



Turkey and Egypt: a Case Study on How Terrorism Affects Tourism in the Mediterranean

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Introduction

This study identifies the effect of terrorism on tourism in Turkey and Egypt from 1995 to 2015. Both countries experienced a significant amount of terrorist activity.

- Terrorism is defined as “a systematic and persistent strategy practiced by a state or political group against another state, political or social group through a campaign of acts of violence, such as assassinations, hijacking, use of explosives, sabotage, murder and the like, with the intent of creating a state of terror and public intimidation to achieve political, social or religious ends.” (Pizam, Abraham and Smith 2000a).
- The Mediterranean economy relies heavily on tourism and a substantial portion of their revenue relies on this industry.
- Months after initial destruction, tourism businesses are still affected. They have to rebuild infrastructure and regain the confidence of their consumers.
- This can only be done in the cases where the tourist attraction was not completely destroyed.
 - Iraq was bulldozed and destroyed by ISIS in 2015 (Williams, 2015). This delicate balancing act would have to be maintained while not raising prices that would automatically decrease demand, a very hard task to accomplish.

Literature Review

Drakos, Konstantinos and Ali M. Kutan. “Regional Effects of Terrorism on Tourism in Three Mediterranean Countries.” *Journal of Conflict Resolution* 47, no. 5 (2003). 621-641.

- Compares Mediterranean countries to a control, Italy, to examine the connection between terrorism and tourism
 - Enders, Walter and Todd Sandler. “Causality between transnational terrorism and tourism: The case of Spain.” *Studies in Conflict & Terrorism* 14, no. 1 (1991). 49-58.
 - Uses a time series method to analyze the affect of terrorism and tourism over the given time period and forecast future patterns
 - Pizam, Abraham and Aliza Fleischer. “Severity Versus Frequency of Acts of Terrorism: Which Has a Larger Impact on Tourism Demand?” *Journal of Travel Research* 40, (2002). 337-339.
 - Also uses a time series analysis. The research constructs a model with the dependent variable as the number of tourists entering Israel on a monthly basis and the independent variable as the severity and frequency terrorism acts
- Mentioned above:
- Pizam, Abraham and Ginger Smith. “Tourism and terrorism: a quantitative analysis of major terrorist acts and their impact on tourism destinations.” *Tourism Economics* 6, no. 2 (2000). 123-138.
- Williams, Ann R., “ISIS Bulldozes One-of-a-Kind Ancient Palace in Iraq.” *National Geographic*, March 6 (2015).

Models and Methodology

$$Y_{it} = \beta_0 \sum_{i=1}^3 \beta_{1,k} nkill_{i,t-k} + \sum_{m=1}^{12} \delta_{i,m} + \sum_{y=1995}^{2015} \gamma_{i,y} + \varepsilon_{i,t}$$

Y_{it} : Tourism demand, the total number of tourist arrivals at destination i during month t

$nkill_{i,t-k}$: number of people killed in terrorist attacks in country i at time t with a lagging effect of k

k : Lagging effect, Effect not immediate
As travellers plan trips in advance, we decided to include all three months’ lagging effects.

$\gamma_{i,y}$: Dummy variable, accounts for seasonality of tourism industry

$\varepsilon_{i,t}$: Dummy variable, captures yearly variations in tourism

Data

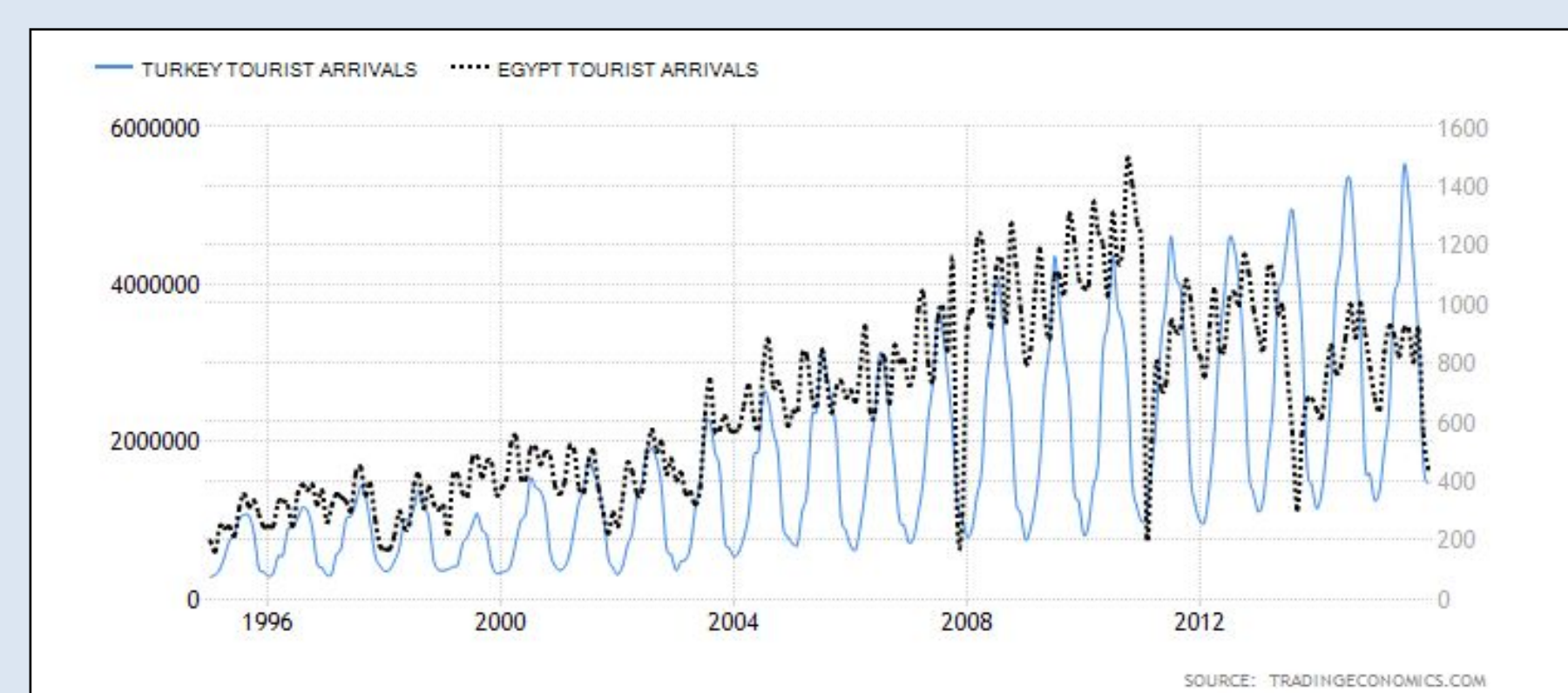
- Monthly data from 1995 to 2015.
- Source to show seasonal travel patterns: *Trading Economic*
- Source to procure terrorism data: *Global Terrorism Database*
 - Used number of kills as terrorism variable in order to measure for effect of more severe incidents.

