IMPACT OF POLITICAL INSTABILITY AND TERRORISM IN THE TOURISM INDUSTRY OF THREE MIDDLE-EAST COUNTRIES: AN ECONOMETRIC EXPLORATION

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ABSTRACT

Time and again, tourism industry in the three Middle East countries of Egypt, Jordan and Lebanon has been impacted by political instability, including that of terrorist activities. Tourism industry in these three countries, which attracts a huge number of tourists from all across the globe, plays a very important role for their overall economic development. So, there is a need to take account of these factors (political instability and terrorist activities) and find out how they impact the tourism industry in these three countries. However, a quantitative analysis of such impact and its durability on the tourist inflows into these countries is lacking. The main objectives of this study are (a) What are the duration and magnitude of the impact of terrorism/ political instability on tourism for the above-mentioned countries?(b) What are the macro-economic impacts from such loss of tourism in these countries? The main finding of this study is that the impact of any incident of violence in Egypt is felt after one month and then declines in the subsequent periods. The Sharm-el-Sheikh incident caused a loss of 8 percent of foreign tourism receipts of 2004 and 0.56 percent of GDP of 2005. Similarly, Dahab bombing caused a total loss of 8 percent of foreign tourism receipts of 2005 and 0.53 percent of GDP of 2006. However, on contrary to Egypt, the impact of an incident is felt after nine months of the terror attack in case of Jordan. The incident of Jordan in November, 2005 caused a loss of 7 percent of foreign tourism receipts of 2004 and 1 percent of GDP of 2005. In case of Lebanon, the negative impact of terror incidents or political instability was felt almost immediately. These two significant incidents, war of 2006 and terror incident of May, 2008, resulted in a loss of 17.3 and 7.2 percent of foreign tourism receipts of the year 2005 and 2007 respectively. Moreover, these losses are equivalent to 4.6 percent of GDP of 2006 and 1.4 percent of GDP of 2008 respectively. It is expected that the findings will be useful for the tourism authorities as well as policy makers in their respective countries to understand the nature of the impact of political instability and violence, including terrorism, on the tourism industries of their own countries. It would also help them to self-assess the effectiveness of the various post-terrorism/post political instability marketing campaigns and strategies that would bring back tourism to normalcy in the post-crisis period.

KEYWORDS
Politic, Instability, Tourism

INTRODUCTION

World wide, tourism has emerged as a vital sector having considerable developmental impact in terms of gains in income and employment, foreign exchange earnings, growth of indigenous sectors through forward and backward linkages and the spread of infrastructures that it entails. Many governments expand tourism on priority and also support its regional growth through participation in dialogue with the regional partner countries. The United Nations World Tourism Organization (UNWTO) in its vision statement has predicted global annual tourism expenditure to hit US$ 2 trillion (i.e., US$ 5 billion per day) and the number of foreign tourists to reach 1.5 billion by 2020.[1]

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[1] As cited in Alsarayreh et. al. 2010.

However, the growth of the tourism industry has not been smooth as, beyond economic reasons such as fluctuations of demand or rising transport costs due to changes in the international price of oil, it faced many challenges inflicted by wars, terrorism, political instability and political tensions. Incidents of terror- attacks, like that at the World Trade Centre in New York City on September 11, 2001, which disturbed air travel worldwide, those in tourist destinations such as Egypt (1997, 2005 & 2006), Djerba/Tunisia (2002), Bali/Indonesia (2002 & 2005), Morocco (2003) and in important tourist cities like Istanbul/Turkey (2003), Madrid/Spain (2004), London/United Kingdom (2005), Amman/Jordan (2005), Mumbai/India (2008)are some examples. Tourism has also suffered external shocks due to "the bird flu" (Severe Acute Respiratory Syndrome: SARS) in East Asia in 2003, the recurring geopolitical instability and wars in the Middle East and periods of rising energy prices in some years, which adversely affected air travel in particular.[2]

This paper focuses on the tourism industry in three countries of the Middle East (Egypt, Jordan and Lebanon) as it was impacted by political instability, including that of terrorist activities, on the tourist inflows into the countries of this region. Tourism in the Middle East plays a very important role for the overall development of the region. In 2009, tourism industry attracted 6.8% of the international tourists and fetched US $ 65.3 billion in revenues accounting for 3.5 % per cent of the region's Gross Domestic Product (GDP).[3]

The Middle East is endowed with vast natural, historical and cultural resources, which attract tourists from all across the globe. The report published by the Global Futures and Foresight Report in 2007 estimated that the number of tourists in the region would be more than 150 million in 2020 up from 61 million in 2009.[4] However, tourist arrivals in the Middle East are intrinsically conditioned by the geo-political context, perceptions of stability, and security considerations in the region. Hence, there is a need to take account of these factors and find out how they impact the tourism industry in the Middle East countries.

