional, and Public Policy Dimensions in the US, UK, France, Turkey and Russia*, IOS Press in cooperation with NATO Public Diplomacy Division, The Netherlands, 2006

⁴ If we accept that the "sources of terrorism are manifold, any society or polity that permits opportunities for terrorism is vulnerable"; Martha Crenshaw, "The Causes of Terrorism", *Comparative Politics*, vol. 13, no. 4, July 1981, pp. 379-399, here p. 396

⁵ Despite the often biased and at some times exaggerating conclusions Andrew Mango, *Turkey and the War on Terror. For Forty Years We Fought Alone*, Routledge, London and New York, 2005 indicates that Turkey was on that list since the beginning of the 1970s.

mainly because of its choice to ally with the western hegemonic powers since the 1950s and most notably the United States of America, following the westernizing/modernizing paradigm instigated by the founder of Turkey, Mustafa Kemal (Atatürk).

The formula centre – periphery – semi-periphery formulated by the dependency and world system scholars is quite revealing in that respect. As the formula reveals the world is divided into three categories: core, periphery and semi-periphery. According to that theory the world is a unified social and economic system dominated by the core countries, i.e. the developed ones, while the countries of the periphery, i.e. the underdeveloped ones, are used by the former to establish industry where labor and raw material are cheaper than they should be. However, the new social, political and economic relations produced by the industrialization and urbanization of the new world-system order are characterized by less social cohesion that promote inequalities against the core countries, while at the same time pathological/complex conditions, as Fanon argued,⁶ are produced in the underdeveloped countries.⁷ Furthermore, as it becomes obvious the political and economic order is more likely to be disordered, because of the vulnerability of the new status, while, adding to that, shaky ‘democratic’ institutions, or the lack of, or little, democracy leads to political violence, and in extent, it can be argued to terrorism.⁸

Semi-periphery states fall into this scheme as a buffer zone, between the core and the periphery. These states prevent direct confrontation and conflict of the states mentioned. Turkey is one of the semi-periphery countries that are striving to prevent direct conflict between the two. Thus, schematically and rather simplistically, we could use the example of the triangle, U.S.-Turkey-Iraq.⁹ The U.S., being the core country, attempted to make use of the military bases of a semi-periphery country, i.e. Turkey, to

⁶ Franz Fanon, *Black Skin White Masks*, Grove Press, revised edition, 2008; Similar lines following Fanon’s paradigm can be drawn replacing colonialism with globalization and its effect upon underdeveloped countries that wish to imitate other countries’ globalization process, in order to appropriate and imitate the cultural, political and economic code of the ‘globalizer’ (colonizer).

⁷ Immanuel Wallerstein, “The Rise and Future Demise of World Capitalist System”, pp. 192-201 in Immanuel Wallerstein, *The End of the World As We Know It: Social Science for the Twenty-First Century*; For the Turkish case see the exemplary article by Şerif Mardin, “Center-Periphery: A Key to Turkish Politics?”, *Daedalus*, no. 102, Winter 1973, pp. 169-190

⁸ For the lack of democracy or little democracy as a factor towards political violence/terrorism see Donatella Della Porta, *Social Movements, Political Violence and the State: A Comparative Analysis of Italy and Germany*, Cambridge University Press, New York, 1995 and Sidney Tarrow, *Power in Movement: Collective Action, Social Movements and Politics*, Cambridge University Press, New York, 1994; for different perspective, that of too much democracy leads to political violence/terrorism see Samuel P. Huntington, *Political Order in Changing Societies*, Yale University Press, New Haven, 1968

⁹ The present example was also used by Ali Ozdogan, *ibid*

attack a periphery country, i.e. Iraq. This rather simple, but quite explanatory example may help us understand how the world-system works. However, in that scheme it should be noted the difficult position the semi-periphery country can be. If that country, in our case Turkey, fails to act as a 'preventer' of direct conflict and allow the usage of her military bases it will face the increased likelihood of being a target of future terrorist attacks by the periphery countries, while if she does not allow it she will face most probably heavy economic consequences by the core countries.

