SEPARATIST TERRORISM AND THE ECONOMIC CONDITIONS IN SOUTHEASTERN TURKEY*

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Abstract

This paper investigates the economic roots of separatist terrorism in Turkey. The political conventional wisdom is that poverty in highly Kurdish populated, southeastern Turkey is one of the most important causes of separatist terrorism and Turkish-Kurdish conflict in Turkey. Therefore many economic policies have been implemented to improve the economic conditions in the southeastern part of the country. Using Global Terrorism Database and Vector Autoregression (VAR) methodology, I find that there is no causal relationship between economic conditions in southeastern Turkey and separatist terrorism. Therefore policy makers should be cautious in using economic measures to prevent separatist terrorism in Turkey.

Keywords: Economics of Terrorism, Count Data, Separatist Terrorism

JEL Codes: D71, D74, H56

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"Unemployment and poverty are natural supporters of terrorism in East and Southeastern Turkey. Would a person who has a job, buy his or her food, send their children to school and have at least a minimum standard of living live on mountains and put their life on the line for nothing? Would that person be against government?"
Deniz Gökçe (Economist and Columnist), Aksam Newspaper, July 2008

1 INTRODUCTION

Turkey had suffered from terrorism since the 1980s. Although there have been many domestic and international terrorist incidents in Turkey, most of the terrorist incidents are separatist in nature. Separatist terrorism is defined as terrorist incidents by separatist movements that aspire to autonomy for a particular group of people from a dominant political institution. Conventional wisdom sets economic deprivation in southeastern Turkey as one of the most important roots of terrorism and Kurdish-Turkish conflict in the country.

The deep political and contemporary belief on economic roots of terrorism in Turkey encouraged many projects in Eastern and Southeastern Turkey that will supposedly help to get rid of terrorism. Turkey will invest a projected total amount of $32 billion by 2010 to The Southeastern Anatolian Project (GAP), which is the country's largest development project, as well as one of the largest development projects in the world. GAP's main aim is to eliminate regional disparities by increasing the living standards of people in Southeastern Turkey. The project aims improvements in several sectors such as irrigation, hydraulic energy production, agriculture,education, urban and rural infrastructure, health and forestry.[1] A similar regional development project in Turkey is The Eastern Anatolia Project (DAP). DAP's main aim is to increase the per capita income and em-

[1] Southeastern Anatolia Project Regional Development Administration (www.gap.gov.tr)

ployment in Eastern Turkey. DAP mainly work on agriculture and irrigation. Project also include sectors such as energy, transportation, education and health. DAP was approved by the Higher Planning Council in 2008, and the Turkish government invested $224 million in 106 other projects during this year.[2] The Turkish Ministry of Finance is working on a recent law that enables zero income and corporate taxes in Eastern and Southeastern Turkey. In addition, the Prime Minister recently announced: "The Turkish government is planning a broad series of investments worth as much as $12 billion in the country's largely Kurdish southeast, in a new economic effort intended to create jobs and draw young men away from militancy".[3]

In this paper I question whether poverty and bad economic conditions in southeastern Turkey cause separatist terrorist incidents in Turkey. Most of the empirical findings in the economic literature, are against the conventional wisdom in Turkey that poverty causes terrorism. Abadie (2004) finds that terrorist risk is not higher in poorer countries, and that political freedom is shown to affect terrorism more than economic conditions. Countries with intermediate range of political liberties are shown to be more prone to terrorism.

Krueger and Laitin (2007) show that the origins of international terrorism is unrelated to economics. Terrorists' countries of origin are the ones with low civil liberties, and the targets are mainly the richer countries. Many other studies mainly support findings of Krueger and Laitin (2007) that there are no economic roots of terrorism (Feldman and Ruffle, 2007; Krueger and Maleckova, 2003). A few studies on terrorism find that economic development and social welfare policies are important determinants of terrorism (Burgoon, 2006; Li and Schaub, 2004; Li, 2005). Many of these studies focus on

[2] State Planning Organization (www.dpt.gov.tr)
[3] New York Times, March 12, 2008

the economic roots of international terrorism where the terrorist's country of origin is different from the target's country.

Whereas the previous literature finds that terrorism is unrelated to economic conditions, Derin-Güre (2009) finds that the richer the country, the fewer the terrorist attacks committed abroad by the country's nationals. Similarly, the author finds that when a country's economy is strong, its nationals commit fewer terrorist attacks at home. To my knowledge Derin-Güre (2009) is the first paper that considers the economic roots of separatist terrorism separately from domestic and international terrorism. The author finds that among the separatist areas in the world, the number of terrorist incidents are significantly higher in poorer separatist regions controlling for the economic conditions in the mainland.

As far as I know the only paper on the economic roots of terrorism in Turkey is Feridun and Sezgin (2008). This paper investigates the role of underdevelopment in southeastern Turkey in terrorism in the country by using 80 major terrorist incidents from 1987 to 2001.[4] Monthly data on separatist terrorist incidents and monthly interpolated yearly GDP series in the region have been used in estimations. Authors perform Principal Components Analysis on total GDP and its components in southeastern Turkey in order to reduce the number of potential explanatory variables. Using a limited, self-selected, monthly data set on 80 major terrorist incidents the authors perform logit estimations and find that there is a significant role of underdevelopment in eastern Turkey in the surge of terrorist attacks. The authors find evidence that agriculture and government services are more important components of GDP in explaining terrorism than trade,

[4] Authors merge data from different sources like MIPT, Rodoplu et.al. (2004), Sebasteanski(2005), Turkish Daily News and Turkish Press.

construction, manufacturing and transportation.