The three countries under review account for 17 million of the 61 million foreign tourists of the Middle East and North Africa (popularly known as the MENA) region. Egypt is one of the most important tourist destinations. Directly and indirectly, travel and tourism in Egypt contributed to 13% of the GDP and 2.5 million jobs equivalent to almost 11% of total employment in 2010. In the same year, this sector generated $14 billion in export revenue, representing 22% of total exports that made tourism Egypt's largest contributor of foreign exchange earnings.[5] For the other two countries, Lebanon and Jordan, whose energy and natural resources are limited, tourism is a key driver of economic growth and an essential source of income.[6] In Lebanon tourism is very important for the local economy, representing a major source of income and contributing 38% of the GDP in 2010. The sector supports 1, 25,700 direct employment and 4, 48,300 total employment (total employment includes direct & indirect employment) across Lebanon in 2011, which are equivalent to 9.3 % and 33.4% of the total employment of the country.[7] In Jordan, tourism has been the main source of foreign exchange earnings from 2008 onwards. The total contribution of travel and tourism to GDP for the year 2010 was 14.6%.[8] In this context it is worth-mentioning that till 2007, remittances from Jordanian workers were the main source of foreign exchange earnings, which accounted for 16.9[9] % of the country's GDP.

These three countries, time and again, have faced terrorist attacks and have experienced various kinds of political instabilities (as discussed in Section 3 of the paper). This provides another justification for selecting them for the study as the purpose of this study is to assess the impact of political instability and terrorist- attacks on the performance of tourism in these three country contexts.

OBJECTIVES OF THE STUDY

The objective of this study is to investigate the relationship between political instability (and instability induced by terrorist attacks) and the consequent impact on the tourism industry in these three countries of the Middle East, namely, Egypt, Lebanon and Jordon. The study attempts to answer the following two questions:

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[2] Ehmer & Heymann, 2008; Alsarayreh et. al 2010.

[3] World Development Indicators (hereafter referred to as WDI), 2012.

[4] As cited by Ian, May 22, 2008.

[5] World Travel and Tourism Council (hereafter refer to as WTTC), 2010.

[6] Riebe, 2011; ABC Investments, 2009.

[7] WTTC, 2012.

[8] WDI, 2012.

[9] In the year 2007 the remittances from overseas Jordanian workers were US $ 2.99 billion and tourism receipt was US $ 2.75 billion (WDI, 2012).

a) What are the duration and magnitude of the impact of terrorism/ political instability on tourism for the above-mentioned countries?

b) What are the macro-economic impacts from such loss of tourism in these countries?

The remaining of the paper is structured as follows: Section 3 gives an overview of the tourism industry of these three countries, including the trends and patterns. A review of literature is presented in Section 4 encompassing studies that have sought to quantify the impact of terrorism on tourism at the global as well as in the regional level, especially in the countries of the Middle East. Section 5 discusses the different sources of data and methodology that has been used for the study. Section 6 contains a discussion on the empirical results obtained from the estimation. Finally, Section 7 concludes the paper by suggesting some policy implications.

AN OVERVIEW OF THE TOURISM INDUSTRY IN EGYPT, JORDAN, AND LEBANON

This section presents an overview of international tourism trends in Egypt, Jordan, and Lebanon vis-à-vis the global and the regional (Middle East) flows. The number of foreign tourist inflows in the world, Middle-East, Egypt, Jordan, and Lebanon. It can be noticed that the foreign tourist inflows at the global level has increased from nearly 540 million in 1995 to almost 900 million in 2009[10]. It means that, tourist inflow at the global level has maintained compounded annual growth rate of almost 3.7 percent. Middle-East has shown a compounded annual growth rate of practically 9 percent which is twice the world growth rate. Egypt has registered a compounded annual growth rate of 10.6 percent during the same time period. Jordan is also not lagging behind as it achieved a compounded annual growth rate of 10.1 percent during the period of 1995-2010. In case of Lebanon, the compounded annual growth rate was 10.4 percent for the period of 1995-2010.