The terrorist attacks understudied should be seen through that prism rather the one that very often looked through and was propagated by academics such as Bernard Lewis¹⁰ and Samuel P. Huntington.¹¹ Their approach is that in fact, religious extremism, and in extent religious terrorism, replaced ideology, and to be precise communism, with a cultural and religious divide. This view has been subjected to intense criticism by a number of scholars, but its influence is still dominant among scholars and, with much more obvious catastrophic effects, in the media. The danger of this approach is "to overlook the fact that militant jihad movements and terrorism are not just the products of warped individuals or religious doctrine, whether mainstream or extremist interpretations, but of political and economic conditions".¹² It seems however, that the U.S., especially after 9/11 terrorist attacks is inclined to impose its policy upon the world based on that false theory, and moreover, make the world to believe that such a theory does have a basis. However, what the U.S. managed to do is to actually split the world into two zones, the war zone and the peace zone,¹³ by replacing the old Cold-war enemy, communism, with another constructed 'enemy', Islam/religious fundamentalism, in order to legitimize her own agenda, or actions. As it was presented by the US themselves that was the "democratization" of the Middle East,¹⁴ according to the western values, as if Islam comes in direct contravention with modernism.

¹⁰ Bernard Lewis, "The Roots of Muslim Rage", *The Atlantic Monthly*, September 1990

¹¹ Samuel P. Huntington, "The Clash of Civilizations?", *Foreign Affairs*, Summer 1993

¹² John Esposito, *Unholy War. Terror in the Name of Islam*, Oxford University Press, New York, 2002, p. 152

¹³ This division of the world after 9/11 is owed to Bulent Aras & Şule Toktaş, "Al-Qaida, 'War on Terror' and Turkey", *Third World Quarterly*, Vol. 28, No. 5, 2007, pp. 1033 – 1050

¹⁴ See the interesting article by Holger Albrecht and Oliver Schlumberger, "Waiting for Godot: Regime Change without Democratization in the Middle East", *International Political Science Review/Revue Internationale de science politique*, vol. 25, No 4, October 2004, pp. 371-392 where it is argued that "authors" mistakenly "examine what did not exist, instead of what was actually going on in the Arab world". The fact that democracy is a daily plebiscite, to paraphrase slightly Renan, and nothing indicates that such a process occurred in the Middle East during the last decade (not that it is impossible) should shift our attention not to the 'failure' of democratization, but rather to the 'success' of authoritarianism.

The Istanbul Attacks: Who, Where, and How?

Despite the fact that an appropriate conceptualization of terrorism would save us from talking abstractly, or rather too broadly, incorporating and excluding most of the times factors that are mandatory to terrorist analysis, scholars disagree, as it is the common with all *-isms*. Similarly, we will choose a rather broad description of terrorism, being that *the use, or the threat of violence in order to make known the motives and political goals of the group(s) that use violence, and hence, to fulfill those motives and goals forcing the targeted countries to comply with their demands*. Additionally, our description is referring *only* to non-state actors,¹⁵ and therefore, cannot claim any further validity besides the one referred to.

We will limit our case on the Istanbul terrorist attacks during the past decade, and specifically, on those of 1999, 2003, and 2008. Of these three, the one in 2003 is considered as the most horrific from the point of view of, both, human casualties, being of course the most important in such occasions, and material damages, let alone the distress and psychological suffering caused to the people.

On 13 March 1999, a terrorist attack took place in the *Mavi Çarşı* shopping mall in a suburb called Göztepe in the Asian side of Istanbul. The six-story building, where the shopping mall was lodged, was occupied by a woman and four men carrying guns according to eyewitnesses.¹⁶ The people were forced to move to the upper floors of the building, while the attackers poured petrol in the entrance of the building right before they left at 16.30h local time, when they threw two Molotov cocktails that set the building ablaze. The attack left 13 people dead, 3 burned alive while 10 died from the heavy fumes and 23 people were injured.¹⁷ The following day another terrorist attempt took place at the Burger King in the Istanbul region Avcılar, but the bomb was luckily diffused with success.¹⁸

¹⁵ For example the totalitarian and authoritarian regimes of Stalin's Soviet Union, Hitler's Germany, Mussolini's Italy and Ataturk's Turkey, to name just a few, where terrorism was monopolized by the rulers themselves are examples of state-actors terrorism.