This paper is different from Feridun and Sezgin (2008) in several ways. First I consider the effect of regional underdevelopment in southeastern Turkey on only separatist terrorist incidents in Turkey, not all terrorist incidents. It is not clear why economic conditions in southeastern Turkey affect domestic or international terrorist incidents in Turkey. Mainly domestic terrorist incidents are perpetrated by Islamic or left-wing terrorist groups (the incidents included in Feridun and Sezgin (2008) perpetrated by DHKP/C, TKP/ML, TIKKO, IBDA/C, TIJ[5] and there is no evidence that any of these groups emerge specifically from southeastern Turkey. In terms of international terrorist incidents it is even more obvious that economic conditions in southeastern Turkey are irrelevant to the incidents perpetrated by foreign terrorist organizations in Turkey (the incidents included in Feridun and Sezgin (2008) perpetrated by Abu Nidal organization and Hezbollah).

One main difference in this paper from Feridun and Sezgin (2008) is the terrorist incidents data used. I use the Global Terrorism Database data on the number of separatist incidents with fatalities, whereas Feridun and Sezgin (2008) uses a self-selected data set on 80 major terrorist incidents. It is not obvious how these 80 incidents are selected and what is the main criteria for being a major incident. A comparison of the number of terrorist incidents in Turkey in the GTD data set and Feridun and Sezgin (2008) can be seen in Table 1.[6]

[5] DHKP/C (Revolutionary People's Liberation Front), TKP-ML (Turkish Communist Party- Marxist-Leninist Organization), TIKKO (Turkish Workers and Peasants Army, IBDA/C (Islamic Great Eastern Raider's Front), TIJ(Turkish Islamic Jihad).

[6] In 1993 there are no terrorist incidents in the GTD but 7 separatist incidents in Feridun and Sezgin (2008). To prevent any errors in the data, I checked the MIPT (Memorial Institute of Prevention of Terrorism) database and there are no separatist incidents in 1993 in the MIPT database as well. The incidents in Feridun and Sezgin (2008) that year are taken from two different articles (Rodoplu et.al., 2004; Sebasteanski, 2005). Definitional differences in terrorism in these papers might be the reason of having more terrorist incidents in 1993 in Feridun and Sezgin (2008). Also in 1992 the number of

By using Global Terrorism Data Base (GTD) between 1975 to 2001[7], this paper investigates if economic deprivation in Southeastern Turkey Granger causes separatist terrorism, and vice versa, in Turkey. I do vector autoregression (VAR) estimations using quarterly data on significant separatist terrorist incidents in Turkey and GDP growth in southeastern Turkey as a proxy for the economic conditions in the area. The results suggest that there is no causal relation between economic conditions and separatist terrorist incidents. I do not find that improvements in economic conditions in relatively poorer southeastern Turkey cause a decrease in separatist terrorist incidents in Turkey. I perform several robustness checks using monthly interpolated series and using a separatist terrorism index suggested by Eckstein and Tsiddon (2004).

It might also be argued that it is not the absolute economic conditions in southeastern Turkey but it is the economic conditions in the area relative to the rest of the country that matters in terms of separatist terrorism. In contrast to the conventional wisdom, I again find that when the GDP growth rates in southeastern Turkey relative to the growth rates in the rest of the country increases, the number of separatist terrorist incidents does not change significantly.

Another paper that is related to this paper is Araz-Takay et.al. (2009). The main purpose of Araz-Takay et.al. (2009) is how terrorism affects economic activity in Turkey. Therefore the main focus is not the economic roots of terrorism like this paper. Araz-Takay et.al. (2009) considers all terrorist incidents therefore does not distinguish between international, domestic and separatist incidents like Feridun and Sezgin (2008). Also economic performance in Turkey as a whole is used in Araz-Takay et.al. (2009) but not

incidents in GTD data set is very high which might be a concern about the data set. The estimations are using GTD are also done by using year dummies for years 1992 and 1993 for robustness checks and the results do not change significantly.

[7] Same estimations have been performed by using data from 1984 to 2004. The main results in the paper do not change significantly.

the economic conditions in southeastern Turkey like this paper or Feridun and Sezgin (2008) In addition to this, the data set used in Araz-Takay et.al. (2009) is gathered by the authors from a newspaper. Although it can be argued that a novel data set is used in this paper, there might be definitional problems in the data set in terms of terrorism. Terrorism definition in the newspapers in Turkey might not be consistent and the definition is different from definitions in US State Department Data Set, Memorial Institute of Prevention of Terrorism Database or Global Terrorism Database that I have been using in this paper.[8] Therefore the main focus and findings in this paper are different from Araz-Takay et.al. (2009).

The estimation results suggest that policy makers should be careful about using the economic policies in southeastern Turkey as a way to fight against separatist terrorism. Although economic policies to decrease the income discrepancies between relatively rich western Turkey and relatively poor southeastern Turkey might be desirable for several other reasons, I find that improvements in economic conditions in southeastern Turkey do not help to reduce separatist terrorism. Therefore any development project that increases government investments or GDP levels in southeastern Turkey should be taken cautiously, if the main aim is to fight against separatist terrorism in Turkey.