In terms of tourism receipts, the world has achieved a compounded annual growth rate of 5.4 percent during the period of 1995-2010. The compounded annual growth rate of tourism receipts for Middle-East, Egypt and Jordan was 9.2 percent, 9.7 percent and 9.9 percent respectively, while for Lebanon it reached 17.7 percent[11]. The share of Middle-East in the world's tourists' inflow has doubled within a span of 15 years. The individual share of Egypt, Jordan, and Lebanon in the total tourist arrivals of Middle-East fluctuated around an average of 17.5 percent for Egypt, 6.4 percent for Jordan, and 2.6 percent for Lebanon. The fluctuations around the mean level might have been caused by various events like financial crises and incidents of political instability or terrorist attacks that had occurred at the global level as well as within the respective countries.

The contribution of tourism receipts in the world's GDP (Table 1) has been on an average 1.7 percent during 1995-2010 and 3.2 percent in case of the Middle-East's GDP for the same period. However, during the period of 1995-2004 the average share of tourism in GDP of Egypt was 5.1 percent, which rose to an average level of 7.4 percent during 2005-09. In case of Jordan the contribution of tourism in GDP is substantially higher than Egypt, which is almost 13 percent during 1995-2004 and 14.8 percent during 2005-10. The contribution of tourism in Lebanon's GDP during the period 1995-2004 was almost 12 percent and during the period 2005-10 it shot up to the level of 23 percent.

Similarly, the importance of tourism in countries like Egypt, Jordan, and Lebanon can be seen from its contribution to total exports (Table 2). Although the share of tourism receipts in the total exports of the Middle East stands on average at 6.9 percent during the period 1995-2010, the share of tourism receipts in the total exports in Egypt, Jordan and Lebanon are 24.7 percent, 28.4 percent, and 44 percent respectively. This readily indicates that tourism is a crucial source of foreign exchange for these three Middle- East countries.

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[10] Source WDI, 2012
[11] Calculated using WDI, 2012 data base.

TABLE 1
SHARE OF TOURISM RECEIPTS (%) IN GDP WORLD,
MIDDLE-EAST, EGYPT, JORDAN, AND LEBANON,1995-2010

Year	WORLD	MIDDLE EAST	EGYPT	JORDAN	LEBANON
1995	1.64	3.1	4.9	14.5	6.1
1996	1.74	2.8	5.3	14.8	5.2
1997	1.74	2.9	5.2	14.7	6.3
1998	1.76	3.0	3.5	13.7	7.1
1999	1.77	3.2	4.8	12.5	3.9
2000	1.77	2.9	4.7	11.0	4.3
2001	1.75	2.7	4.2	9.8	4.7
2002	1.76	3.4	4.7	13.1	22.4
2003	1.72	3.6	5.7	12.4	33.8
2004	1.82	3.9	8.0	14.2	27.2
2005	1.81	3.5	8.0	14.0	27.3
2006	1.81	3.3	7.6	15.5	24.3
2007	1.86	3.4	7.9	15.5	23.1
2008	1.86	3.1	7.4	15.6	21.0
2009	1.76	3.5	6.2	13.8	20.5
2010	1.69	--	--	14.6	21.0

Source: Author's own calculations based on WDI database 2012.
Note: -- indicates non-availability of data for that particular year.

TABLE 2
SHARE OF TOURISM RECEIPTS (%) IN TOTAL EXPORTS
WORLD, EGYPT, JORDAN, AND LEBANON, 1995-2010

Year	WORLD	EGYPT	JORDAN	LEBANON
1995	7.7	22.3	28.0	--
1996	7.9	25.5	28.0	--
1997	7.7	27.1	29.8	--
1998	7.6	23.5	29.9	--
1999	7.7	29.6	28.8	--
2000	7.2	27.6	26.4	--
2001	7.3	25.6	23.4	--
2002	7.4	25.1	27.6	73.2
2003	7.0	23.4	26.2	59.2
2004	6.8	23.9	27.2	49.0
2005	6.4	23.5	26.5	44.2
2006	6.1	22.2	29.9	36.8
2007	6.0	23.3	29.7	34.5
2008	5.8	22.1	28.5	27.7
2009	6.5	26.4	31.8	33.1
2010	5.6	--	33.0	39.4

Source: Author's own calculations based on WDI database 2012.
Note: -- indicates non-availability of data for that particular year.