¹⁶ *Cumhuriyet*, "Terör Dehşeti", 14 March 1999, p. 1

¹⁷ Numbers were taken by Ulkumen Rodoplu, Jeffrey Arnold, Gurkan Ersoy, "Terrorism in Turkey: Implications for Emergency Management", *Prehospital and Disaster Medicine*, 2003, vol. 18, no. 2, pp. 152–160; The Istanbul Governor, Erol Çakır declared that "the high rate of casualties is owed to the lack of fire escapes" and wondered "who gave permission to the building to be opened?", *Cumhuriyet*, *ibid*; *Hürriyet*, 14 March 1999

¹⁸ All papers, 15/3/1999 [*Cumhuriyet*, *Hürriyet*, *Milliyet* and *Radikal*]

Despite the economic consequences of the attacks,¹⁹ the attacks had also political implications. The attacks were associated with the *Kurdistan Workers' Party (Partiya Karkerên Kurdistan, PKK)*, despite the fact that no-one has claimed responsibility for the attacks. The Turkish media rushed to accuse PKK,²⁰ saying that the group was taking revenge for the arrest of its leader, Abdullah Öcalan,²¹ who was arrested a month ago in Kenya. PKK's actual involvement is, as it seems, of little importance, since the 'verdict' had already been made, especially after its link with two other extremist groups was established.²² Prime Minister Bülent Ecevit expressed the feeling that "they [terrorists] are trying to cause panic during an election period",²³ which was set for April of the same year. Indeed, the bombings caused disorder to the political life of Turkey, which almost resulted to the postponement of the eminent elections.²⁴ The attacks also caused the ban of pro-Kurdish Med TV broadcasting from England and Belgium for spreading inflammatory statements encouraging acts of violence in Turkey and elsewhere

The Turkish counter-terrorist extensive measures, already started after the Öcalan's arrest,²⁵ were increased and they seem to be legitimized after the 9/11 attacks, finding in the U.S. an ally to their new war on terrorism.²⁶ However, even these measures, not even the emergence of AKP (*Adalet ve Kalkınma Partisi*), a moderate Islamist pro-European party, could not take Turkey off the terrorist list.

¹⁹ The attacks left a building in ruins while it had serious short and long-term consequences on the economy of the country. Shopping malls, such as Akmerkez, Capitol, Carousel, Galeria in Istanbul emptied after the attacks, as the people obviously scared from the attacks started to abstain from closed areas being difficult to escape in case of emergency, while, the tourism decreased substantially, especially after the statements of the Austrian and Belgian foreign ministers who declared Turkey a "risky country". *Cumhuriyet*, 17/03/1999

²⁰ Even the more liberal newspaper *Radikal* left hints that PKK was behind the attacks, *Radikal*, "PKK tarzı katliam" (Massacre PKK-style), 14/3/1999

²¹ *BBC*, "Istanbul hit by Another Bomb", 14 March 1999

[<http://news.bbc.co.uk/2/hi/europe/296384.stm>, retrieved at 21/10/2009]

²² The two other groups are the Revolutionary People's Liberation Party/Front (DHKP/C), coming from Dev-Sol, a leftist guerrilla group of the 1970s (Revolutionary Left), and the Turkish Workers and Peasants Liberation Army (TIKKO). Both of them are associated with PKK.

²³ *BBC*, *ibid*; Ecevit added that "the Turkish people would safeguard their democracy", a statement indicating that his party, *Democratic Left Party (Demokratik Sol Parti - DSP)* prefers loyal (*sadakatlı*) instead of qualified (*liyakatlı*) people around it. Suat Kınıklıoğlu, "The Democratic Left Party: Kapıkulu Politics *Par Excellence*", pp. 4-24, here p. 5 in Barry Rubin and Metin Heper (eds.), *Political Parties in Turkey*, Routledge, 2002

²⁴ All papers, 24/3/1999

²⁵ See the news reports the days following the attacks

²⁶ During the 1990s, Turkey lacked any support by the U.S., and was even criticized when civilians lost their lives during the military operations. However, after 9/11 the U.S. seems to seek for new allies on their "war on terrorism" and Turkey provides a good ally.

The hits in 2003 were the more devastating in the recent Turkish history. They took place with a five-day interval between them. The first ones, aimed at the Jewish synagogues *Bet Israel*, in Şişli, and *Neve Shalom*, in the Galata district, on November 15, when two cars carrying bombs crashed into the synagogues almost simultaneously. Five days later, 20 November, two more trucks exploded. This time the target was the British Consulate, in Galata region and the HSBC Bank, located at the Levent region.