This paper is organized as follows: Section 2 presents background information on separatist terrorism in Turkey. Section 3 explains the data and its categorization. The empirical strategy and results are given in section 4, and I summarize my main conclusions in Section 5.

[8] For example incidents involving soldiers or military personnel and terrorists are counted as terrorist incidents in newspapers.

2 SEPARATIST TERRORISM IN TURKEY

Terrorism in Turkey has its roots in domestic terrorism[9], which started in the 1960s. Until the 1980s terrorist incidents were held by ideologically-motivated, mostly left-wing terrorist organizations. In the 1980s , together with the ongoing domestic terrorism by left-wing terrorist groups, a new form of terrorism, separatist terrorism[10], emerged. The separatist terrorist movement in Turkey has its roots in Kurdish nationalism. The main goal of separatist terrorism in Turkey is the establishment of an independent Kurdish state on the lands of southeastern Turkey, northern Iraq, and parts of Iran and Syria. It has been argued through the years that one of the major reasons fueling separatist terrorism in Turkey is the underdevelopment of the Kurdish region in southeastern Turkey compared to more developed western regions of the country (Rodoplu et. al., 2004).

Most of the separatist terrorist incidents in Turkey has been perpetrated by PKK (Partiya Karkeren Kurdistan/ Kurdish Worker's Party). PKK was founded in 1974 by Abdullah Öcalan, and formally named PKK in 1978. The main goal of the terrorist organization is to establish a Kurdish state via a communist revolution in predominantly Kurdish southeastern Turkey. PKK started its terrorist attacks in 1978 in Eruh-Şemdinli province and has carried out terrorist activities since then. The group is responsible for the vast majority of terrorist incidents and terrorism-related casualties in Turkey. PKK reportedly became involved in armed robberies and drug trafficking as well. It has also been argued that the group got external support from several countries such as Iran, Lebanon, Libya and Syria.(Manaz, 2007)

The main focus of PKK terrorism in the 1980s had been rural areas in eastern and

[9] Domestic terrorism includes the terrorist incidents where the target and the terrorist's country of origin is the same.

[10] Separatist terrorism is committed by domestic national engaged in separatist causes.

southeastern Turkey. At that time government facilities and personnel, as well as Kurdish civilians that collaborate with the Turkish government, had been attacked. After 1990s, attacks included urban-based targets and moved beyond the rural areas. The group began to terrorize tourist resorts and kidnap foreign tourists, and target Turkish interests in western Europe.

As a result of the First Gulf War in 1991, a de facto Kurdish state has been established in northern Iraq, which created safe havens for Kurdish separatist terrorists and PKK militants. The PKK's leader, Abdullah Öcalan, was captured in Kenya in 1999. Following his arrest, Öcalan announced a cease-fire and announced his desires to establish a peace initiative with the Turkish government on Kurdish issues. In 2002, PKK changed its name to Kurdistan Freedom and Democracy Congress. The cease-fire with Turkish government ended in 2004, and terrorist attacks continued. In 2005, the group reverted to its original name. Later that year, in 2005, the group announced a one-month cease-fire but the attacks resumed afterwards.

Although PKK is the largest separatist terrorist organization in Turkey, there have been several other separatist terrorist organizations, too, including Apo's Revenge Hawks, Apo's Youth Revenge Brigades, Kurdish Democratic Party, Kurdish Islamic Unity Party, Kurdish Patriotic Union, Kurdistan Freedom Hawks, Nationalist Kurdish Revenge Teams and People's Liberation Army of Kurdistan.

Solutions to the Turkish-Kurdish conflict has been one of the biggest debates in Turkey in late 2009 and early 2010. Government suggested a reform called Democratic Openness (also known as Openness to Kurds or Kurdish Initiative). Turkish government is planning to present the plan to the parliament in early 2010. According to the plan Turkey will grant a pardon to the PKK terrorists who live in northern-Iraq and allowing them to return to Turkey if they have not been involved in terrorist acts. First group

returned back to Turkey in December 2009. 34 terrorist who came from Mahmur and Kandil camps in Northern Iraq came to Turkey with celebrations in the region. They were judged in special courts build in the region and 29 of them were set free immediately. The celebrations for terrorists and the exercise of jurisdiction was protested in Turkey over that time. Democratic Openness is argued to include many steps that improve the rights of minorities in Turkey not only the Kurdish minorities but many journalists and specialists argue on whether it is a workable plan or not.[11]

3 DATA

In the vector autoregression estimations, I use GDP growth in southeastern Turkey as my main indicator of economic conditions in southeastern Turkey. Although GDP data is easily found in many developed and even developing countries including Turkey, there are limitations in the GDP data at the province level.[12] GDP data on provinces in Turkey are available from 1975-2001. I will use the GDP level data in the 11 provinces of southeastern Turkey. Following Feridun and Sezgin (2008) these 11 provinces that are mostly affected by the separatist terrorism and terror related Kurdish-Turkish conflict are Adıyaman, Bingöl, Bitlis, Diyarbakır, Elazığ, Hakkari, Mardin, Muş, Tunceli, Van, Siirt in Turkey.[13] Real GDP data are taken from the Turkish State Institute of Statistics between 1987 to 2004. From 1975 to 1987, province level real GDP per capita data is taken from Karaca (2004).