Overview of Employment

As we are interested to measure the impact of terror incident or political instability on the employment of tourism sector, we need to look at the overall employment scenario of these three countries. We have collected the data for direct and total (which consists of direct & indirect) employment for the period of 1988-2011. For Lebanon, the direct employment in the tourism industry reached to 90,500 which accounts for 11.7 percent of total employment in the country, in 1990. Thereafter, the direct employment started declining till 2001 and 2002 onwards it gained momentum. It reached its highest level 1, 49,300, which is 12.9 percent of total employment, in 2003. The average share of direct employment in the tourism sector during the period 1988-1993, 1994-2001, and 2002-2011 were 9.3, 3.9, and 9.8 percent respectively. But in case of Jordan, 1988 onwards we observe almost steady increase, ignoring little bit fluctuations at some point of time, of direct employment in tourism sector. The average share of employment in tourism industry during 1988-1993, 1994-2001, and 2002-2011 were 8.3, 7.1, and 7.6 percent respectively. The employment scenario in Egypt is quite similar to that of Jordan. We find a steady increase in the direct employment in the tourism industry over the period 1988-2011. The mean share of direct employment in total employment of Egypt during 1988-1993, 1994-2001, 2002-2011 are 4.4, 5.1, and 7.1 percent respectively.

A BRIEF REVIEW OF LITERATURE

Studies examining the relationship between terrorism or political instability and tourism can be broadly classified into two categories –'qualitative' and 'quantitative'. Sonmez (1998) had provided a comprehensive list of qualitative studies (case studies) that have explored this relationship. However, quantitative studies are scarce in the literature examining the impact of terrorism on tourism as it has been rightly pointed out by Llorca-Vivero (2008). For the present paper, the focus, in this section, will be on the studies that have quantified the impact of terrorism on tourists' inflow as well as the duration of this impact, both at the global level and separately for the Middle East.

One of the early attempts to estimate the impact of terrorism on tourism and vice versa was made by Enders and Sandler (1991). The study focused on Spain for the period 1970–1988. Using Vector Auto-regression (VAR) methodology on monthly data on the number of foreign tourists visiting Spain and the number of terrorist incidents taking place, the authors found that terrorism affected tourism but not the reverse. A subsequent study by Enders et al. (1992) estimated the impact of international terrorism on domestic tourism in countries like Austria, Italy and Greece for the period of 1974–1988.[12] They found terrorist activities not only reduced tourism in the targeted countries but also affected the neighbouring countries negatively. Drakos and Kutan (2003) showed that international terrorism has a negative impact on tourism in countries like Turkey, Greece and Israel for the period of 1991–2000. The impact of terrorism on tourism industry in Turkey was also examined by Yaya (2008). For the period of 1985–2006, the author found that the impact of terrorism on tourism is negative but the magnitude of reduction of foreign tourist inflow is small. Moreover, the duration of the impact is observed approximately within one year. It also shows that terrorism has caused a loss of 6 million tourists in the span of nine years and the economic cost of terrorism on tourism industry was more than US $ 700 million in 2006.

Apart from the use of uni-variate and multi-variate time series models to explain the relationship between terrorism and tourism, Ordinary Least Squares (OLSs) technique has also been applied to explain this relationship. Dhariwal (2005), using the annual data of international tourist arrivals over the period 1966–2000, confirmed the existence of significant negative impact of terrorism on tourism. The author has found that in a disturbance year growth of tourist arrivals and growth of real tourism receipts decrease by nearly 6 and 8 percent respectively because of the disturbances as compared to a non-disturbance year. Moreover, growth in real tourism receipts declines by nearly 9 percent in a typical disturbance year compared to a typical non-disturbance year. Another study in the Indian context, by Bhattacharya and Basu (2010) established a one-way causality between incidences of terror attacks and foreign tourist arrivals. The one-way causality runs from terror incidents to foreign tourist arrivals and not the other way round. Foreign Tourist Arrivals (FTAs) in India begin to decline in the second month after the occurrence of the event till the fifth month after the terror attack. They then start rising from the sixth month onwards. After the seventh month, tourism reverts back to its original level.