A radical Turkish group, called *Great Eastern Islamic Raiders' Front* (*İslami Büyükdoğu Akıncılar Cephesi – İBDA/C*) claimed the responsibility of the attack,²⁷ while there is substantial evidence that this group is closely affiliated with Al-Qaida.²⁸ The Turkish authorities after investigating the issue claimed that the decision to bomb targets in Turkey had been taken in Afghanistan.²⁹ The attacks that were named “the Turkish 9/11”³⁰ were so powerful that smashed the 1.5 tone door of the Consulate while a huge cloud of smoke covered the whole centre of the city, and cost the lives of 60 people, including the British consul general Roger Short, while more than 750 were injured.³¹

Within the binary opposition, namely the peace zone and the war zone, we referred to before, both of the attacks make sense. The attacks aimed at hitting neocolonialism, or the hegemony of the capitalist core and its allies. However, there is an added importance to these attacks since, al-Qaida, as well as other radical Islamist groups, Turkish or other, consider Turkey's history as a deviation from the right path of Islam. Al-Qaida is a worrying issue for Turkey since, according to Osama bin-Laden “the failure and dissolution of the Ottoman Empire represented the ultimate humiliation of Islamic civilization”.³² Moreover, Turkey's relations with the US, on military and political level, as well as Israel's recognition, signing security agreements, and joint military tasks, put Turkey in the hotspot of international terrorism. It is however, difficult to be sure how these Turkish radical Islamist cells came

²⁷ Mehmet Faraç, “Direksiyonda Kim Vardı”, *Cumhuriyet*, 16/11/2003, p. 9; Ely Karmon, “The Bombing of Synagogues in Istanbul: An al-Qaida Operation or a Revival of Turkish Islamist Terrorism?”, 15/11/2003 at <http://www.ict.org.il/articles/articledet.cfm?articleid=502>

²⁸ For the background of İBDA/C and the close relations with Al-Qaida see Andrew Mango, *ibid*, pp. 66-69 and Ely Karmon, *ibid*; the two synagogue bombers had been trained in al-Qaida camps in Afghanistan and Pakistan. Two other radical Islamist groups are the Turkish Hizballah which has no organic tie with the Lebanon's Hizballah and the *Union of Islamic Communities and Societies* (UICS), which ‘seems the best Turkish candidate to join the Al-Qaida network’. Ely Karmon, *ibid*

²⁹ Andrew Mango, *ibid*, p. 68; the newspaper *Hurriyet*, 3/12/2003 in an article is referring to the amounts paid to Habib Aktas, the brains behind the bombings, US\$ 50,000, while Azad Ekinci, the presumed ‘planner’ of the bombings was paid US\$ 100,000.

³⁰ *Cumhuriyet*, 17/11/2003, p. 8

³¹ Numbers taken by K. Taviloğlu et. al, “2003 terrorist bombings in Istanbul”, *International Journal of Disaster Medicine*. 2005; 1-4: 45-49; Bulent Aras & Şule Toktaş, *ibid*, refer to 62 while Mango, *ibid*, p. 68 is referring to 65 people dead (including the four suicide bombers).

³² Bulent Aras & Şule Toktaş, *ibid*, p. 1040

in contact with al-Qaida and prepared the attacks. Al-Qaida is “transnational in its identity and recruitment and global in its ideology, strategy, targets, network of organizations and economic transactions”,³³ a fact that makes it even more difficult to calculate a probable future attack, as well as the extent of its communication network and its relations with various individuals or groups in other countries. Hence, the breaking down of any democratic freedom, as it was implied,³⁴ in order to bring significant results against terrorism is highly unlikely.

After a relevant calm period Istanbul was struck again by another attack, this time in the Güngören neighborhood in the European bank of the city, on 27 July 2008. The terrorist attacks were not a suicide attack because as it seems they were triggered by a remote device. The attackers placed first a bomb in a trash can, causing a minor explosion, to attract onlookers to the scene, while a second bomb was triggered ten minutes later using RDX, an explosive element widely used in military and industrial applications, that cost the lives of 17 people and the injury of to more than 150.

The attacks in Güngören resembled previous attacks by PKK. The explosive element, RDX, was identified as an explosive that was used before in PKK attacks, as the hit at residential areas bore the mark of PKK and in addition, it was believed that the allegedly PKK hit was a retaliation for the 12 Kurdish targets that were hit in Northern Iraq by Turkish jets. While the Turkish authorities were striving to confirm their suspicions about PKK, PKK leader Zubeyir Ayda denied any involvement in the deadly bombings.³⁵ However, what complicates the situation more is the Germany’s Federal Intelligence Service statement (BND). According to BND Chief Ernst Uhrlau, the attack in Güngören was the work of either al-Qaeda or Turkey’s “deep state”.