Using the Augmented Dickey-Fuller test and Phillips-Perron test for unit root I find

[11] Hurriyet, 2 February 2010

[12] GDP data is not available in regions like southeastern Turkey, therefore I use province level GDP data to generate the GDP level in southeastern Turkey.

[13] In 1991 Siirt was dividend into three provinces: Siirt, Batman, and Şırnak. The data for these three different provinces was combined after 1991.

that log real GDP per capita in southeastern Turkey is not stationary, whereas the real GDP per capita growth in southeastern Turkey is stationary. The unit root test results can be seen in Table 2. Therefore, I will use real GDP per capita growth as a proxy for the economic conditions in southeastern Turkey.

In addition to the GDP growth rates in southeastern Turkey, I also use relative GDP growth in southeastern Turkey which is the GDP growth rates in southeastern Turkey minus the GDP growth in the rest of the country (GDP growth in Turkey excluding southeastern Turkey) in the estimations.

Alternatively, total government investments or unemployment rates could be used as a proxy for economic conditions in southeastern Turkey. Although monthly unemployment rates in provinces are available, this information has been made public since 2004. Total government investments in provinces are available only from 1999 to 2006. Because of the limitations in the data, I can neither use total government investments nor unemployment rates as a proxy for economic conditions in my estimations.

Separatist Terrorism data in Turkey are taken from Global Terrorism Database (GTD).[14] The Global Terrorism Database is the newest database on terrorism. The database includes information from different and trustworthy databases, including the Memorial Institute for Prevention of Terrorism (MIPT) database, and include information on terrorist incidents all over the world from 1970 to 2004. Unlike many other databases on terrorism, GTD includes information on domestic and separatist terrorist incidents as well as international terrorist incidents.

In order to categorize the terrorist incident as a separatist terrorist incident, the organizations responsible for the attack were checked. If PKK or other separatist terrorist

[14] Another comprehensive data set on terrorism is MIPT (Memorial Institute of Prevention of Terrorism) database. In this paper I can not use MIPT data as well because MIPT has information on separatist incidents only after 1998. MIPT includes data on international terrorism since 1968.

organizations claim responsibility of an incident, I categorize the incident as a separatist terrorist incident. This categorization is limited in the sense that even though an incident is separatist in nature (Kurdish separatists are responsible from the attack), if no separatist terrorist organization claims responsibility for the attack or the terrorist organization is unknown, I cannot count them as separatist terrorist incidents. Robustness checks have been done by categorizing the incidents for which separatist terrorist organizations are responsible and the incidents that no terrorist organization claim responsibility as separatist incidents. It is a less-precise categorization than the initial categorization, and the main results in the paper do not change. I am interested in all the separatist incidents in Turkey, therefore the separatist terrorist incidents are not limited to the incidents that occur in southeastern Turkey. PKK and other separatist groups were engaged in urban bombings and suicide missions after the 1990s, responsible for many incidents that took place in western and central Turkey including Istanbul, Ankara and other tourist locations.

The estimations are done using a quarterly series. The GDP growth data is available yearly, therefore I interpolate the data to get quarterly series from yearly series. The proportional Denton method of interpolation has been used imposing the constraints that the interpolated series holds the annual totals.[15] Denton (1971) developed interpolation methods based on moment preservation. According to Denton interpolation, the benchmarked quarterly series should reproduce the movement in the original yearly series. Using interpolated data has its own problems. Even though one can increase the number of observations in the estimations by using interpolation, the new information added by interpolated growth rates are limited. The estimations are done using yearly data as well. Yearly data also suggests that improvement in economic conditions in

[15] Denton Stata module has been used in calculations.

southeastern Turkey do not cause a decrease in the number of terrorist incidents. As the data availability is a limitation for reliable hypothesis testing for yearly data, the results are not listed in this paper.[16] Robustness checks are done using monthly interpolation for GDP growth series.

An additional robustness check is done by using a terrorism index instead of the number of significant terrorist incidents as the dependent variable. In the main estimations I use terrorist incidents with fatalities. It might be argued that this selection ignores the incidents with no fatalities and the relationship between economic conditions and terrorist incidents should not be a function of the intensity of the incident. Therefore following Eckstein and Tsiddon (2004), I will use terrorism index for robustness checks. Terrorism index is derived as the natural log of an index that is equal to e plus the arithmetic average of the number of fatal victims in terrorist incidents, number of injured victims in terrorist incidents and the number of terrorist incidents in Turkey.

4 EMPIRICAL STRATEGY AND RESULTS

To estimate the effect of economic conditions in southeastern Turkey on separatist terrorist incidents in Turkey and vice versa, I employ vector autoregression estimations by using the Global Terrorism Database. My basic specification is:

$$\begin{pmatrix} Terror_t \\ Econ_t \end{pmatrix} = v + A_1 \begin{pmatrix} Terror_{t-1} \\ Econ_{t-1} \end{pmatrix} + ... + A_p \begin{pmatrix} Terror_{t-p} \\ Econ_{t-p} \end{pmatrix} + BX_t + u_t$$

where $Terror_t$ is the number of separatist terrorist incidents with fatalities in Turkey, $Econ_t$ is the variable showing the economic conditions in Turkey namely GDP growth

[16] Yearly estimation results are available upon request.

and relative GDP growth, X_t is a vector of exogenous variable, v is a fixed vector of intercept terms and u_t is the vector of error terms.