Greenbaum and Hultquist (2006) found that terrorism in Italy had a significant negative impact on tourism over the period 1995-1997 and the impact was greater in case of large cities when compared with small cities. Moreover, the study confirmed that the impact of terrorism on economic and tourism activity is transitory in nature and is confined

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[12] This study and the others cited in this paragraph have used the transfer function methodology that is discussed later on in this paper.

largely to a period of 3–9 months after an event. The study measured the impact of terrorist activity on domestic as well as foreign tourist arrivals and it has pointed out that impact of terrorism is more on foreign lodging.

Other than time series models, scholars have also used various other techniques such as cross-sectional gravity equations, market demand-supply models and general equilibrium models depending on the situation and availability of data, to explore the above-said relationship. Llorca-Vivero (2008), using cross-sectional gravity equation for tourism over the period 2001–2003, showed that domestic incidents and international events affect tourist inflows negatively. The impact of a domestic event is less when compared with an international event. They also found that cost of terrorist attacks in developing countries in terms of tourist flows is more severe than developed countries. Fleischer and Buccola (2002), using the market demand-supply model, in case of Israel, found that two standard deviation or four unit increase in the terrorist index causes a decline of the visitors' demand for bed by 49,600 bed nights per month which is almost 7.5% from the sample mean. Their study also found that the effect of terrorism on tourism starts two months after the terror incident. Aly and Strazicich (2000) had examined the annual data on tourists' night visits for Egypt for the period 1955–1997 and for Israel for the period 1971–1997 to investigate whether shocks (events such as terrorism or war) have permanent or transitory effects on the time path of tourist visits. The authors had found that a shock creates a transitory disturbance to tourist flows. Blake and Sinclair (2002) used a Computable General Equilibrium (CGE) model to estimate the impact of 11 September 2001 attacks in the United States on travel and tourism. The authors found out that the impact was severe in terms of loss of income and employment. Their estimate shows a loss of US $ 30 billion GDP and more than half a million job.

Among the studies that had investigated the impact of terrorism/political violence on the tourism industry of the Middle-East region, Kalesar (2010) noted the emergence of new tourism markets in the Middle East post 9/11 terrorist attacks in the United States. The coordinated attacks at the World Trade Centre have had dramatic consequences for the global tourism market and were seen by many as a significant setback in the history of tourism industry. However, according to Kalesar (2010), the tourism sector in the Middle East countries did not suffer as expected considering the causes and scope of the crisis. In fact the intra-regional tourism boomed in the post-2001 like never before, as many people from countries of the Middle-East changed their traditional travel behaviours for fear of backlashes and Islamophobia and preferred to stay within the region for vacations. This particular segment of the tourism market has been defined as 'Islamic Tourism', 'Arab Tourism' or the 'Arab Middle East Tourism Paradox' in the existing literature on tourism.

Similarly, Hazbun (2006) is of the opinion that while there is a general notion that tourism economies are generally vulnerable to political violence, tourism patterns in the Middle East may call for a subtle revision of our understanding of how that relationship plays out. According to Hazbun (2006), in the 1970s and 1980s, an "incident" (as for example, terrorist attacks/ political violence) anywhere in the region would have a sizeable negative impact on tourism receipts across much of the Middle East and North Africa as Western tourists reconsidered their travel plans. He further pointed out that in the post-9/11 era, however, such a broad neighbourhood effect is mitigated by other factors. For example, despite the civil war in Iraq and the global tensions over Iran's nuclear program, the United States' posting its most serious "travel warnings" for locations across the region such as Lebanon, Israel[13], the Palestinian territories, Iraq, Iran, Saudi Arabia, and Yemen have done little to dampen the expansion of regional tourism, as in places like Dubai.[14] The author cited the World Tourism Organizations' (UNWTO) Report of 2005 which clearly stated that, 'in terms of consumer behaviour, it is quite evident that travellers have been undeterred by external threats. At the global level the impact of such shocks have been negligible … They have led to temporary shifts in travel flows, but they have not stopped people travelling. At the local level, the impact can be severe in the affected areas, but in most cases this is surprisingly short lived'.[15]