Variable	Number of Observations	Mean	Std. Dev.	Minimum	Maximum
nkill	504	7.454365	20.30968	0	244
nwound	504	15.25397	46.88032	0	752
numinc	504	12.01587	22.67411	0	159
arrivals	504	1176991	1048204	161000	5480502

Variable	Number of Observations	Mean	Std. Dev.	Minimum	Maximum
nkill	252	6.805556	16.62709	0	150
nwound	252	18.25397	58.22534	0	752
numinc	252	12.01587	22.69668	0	159
arrivals	252	1695553	1251603	276633	5480502

Variable	Number of Observations	Mean	Std. Dev.	Minimum	Maximum
nkill	252	8.103175	23.43724	0	244
nwound	252	12.25397	31.55983	0	172
numinc	252	12.01587	22.69668	0	159
arrivals	252	658428.6	308828.2	161000	1486000

Statistical summary of terrorism attacks compared to the amount of victims killed and the number of incidents from 1995-2015



Monthly tourism arrivals for Turkey and Egypt from 1995-2015

Results

Turkey (249 Observations)	
Number of kills (L1)	-0.0006201 (0.0003)**
Number of kills (L2)	-0.0006636(0.0003)**
Number of kills (L3)	0.0003599(0.0003)
month dummy 1	(omitted)
month dummy 2	0.1083223(0.0199)
month dummy 3	0.4459672(0.0326)*
month dummy 4	0.733398(0.3323)*
month dummy 5	1.168847(0.023)*
month dummy 6	1.286154(0.3)*
month dummy 7	1.516207(0.0324)*
month dummy 8	1.508642(0.0309)*
month dummy 9	1.377552(0.0305)*
month dummy 10	1.165881(0.0305)*
month dummy 11	0.4999223(0.0288)*
month dummy 12	0.2973215(0.0274)*

Egypt (249 Observations)	
Number of kills (L1)	-0.0030097(0.001)*
Number of kills (L2)	-0.0031337(0.0009)*
Number of kills (L3)	-0.0024547(0.0008)*
month dummy 1	(omitted)
month dummy 2	-0.073957(0.0762)
month dummy 3	0.1771472(0.0568)*
month dummy 4	0.2445189(0.0477)*
month dummy 5	0.0927189(0.0472)**
month dummy 6	0.0512298(0.0455)
month dummy 7	0.294877(0.0485)*
month dummy 8	0.3511726(0.0506)*
month dummy 9	0.199386(0.051)*
month dummy 10	0.3432869(0.04)*
month dummy 11	0.1780052(0.068)*
month dummy 12	0.0929592(0.0452)**

- A one unit increase in the number of kills one month prior to departure decreased arrivals in Turkey by 0.06% at 5% significance level and in Egypt by 0.3% at 1% significance level.
- The effect of terrorism on tourism occur one and two months prior to people’s travel plans

Conclusion

Our hypothesis proved to be true which promotes for future research. More similar research could be done in this area to compare results from other countries or see if this theory could be expanded worldwide.

- It would also be interesting to consider how the tourists' origin affects their decision to still travel to this destination; if they are used to more unrest in their country of origin, they may be less bothered by incidents in their chosen destination.
- Our study focused solely on death producing incidents but by using a larger sample size of countries, one could consider if smaller, less severe attacks also had an effect.
- Finally, it would be interesting to compare these results with other types of crises to see if similar results are produced.
- Also, this study could improve policy awareness to long term effects of terrorism on tourism dependent regions in the aspects of international relationships and terrorism insurance packages.