Despite the obvious fact that the statement could be used as to avoid any friction to the AKP rule, since Turkey’s accession to the EU seems to be being obtained at a steady pace, it also raises suspicions. AKP already in power for the second time since 2007, is considered, in general, to be trying to democratize and Europeanize Turkey more. Thus, it started working on a new more democratic constitution in June 2007, and was presented in September 2007. However, it faced strong opposition by the secular circles

³³ John Esposito, *ibid*, p. 151; Bulent Aras & Şule Toktaş, *ibid*, p. 1037

³⁴ “[...], it was the failure of the security authorities to keep track of young people who exercised their legal right to travel abroad – and went to Afghanistan and Pakistan to receive training as terrorists – that opened the way to the murderous bombings in Istanbul in November 2003”, Mango, *ibid*, p. 30

³⁵ *Today’s Zaman*, “PKK rejects Güngören link, points to German intelligence”, 5/8/2008, [<http://www.todayszaman.com/tz-web/detaylar.do?load=detay&link=149430&bolum=100>]; BBC, “Istanbul rocked by twin bombings”, 28/7/2008 [<http://news.bbc.co.uk/2/hi/europe/7527977.stm>]

because of AKP's alleged "hidden intentions".³⁶ The traditional secular elite and the military, the bastions of the Turkish democracy, started, in spring 2007, to create "political maneuverings of dubious legal validity in order to "save the last citadel of the secular republic from the occupation of an alleged "Islamist".³⁷ Secularism, as it was evolved in the Turkish context provides the essence of the "state ideology", and AKP's rule is seen as the erosion of that ideology.

Added to that, AKP launched a case against Ergenekon, an ultra-nationalist organization, having links with military and security forces and was accused of terrorism. It is beyond the scope of our purpose to refer to AKP's measures against Ergenekon, but it is suffice to say that since the establishment of the Turkish Republic, the military was preserving the integrity, unity and modernity of the country, and by the 1990s its political autonomy reached its apogee and managed "to go above and beyond the constitutional authority of democratically elected governments, [and] can also include not only direct but also indirect influences on the government".³⁸

THE IMPACT ON ISTANBUL STOCK EXCHANGE

Severe political events such as wars and unexpected terrorist attacks have an impact on stock markets and affect asset prices. The economic effects of terrorism and in particular the impact it has on markets has attracted a considerable and growing body of literature.³⁹ Building on these studies, at this point the paper examines the impact three major terrorist attacks in Turkey had on the Istanbul Stock Exchange.

Istanbul Stock Exchange has a market capitalization of \$118bn in 2008 and 317 listed companies. For the purposes of the analysis that follows, daily prices of the Istanbul Stock Exchange (ISE) are used. Six major indices are

³⁶ Ergun Özbudun and Ömer Faruk Gençkaya, *Democratization and the Politics of Constitution-Making in Turkey*, Central European University Press, Budapest-New York, 2009, p. 105

³⁷ *ibid*, p. 97

³⁸ Umit Cizre Sakallıoğlu, "The Anatomy of the Turkish Military's Political Autonomy", *Comparative Politics*, vol. 29, no. 2, January 1997, pp. 151-166, here p. 153

³⁹ Bruck, T. (2007). *The Economic Analysis of Terror*. Editor Routledge.

Bruck, T. (2005). An economic analysis of security policies. *Defence and Peace Economics* 16(1), 375-389.

Bruck, T., & Wickstrom, B-A. (2004). The economic consequences of terror: guest editors' introduction. *European Journal of Political Economy* 20, 292-300.

Chen, A. and Siems, T. (2004) The effects on terrorism on global capital markets. *European Journal of Political Economy* 20, 435-446.

Drakos, K. (2004). Terrorism-induced structural shifts in financial risk: airline stocks in the aftermath of the September 11th terror attacks. *European Journal of Political Economy* 20, 349-366.

selected as the most representative sample, the National-100, Bank Index, Industrial Index, Services Index, Tourism Index and the Trade Index. All of them are drawn from the *Reuters DataStream database*. The sample covers the period from January 1997 to December 2009 and includes 3391 trading days (Graph 1). The dates of interest for the purposes of the paper are 14/03/1999, 20/11/2003 and 27/07/2008 when the three selected attacks in Turkey took place.