The nature of the different events of terrorism and political violence is not always comparable. For example, the recovery and expansion of tourism flows since 2001 has shown a marked divergence from patterns following the 1990–91 Gulf War, which itself posed little direct threat to tourists. For example, following the 1997 terrorist attacks at Luxor, Egyptian tourism revenues dropped by 50 %. However, the Egyptian tourism sector eventually recovered two years later from the crisis, and this recovery can be attributed as a major success of the crisis-response marketing and promotion policies of the country.[16] While the 2005 bombing at Taba (Egypt) seemed to target Israelis, it is worth noting that Cairo hotels reported almost no impact and 6 months later Egypt saw a 15 % increase in tourism.[17] In the wake of the July 2005

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[13]For details see Hazbun (2006).
[14]Dubai is beyond the scope of this study.
[15] As cited in Hazbun, 2006, pp. 215.
[16] Hazbun, 2006.
[17] EIU, 2004.

bombing at Egypt's Sharm el-Sheik resort on the Red Sea that killed up to 90, tourism receipts only saw a short-term 30% decline, while in the third quarter of 2005, arrivals surpassed 2004 levels and in the fourth quarter Egypt posted a rise in receipts compared to the same quarter of 2004.[18] A similar pattern was witnessed in Jordan after Iraqi suicide bombers struck three five-star international brand hotels in central Amman in November 2005. A week after the Radisson SAS had its ballroom destroyed, the hotel kept 40 % of its rooms full, while of the more than 7,000 British tourists expected to visit Jordan, a mere five cancelled their plans, with another 15 delaying their trip.[19]

One reason for this insulation of tourism from terrorist violence might be the physical insulation that popular tourism spaces offer. In places such as Egypt, Jordan, Tunisia, and the Gulf region, hotels, beaches, and tourist sites have increasingly confined tourists to enclave spaces, well protected by a range of security measures. This is especially true for tourists within the luxury resorts and urban shopping sectors. Following the anti-tourist terrorist campaigns in the mid-1990s, Egypt diversified its tourism development patterns, moving toward developing isolated resorts along the Red Sea, which are removed from the everyday life of the host country. These locations were popularised among the foreign tourists through international marketing strategies and efforts. At the same time, for many destinations, an increasing share of their visitors is intra-regional, domestic, who are ideologically and religiously motivated and also international tourists, who are more likely to have a fine-grained understanding of the geography of violence of the region. For example, trouble along the Lebanon–Israel border, including fighting between Hezbollah and the Israeli military, has rarely dampened the flows of Arab tourists or of the Lebanese Diaspora heading to their motherland. By contrast, the 2006 summer war and the internal political crisis have depressed Lebanon's tourism sector.[20]

Tourism flows are not as vulnerable to political violence as many might assume and even those areas rocked by violence and war have found alternative market niches (such as journalists, aid workers, and business travellers looking to for post-war reconstruction contracts) to sustain the demand for tourism services, as we find in case of Jordan, where in the year following the United States led war on Iraq, that is in 2004, there has been considerable growth in foreign tourist arrivals.[21]

From the brief review of literature pertaining to the international level, it can be said that among the various scholars there is a consensus that the act of terrorism affects inflow of foreign[22] tourists. Though the duration of the impact varies, general agreement is that it is transitory in nature and subsides at the most within a span of two[23] years. Our review of literature related to the Middle-East countries show that the studies are mainly qualitative in nature and moreover, no study, to the best of our knowledge, has measured the macro-economic impact of terror incidents on the foreign tourist arrivals for these countries. Therefore, it provides a scope to study the impact of terrorism or political instability on foreign tourists' arrivals in the three countries of Middle-East namely, Egypt, Jordan, and Lebanon and hence loss of tourism receipts i.e. foreign exchange as well as loss of employment in the tourism sector.