The main focus in empirical analysis is whether changes in economic conditions in southeastern Turkey cause a decrease in the separatist terrorism in Turkey and vice a versa. I will use Granger (1969) causality test to find the causal relationship between economic conditions and separatist terrorism. In VAR estimation, $Econ$ variable Granger-cause variable $Terror$ if lagged values of $Econ$ has a predictive power over the current value of $Terror$, conditional on lagged values of $Terror$ variable. Granger causality test can be criticized if the disturbance term that uses $Terror$ variable as dependent variable is correlated with the past values $Econ$ variables. National security measures taken by the government that can affect the successful separatist terrorist attacks might increase as a result of the improvement in economic conditions. On the other hand, these measures might be affected by the changes in the economic conditions, not only by the economic conditions in southeastern Turkey, but in the country as a whole.

In VAR estimations I use period dummies as exogenous variables. I use a post-war period dummy to show the period after the First Gulf war, after which a de facto Kurdish state in Northern Iraq was established. As has been argued before, this created safe havens for separatist terrorists in Turkey. Secondly, I use the cease-fire period from 1999 through the end of 2003 as the second period dummy. In 1999 Abdullah Öcalan is captured and he asked for a cease-fire. In 2004, PKK ends the cease-fire, marking the third period dummy used.

The VAR estimation results using the number of separatist incidents with fatalities and GDP growth in Turkey using quarterly and monthly data are shown in Tables 3 and 4 respectively. Tables 3 and 4 show that GDP growth in southeastern do not Granger cause separatist terrorist incidents in Turkey.

Figure 2 shows the impulse response and cumulative impulse response functions using GTD data. Impulse response functions show that an increase in GDP growth rates in southeastern Turkey, decreases and then increases the separatist incidents very slightly but the change is insignificant.

An alternative argument would be that rather than the absolute economic conditions in southeastern Turkey, the economic conditions in the area relative to the rest of the country is important. Derin-Güre (2009), using MIPT data on the separatist regions in the world, finds that economic conditions in the separatist regions with respect to the mainland matters. The VAR estimation results using the number of separatist incidents with fatalities in Turkey and relative GDP growth in southeastern part of the country (GDP growth in southeastern Turkey minus GDP growth in the rest of the country) using quarterly data are shown in Table 5. The results again suggests that GDP growth in southeastern do not Granger cause separatist terrorist incidents in Turkey. Robustness checks are also done using terrorism index. The results are listed in Table 6. We find that the main conclusions in this paper do not change.

5 CONCLUSION

Turkey is among the countries in the world that suffers from the highest number of separatist terrorist incidents. Terrorism and ways to fight against terrorism have long been debated in media and politics. Until now the economic deprivation and poverty in southeastern Turkey compared to western Turkey, which enjoys much better economic conditions, have been seen as one of the most important reasons for separatist terrorism in Turkey. Therefore many economic policies have been implemented to improve the economic conditions in southeastern Turkey for the sake of decreasing the number of

terrorist incidents nationwide.

In this paper I question whether there is a causal relationship between economic conditions in highly Kurdish-populated southeastern Turkey and separatist terrorism. I do not find a causal relationship between economic conditions and terrorism in Turkey. In contrast to conventional wisdom improvements in absolute economic conditions in souteastern Turkey do not decrease the separatist incidents. I also find that economic improvements in southeastern Turkey relative to the rest of the country, do not change the chances of terrorism significantly.

These results suggest that policy makers should be very careful about policies that intend to improve the economic conditions in southeastern Turkey to fight against separatist terrorism. I find that these policies might not decrease terrorism in Turkey.

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Figure 1: Separatist Terrorist Incidents in Turkey