<Graph 1>

To start with, by applying an event study methodology we try to investigate the impact of the events on the above indices. We attempt to identify differences in the persistence and magnitude of these effects across these indices taking into account the global financial environment and the USD/TL.

Event Study Methodology

By using an asset pricing model - market model according to McKinlay 1997⁴⁰ - in an international framework, the daily return of the Dow Jones index (R_t^{US}) is used, for capturing the effect from the worldwide financial interactions. In the presence of exchange risk, the daily rate of change of the US dollar versus the Turkish Lira currency (FX_t) is added in order to reflect the covariance of the asset with the US dollar exchange rate.

$$R_t = a + bR_t^{US} + \gamma FX_t + e_t \quad (1)$$

Then we estimate the parameters of the regression equation (1), using 3191 trading days from February 1997 to December 1999. Based on equation (1), the expected index return should be as follows:

$$E(R_t) = a + bE(R_t^{US}) + \gamma E(FX_t) \quad (2)$$

Daily excess returns were measured by the difference of the actual return minus the expected return.

$$AR_t = R_t - E(R_t) \quad (3)$$

Initially, the event-day abnormal returns are calculated. The date of the event is set at $t=0$, and two longer event windows are examined by computing the cumulative average abnormal returns (CARs) 3 days following the event ($t=3$) and 6 days following the event ($t=6$). The cumulative abnormal returns (CARs) were estimated using the following equation:

⁴⁰ MacKinley, A.Craig. (1997). Event Studies in Economics and Finance. *Journal of Economic Literature*, Vol.XXXV,pp.13-39

$$CAR_t = \sum_{t=T_1}^{T_2} AR_t \quad (4)$$

where T_1 is the event day and T_2 is consequently 3 and 6 days after the event.

ANALYSIS AND EMPIRICAL FINDINGS

The findings of the event study methodology for each one of the three key dates that shaped the whole event are presented in Table 1 where the abnormal returns and statistical significance levels for the 0, 3, and 6-day event windows are shown. Additionally, a column was included showing the number of trading days elapsed before each of the three indices returned to its previous level.

According to the results, the 1999 attack has negative effect on the returns of all indices except from Banks, Trade and Industrial. Regarding the abnormal returns the largest negative and statistical significant abnormal return is on Tourism Industry (-8.79%) and on Industrial Index (-2.65%). Tourism Index displays also significant negative 3 and 11-day cumulative abnormal returns enhancing previous evidence about the sensitivity of tourism industry on terrorist events.⁴¹ All other indices present a quick recovery of two days and positive CARs. In this overall good reaction with the exception of Tourism Index may help that the event took place on Sunday and investors discounted the causes and the implications.

The 2003 blasts were devastating for the ISE. On the event day the actual reaction of the main share index was -7.4% and the stock exchange closed and reopened on December 1st with Turkey's Central Bank prepared to intervene to support the falling of Turkish Lira. Without exception, all indices fall, Banks and Tourism Index fall 11% with negative and statistically significant ARs of -10%. Similarly to the previous attack, Tourism Index continued to record losses and rebounded only after the pass of fifteen trading days. The days ISE remained closed proved enough for the indices and the investors to recover in a single trading day. Looking on Graph 2 increased volatility in returns of National-100 Index were appeared after the event.

Our results show no significant negative reaction of the ISE after the July 2008 attacks. Extremely positive and statistical significant CARs for most of the indices are presented in Table 1. Trade Index was the most conservative with 1.62% 3-day CAR. Turkish state's decisions to attribute the double

⁴¹ Drakos, K., & Kutan, A. L. (2003). Regional effects of terrorism on tourism in three Mediterranean countries. *Journal of Conflict Resolution* 47, 621-641.

bombing to “PKK” were both predictable and unconvincing. The reaction of equity investors was a testament of the relative insignificance of the incident.

<Table 1>

<Graph 2>

CONCLUDING REMARKS

This paper, examined the environment in which the three terrorist attacks took place and the reaction of the Istanbul Stock Exchange. Turkey’s strategic geographical position offers advantages and disadvantages. The economic development of the last decade and the leading regional role in the Middle East put Turkey on the target list of international terrorism. The U.S. role in Turkey, the geographical position, the religion and the European perspective of Turkey create a hazy picture that potential disruptors, the “deep state” and speculators could exploit. It is clear that the introduction of transnational terrorism in Turkey change the political and economical rules. Regarding the role of the Stock Exchange in this environment our empirical findings indicate the significance of the 2003 attack and the sensitivity of Tourism Stocks. However, investors show trust in Turkey’s high ratios of development and the rebound of the Stock Exchange was very quick despite the severity of the events.