DATA SOURCES AND METHODOLOGY

Data Sources

In this paper we use yearly as well as monthly data for foreign tourist arrivals. The aggregate data have been collected from the World Development Indicators (WDI) database as well as from the UNWTO. The variables from WDI are annual and cover foreign tourist arrivals, GDP, tourism receipts and the percentage of tourism receipts to total exports for the world, Middle-East, Egypt, Jordan, and Lebanon. However, monthly data on foreign tourist arrivals for Egypt and Jordan were collected from their respective Ministries of Tourism. For Lebanon, monthly foreign tourist arrivals data were collected from the Central Administration of Statistics of Lebanon. The monthly foreign tourist arrivals data spread over the period from January 1997 to December 2007 for Egypt, from January 2002 to June 2011 for Jordan and from January 2000 to November 2011 for Lebanon. The yearly data on direct and total (direct & indirect) employment, and visitors' exports were collected from the World Travel & Tourism Council database for the period of 1988-2011. The data on incidence of terror attacks or political instability were gathered from Wikipedia and other internet sources.

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[18] EIU, 2006.

[19] EIU, 2005.

[20] Hazbun, 2006.

[21] ABC Investments, 2009.

[22]Few studies have dealt with domestic as well as foreign tourists. From such studies we know that terrorism adversely affects domestic tourists inflow. However, it is observed that in some cases, decline of foreign tourists is more in comparison with domestic tourists.

[23]However, in most of the cases we have observed that tourist inflow reverts back within one year.

Methodology

The aim of this paper is to measure the impact of political instability or terror attack on foreign tourist arrivals and thereby losses of revenue from tourism in countries like Egypt, Jordan, and Lebanon. The impact of an event can be measured by simple Student's t-test procedure when the observations before and after the event of interest varied around the means μ_1 and μ_2 not only normally and with constant variance, but also independently. In case of time series data successive observations are usually serially dependent and often non-stationary, and there may be strong seasonal effects. Thus the ordinary parametric or nonparametric statistical procedures, which rely on independence or special symmetry in the distribution function, are not available nor are the blessings endowed by randomization.[24] Hence, we employ the intervention analysis, a special case of transfer function models, in which the exogenous variable is an indicator or dummy variable, taking the value 0 and 1 to denote the non-occurrence or occurrence of intervention. Intervention analysis deals with the impacts of shocks that occurred in the process underlying the time series data of the variables. Intervention analysis is also called quasi-experimental or interrupted time series analysis. Interventions could either be abrupt or gradual. The impacts could be just for only one period (called pulse intervention), or could be a permanent change in the mean of the series (called level shift intervention) or could also be a change in the slope of the series (called trend intervention).

We have employed a model of the form

$$y_t = f(k, \xi, t) + N_t \tag{1}$$

where:
$y_t = F(Y_t)$ is some appropriate transformation of Y_t or Y_t itself;

$f(k, \xi, t)$ can account for deterministic effects as well as the effects of exogenous variables. In particular, the exogenous variable can be intervention variable.

N_t represents noise component; k is a set of unknown parameters.

The noise $N_t = y_t - f(k, \xi, t)$ can be modelled by a mixed autoregressive moving average process
$$\Phi(B)N_t = \theta(B)a_t \tag{2}$$
where:

B is the backshift operator such that; a_t is a white noise; $\theta(B)$ and $\varphi(B)$ are moving average and autoregressive polynomials of degree q and p respectively.

The effects of exogenous variables ξ can be represented by a dynamic model of the form
$$f(\delta, \omega, \xi, t) = \Sigma_{j=1}^{k} Y_{tj} = \{\omega_j(B)/\delta_j(B)\}\xi_{tj}$$

where:
1. The Y_{tj} represent the dynamic transfer from ξ_{tj};
2. $\delta_j(B) = 1 - \delta_{ij}B - \ldots - \delta_{rj}B^{rj}$ and $\omega_j(B) = \omega_{oj} - \omega_{1j}B - \ldots - \omega_{sj}B^{sj}$ are polynomials of degrees r_j and s_j, respectively;

In general, the individual Y_{tj} could be exogenous time series whose influence needs to be taken into account. For the present purpose, however, some or all of them will be indicator variables taking the values 0 and 1 to denote the non-occurrence and occurrence of intervention. For illustration, suppose for a single exogenous variable (k = 1) the model is
$$y_t = Y_t + N_t = [(\omega(B)/\delta(B))] B^b\xi_t + [\theta(B)/\varphi(B)]a_t$$

then the transfer of Y_t to the output is generated by the linear difference equation
$\delta(B) Y_t = \omega(B)\xi_t$ and B^b denotes the delayed effect of the intervention.