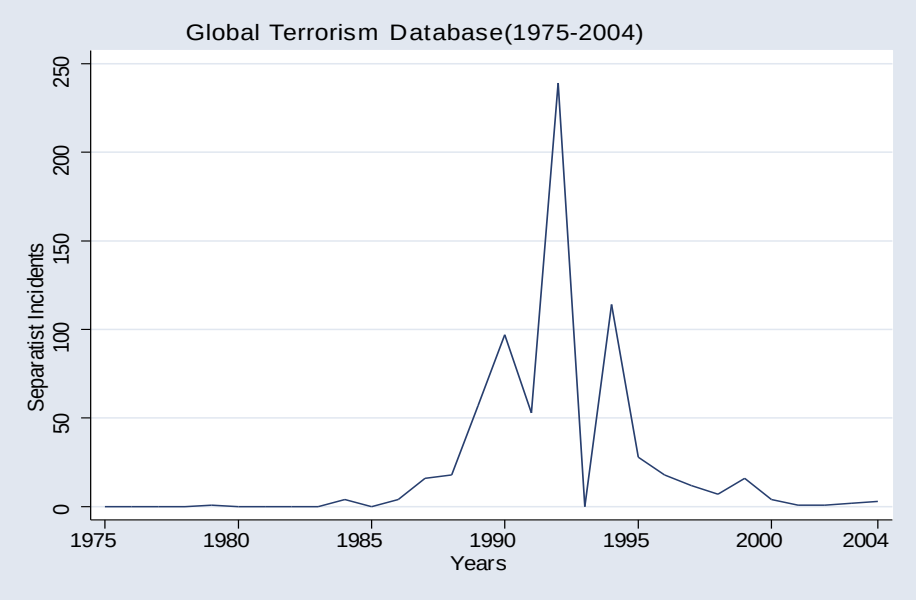
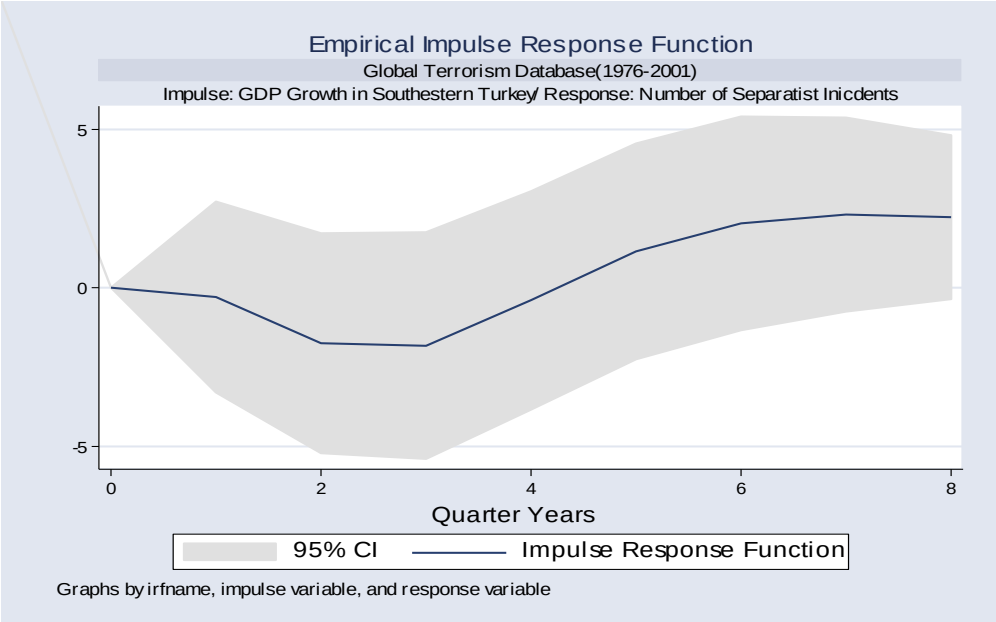


Figure 2: Impulse Response Functions



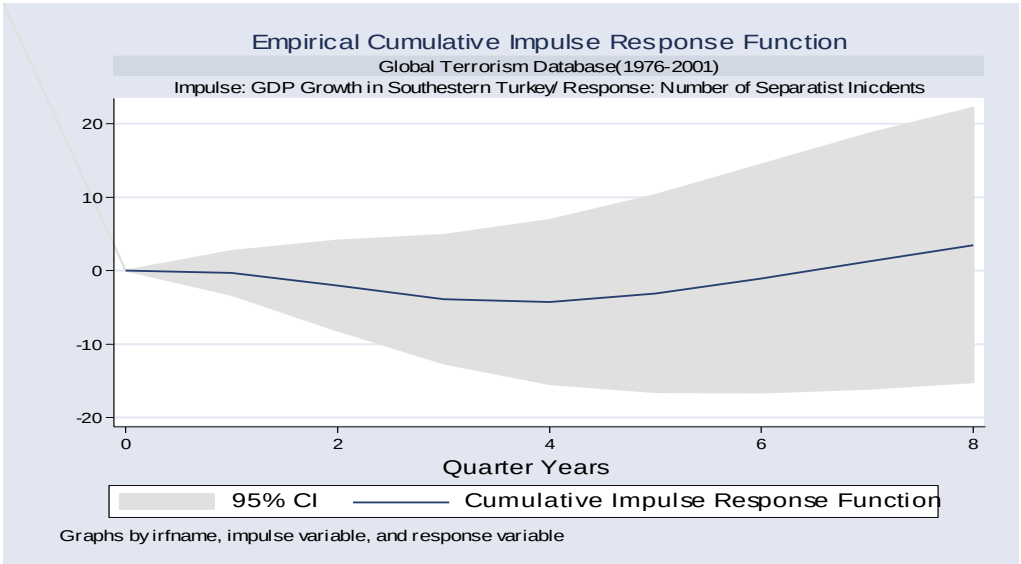


Table 1:Terrorist Incidents in Turkey, GTD versus Feridun and Sezgin(2008) and GDP in Southeastern Turkey

	Terrorist Incidents in Global Terrorism Database (GTD)					Terrorist Incidents In Feridun and Sezgin (2008)		GDP*** in Southeastern Turkey
Years	Separatist	International	Domestic	Unknown	Total	Separatist*	Total**	
1975	0	0	0	0	0	-	-	537623
1976	0	1	1	1	3	-	-	583044
1977	0	2	1	18	21	-	-	586283
1978	0	2	3	12	17	-	-	573599
1979	1	5	12	54	72	-	-	544395
1980	0	4	30	37	71	-	-	510020
1981	0	0	2	2	4	-	-	523400
1982	0	1	0	0	1	-	-	512170
1983	0	1	0	0	1	-	-	498567
1984	4	0	2	1	7	-	-	467350
1985	0	1	0	0	1	-	-	511466
1986	4	1	1	1	7	-	-	523142
1987	16	0	0	14	30	4	5	602203
1988	18	1	0	3	22	3	4	614604
1989	57	0	1	5	63	2	5	575300
1990	97	0	14	22	133	1	2	632046
1991	53	6	24	26	109	1	3	772269
1992	239	2	30	48	319	5	6	802739
1993	0	0	0	0	0	7	8	792851
1994	114	3	8	25	150	6	7	718118
1995	28	2	3	24	57	6	6	704385
1996	18	1	2	10	31	4	5	726004
1997	12	1	1	4	18	3	3	796504
1998	7	1	1	4	13	5	9	815575
1999	16	1	14	20	51	2	5	769142
2000	4	0	2	3	9	0	7	732448
2001	1	1	3	0	5	1	5	736080
Total	689	37	155	334	1215	50	80	