Appendix

Graph 1: National-100, Banks, Industrial, Services, Tourism & Trade Indices

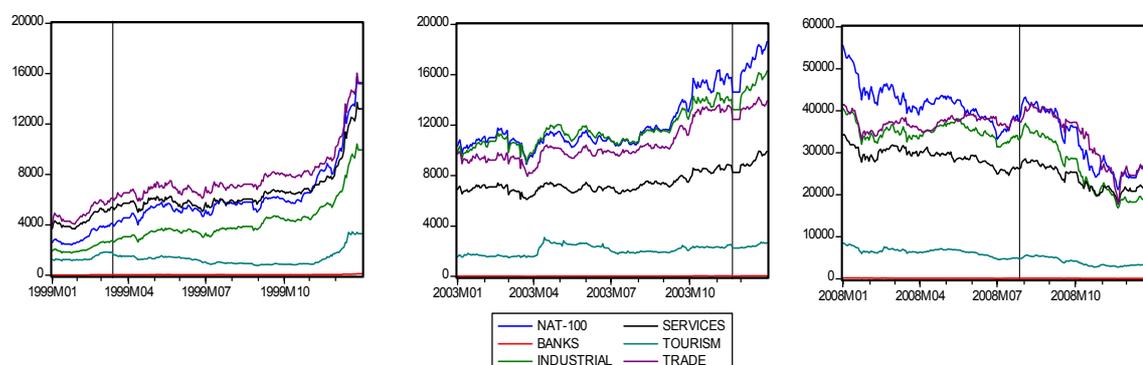


Table 1. Abnormal Returns on Nat-100, Banks, Industrial, Tourism and Trade Index on 14/3/99,20/11/03,27/7/08

Index	15/3/1999			20/11/2003			27/7/2008		
	Event-day AR	3-day CAR	6-day CAR	Event-day AR	3-day CAR	6-day CAR	Event-day AR	3-day CAR	6-day CAR
Nat-100	-2,27%	1,96%	0,61%	-7,51%	2,05%	4,56%	2,09%	11,19%	10,25%
t-stat	(-0,73)	(+0,08)	(+0,04)	(-2,87)*	(+0,78)	(+1,73)	(+5,02)*	(+5,02)*	(+4,60)*
Days to Rebound	2			1			0		
Bank Index	-1,95%	2,15%	-0,45%	-10,40%	4,30%	7,90%	3,95%	20,57%	18,44%
t-stat	(-0,45)	(-0,01)	(+0,44)	(-2,72)*	(+1,12)	(+2,06)	(+1,06)	(+5,55)*	(+4,98)*
Days to Rebound	3			1			0		
Industrial Index	-2,65%	0,99%	7,05%	-5,97%	2,30%	4,95%	0,56%	6,82%	7,63%
t-stat	(-1,13)	(+0,42)	(+3,02)*	(-2,92)*	(+1,12)	(+2,42)*	(+0,31)	(+3,78)*	(+4,23)*
Days to Rebound	2			1			0		
Services Index	-0,89%	-0,82%	2,60%	-5,97%	0,25%	-0,21%	0,66%	6,34%	4,29%
t-stat	(-0,36)	(-0,33)	(+1,05)	(-3,05)*	(+0,12)	(-0,10)	(+0,39)	(+3,72)*	(+2,51)*
Days to Rebound	0			1			0		
Tourism Index	-8,79%	-16,80%	-14,44%	-10,67%	-10,97%	-8,60%	0,17%	5,10%	14,41%
t-stat	(-2,37)*	(-4,53)*	(-3,89)*	(-4,37)*	(-4,49)*	(-3,52)*	(+0,08)	(+2,49)*	(+7,04)*
Days to Rebound	>100			15			0		
Trade Index	0,08%	-0,26%	3,06%	-6,89%	-1,45%	-1,37%	-0,01%	1,62%	4,69%
t-stat	(+0,03)	(-0,09)	(+1,08)	(-3,71)*	(-0,78)	(-0,73)	(-0,05)	(+0,95)	(+2,76)*
Days to Rebound	0			2			0		

Notes: T-statistics are in parentheses. ^aNumber of trading days for the market index to return to pre-attack level. *Statistically significant at the 0.05 level

Graph 3- National-100 Volatility