* Calculated by from the data set given in Feridun and Sezgin (2008). ** The number of terrorist incidents used in estimations by Feridun and Sezgin (2008). ***Real GDP per capita (base year=1987) in TL in southeastern Turkey.

Table 2: Tests for Stationarity

	ADF statistic	*PP statistic*
Seperatist Incidents with fatalities	-5,332 (0.00)	-5,296 (0.00)
Log GDP in southeastern Turkey	-2,568 (0.10)	-2,088 (0.25)
GDP Growth in southeastern Turkey	-4,26 (0.00)	-4,13 (0.00)

MacKinnon approximate p-value in parentheses
Tests have the null hypothesis that the variable has a unit root.
Null Hypothesis are accepted when p-values are greater than 0.05

Table 3: Vector Autoregression Results using Terrorist Incidents
Global Terrorism Database - Quarterly Data (1976q1 -2001q4)

Dependent Variable:	Separatist Terrorist Incidents		GDP Growth (in southeastern Turkey)	
Separatist Terrorist Incidents	(1)	(2)	(1)	(2)
t-1	0.94***	0.92***	0,01	0,01
	(0,09)	(0,09)	(0.004)	(0.004)
t-2	-0.54***	-0.54***	0,001	0,001
	(0,12)	(0,12)	(0.006)	(0.01)
t-3	0.31***	0.28***	-0,01	-0,01
	(0,09)	(0,10)	(0.004)	(0.004)
GDP Growth (in southeastern Turkey)				
t-1	0,01	0,19	1.48***	1.47***
	(1,91)	(1,92)	(0,10)	(0,10)
t-2	-2,37	-2,39	-0.62***	-0.61***
	(3,22)	(3,21)	(0,16)	(0,16)
t-3	2,97	2,84	-0,06	-0,06
	(1,92)	(1,92)	(0,10)	(0,10)
Periods				
Post-war		2,77		-0,15
		(3,07)		(0,16)
CeaseFire		-1,41		-0,12
(post-Ocalan capture)		(4,50)		(0,23)
Constant	2,29	1,94	0,02	0,06
	(1,40)	(1,62)	(0,07)	(0,08)
Chi^2 for joint sig.(p value)	139,33	141,76	971,55	982,78
	(0.00)	(0.00)	(0.00)	(0.00)
R^2	0,57	0,58	0,90	0,90
Observations	104	104	104	104
Granger Causality Test	5,12	4,22	5,61	6,15
Chi^2 (p value)	(0,16)	(0,23)	(0,13)	(0,10)

Standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: Vector Autoregression Results using Terrorist Incidents
Global Terrorism Database - Monthly Data (1976m2 -2001m12)

Dependent Variable:	Separatist Terrorist Incidents		GDP Growth (in southeastern Turkey)	
Separatist Terrorist Incidents	(1)	(2)	(1)	(2)
t-1	0.72***	0.72***	0.002**	0.002**
	(0,06)	(0,06)	(0,001)	(0,001)
t-2	0,07	0,07	-0,01	-0,01
	(0,07)	(0,07)	(0,01)	(0,01)
t-3	0,04	0,04	0,0002	0,0002
	(0,07)	(0,07)	(0.001)	(0.001)
t-4	-0,003	-0,003	0,001	0,001
	(0,07)	(0,07)	(0.001)	(0.001)
t-5	-0,002	-0,01	-0,002	-0,002
	(0,07)	(0,07)	(0.001)	(0.001)
t-6	-0,07	-0,07	-0,0002	-0,0002
	(0,07)	(0,07)	(0.001)	(0.001)
t-7	-0,09	-0,09	0,0003	0,0003
	(0,07)	(0,07)	(0.001)	(0.001)
t-8	0.18***	0.18***	-0.001*	-0.001*
	(0,07)	(0,07)	(0.001)	(0.001)
t-9	-0.19***	-0.20***	0,001	0,001
	(0,07)	(0,07)	(0.001)	(0.001)
t-10	0.21***	0.21***	0,0003	0,0003
	(0,07)	(0,07)	(0.001)	(0.001)
t-11	-0,06	-0,06	-0,001	-0,001
	(0,07)	(0,07)	(0.001)	(0.001)
t-12	0,03	0,02	0,0004	0,0005
	(0,07)	(0,07)	(0.001)	(0.001)
GDP Growth (in southeastern Turkey)				
t-1	3,21	3,38	1.77***	1.77***
	(3,31)	(3,31)	(0,06)	(0,06)
t-2	-7,09	-7,2	-0.75***	-0.75***
	(6,81)	(6,80)	(0,12)	(0,12)
t-3	10,53	10,52	-0.45***	-0.45***
	(7,05)	(7,03)	(0,12)	(0,12)
t-4	-10,88	-10,81	0.75***	0.75***
	(7,11)	(7,09)	(0,12)	(0,12)
t-5	-1,13	-1,15	-0.35***	-0.35***
	(7,54)	(7,52)	(0,13)	(0,13)
t-6	16.15**	16.11**	0	0
	(7,63)	(7,61)	(0,13)	(0,13)

t-7	-13.54*	-13.53*	0,02	0,02
	(7,68)	(7,66)	(0,13)	(0,13)
t-8	-3,91	-3,8	-0,09	-0,09
	(7,61)	(7,60)	(0,13)	(0,13)
t-9	8,72	8,63	0.37***	0.37***
	(7,18)	(7,17)	(0,12)	(0,12)
t-10	1,57	1,46	-0.53***	-0.53***
	(7,14)	(7,13)	(0,12)	(0,12)
t-11	-7,93	-7,67	0,06	0,06
	(6,88)	(6,88)	(0,12)	(0,12)
t-12	5,07	4,9	0.16***	0.16***
	(3,34)	(3,34)	(0,06)	(0,06)
Periods				
Post-war		0,64		-0,01
		(0,57)		(0,01)
CeaseFire		0,06		0,001
(post-Ocalan capture)		(0,82)		(0,01)
Constant	0,41	0,3	0,001	0,002
	(0,26)	(0,30)	0,00	(0,01)
Chi^2 for joint sig.(p value)	646,95	650,90	34039,39	34116,27
	(0.00)	(0.00)	(0.00)	(0.00)
R^2	0,67	0,68	0,98	0,98
Observations	311	311	311	311
Granger Causality Test	19,28	18,5	16,58	16,2
Chi^2 (p value)	(0,08)	(0.10)	(0,16)	(0.18)

Standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 5: Vector Autoregression Results using Relative GDP Growth Quarterly Data (1976q1 -2001q4)

Dependent Variable:	Separatist Terrorism Incidents		GDP Growth (in southeastern Turkey)	
Separatist Terrorism Incidents	(1)	(2)	(1)	(2)
t-1	0.97***	0.94***	-0.01*	-0,01
	(0.09)	(0.09)	(0.03)	(0.03)
t-2	-0.55***	-0.54***	0.008	0.0003
	(0.12)	(0.12)	(0.004)	(0.004)
t-3	0.28***	0.25***	0.001	0.003
	(0,10)	(0,10)	(0.003)	(0.003)
GDP Growth (in southeastern Turkey)				
t-1	0,43	1,14	1.39***	1.33***
	(2.44)	(2.46)	(0.10)	(0.10)
t-2	-1,54	-2,62	-0.56***	-0.49***
	(3.98)	(3.99)	(0.16)	(0.16)
t-3	1,54	2,48	-0,11	-0.17*
	(2.48)	(2.53)	(0.10)	(0.10)
Periods				
Post-war		3,94		-0,12
		(3.07)		(0.12)
CeaseFire		-4,06		0.41**
(post-Ocalan capture)		(4.67)		(0.18)
Constant	2.84*	2,86	-0.12**	-0.16**
	(1.53)	(1.74)	(0.06)	(0.07)
Chi^2 for joint sig.(p value)	129,13	135,16	754,95	810,22
	(0.00)	(0.00)	(0.00)	(0.00)
R^2	0.55	0.57	0.88	0.89
Observations	104	104	104	104
Granger Causality Test	0.55	1.32	5.56	4.35
Chi^2 (p value)	0.91	0.73	0.14	0.23

Table 6: Vector Autoregression Results using Terrorism Index
Quarterly Data (1976q1 -2001q4)

Dependent Variable:	Separatist Terrorism Index		GDP Growth (in southeastern Turkey)	
Separatist Terrorism Index	(1)	(2)	(1)	(2)
t-1	0.70***	0.68***	0.15**	0.16**
	(0,10)	(0,10)	(0,07)	(0,07)
t-2	-0,04	-0,06	-0,01	0
	(0,12)	(0,12)	(0,09)	(0,09)
t-3	0,09	0,07	-0,05	-0,02
	(0,10)	(0,10)	(0,07)	(0,07)
GDP Growth (in southeastern Turkey)				
t-1	-0,13	-0,1	1.47***	1.44***
	(0,14)	(0,14)	(0,10)	(0,10)
t-2	0,16	0,15	-0.62***	-0.60***
	(0,23)	(0,23)	(0,17)	(0,17)
t-3	-0,04	-0,04	-0,06	-0,06
	(0,14)	(0,14)	(0,10)	(0,10)
Periods				
Post-war		0,27		-0,27
		(0,24)		(0,18)
CeaseFire		-0,18		-0,02
(post-Ocalan capture)		(0,35)		(0,26)
Constant	0.50***	0.57***	-0,1	-0,15
	(0,18)	(0,19)	(0,13)	(0,14)
Chi^2 for joint sig.(p value)	107,63	107,63	906,18	906,18
	(0.00)	(0.00)	(0.00)	(0.00)
R^2	0,52	0,52	0,90	0,90
Observations	104	104	104	104
Granger Causality Test	1,396	0,947	5,407	7,526
Chi^2 (p value)	(0.71)	(0.81)	(0.14)	(0.06)

Standard errors in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%