In the case of pulse intervention, if $[\omega(B)/\delta(B)] B^b = \omega$, the intervention effect exists for only one period. If $[\omega(B)/\delta(B)] B^b = [\omega/(1 - \delta B)]$ the effect will persist for a few more periods gradually dying off.

The following steps were performed to estimate the models for the three countries:

First, since the exogenous variable is a dummy variable, we do not need to pre-whiten the series. Therefore, we have tried to identify the model for the foreign tourist arrivals using the observations prior to the intervention point. For each

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[24] Box and Tiao, 1975.

country under investigation, the estimation procedure was conducted using standard Box-Jenkins (1976) method. The strong seasonal pattern in international tourism necessitated that the y_t series be seasonally differenced. Unit root tests were performed on the resulting tourism series to ensure that it is stationary. In case it contained the unit root we had to compute the appropriately differenced series to make it stationary.

The seasonally differenced and stationary series were identified and estimated using standard ARIMA technique. In choosing between alternative plausible models, we selected that with the lowest Akaike Information Criterion (AIC) and/or Schwartz Bayesian Criterion (SBC).

When the two criteria selected different models, we chose the model indicated by the SBC, which, by imposing a greater cost for additional parameters, selects the more parsimonious model. Diagnostic checking included plotting the residuals and using the Box-Ljung test statistic to check that the residuals are not correlated.

Second, once the model was identified in the first step, we have used this model to run the full model, including intervention variable. As in step one we used the AIC and SBC to select the appropriate model. If any of the estimated coefficients were not significantly different from zero, the model was re-estimated, constraining these coefficients to zero. We used the Box-Ljung test statistic to test for the lack of autocorrelation in the residuals.

In an attempt to measure the impact of terror incidents on the loss of direct employment we have calculated the elasticity of direct employment with respect to visitors' export i.e. spending made by the international tourists in a country in particular year for the three countries namely, Egypt, Jordan, and Lebanon. We have used ordinary least square technique to estimate the elasticity for three countries.

RESULTS AND ANALYSIS

One of the central propositions in this study is that political instability or terror attack reduces the foreign tourist flow in a country and thereby reduces the income from tourism receipts and affects employment in the tourism sector. This conforms the existing literature which argues that due to political instability or terror incidents there will be a decline in the tourist inflow net of trend, seasonal dependencies and stochastic fluctuations in the foreign tourist arrivals' time series data. But due to lack of monthly employment data in the tourism sector we could not follow the same procedure that we have adopted to measure the impact on foreign tourist arrivals. However, we have followed an ad-hoc approach to gauge the impact of terror incidents on the loss of employment in these countries. First, we have estimated the employment elasticity with respect to visitor's export, which helped us to calculate the change of employment due to one dollar change of receipts from foreign tourism in these three countries. Second, on the basis of intervention analysis we have calculated the loss of foreign tourism receipts. In the third step, we have multiplied the change of employment due to one dollar change of receipts from foreign tourism by the total loss of foreign tourism receipts.

Given the general intervention analysis model, the first step in the model building process is to develop a preliminary specification of the stochastic ARMA component by sample autocorrelation function of the endogenous foreign tourist inflow variable. The graphical plot of the foreign tourist inflow in Egypt during January-1997 to December 2007 clearly revealed that there are seasonal fluctuations in the data. Therefore, in order to remove the seasonality from the data we had to take the difference at 12 period lag as it is a monthly data. After removing the seasonality, we tested for the stationarity of the seasonally differenced data series using Augmented Dicky Fuller (ADF) test, Philips-Perron test and KPSS test. If we found that these tests are indicating the presence of unit root in the series, we have taken appropriate difference of the seasonally differenced data to make it stationary. Once we obtain a stationary series, we plotted the sample auto-correlation and partial auto-correlation function, which helped us to identify the components of Auto-regressive (AR) and Moving Average (MA). This method has been applied on the pre-intervention data points to approximate the data generating process without intervention and then applied the same during the full model estimation. Table 3 presents the unit root tests applied to the seasonally adjusted data. However, it is important to mention at this point that the presence of unit root implies that the effect of intervention will be in the memory of the data generating process. The results of the unit root test indicate that seasonally adjusted series is stationary and hence the impact of any intervention will be temporary in nature. The null-hypothesis of ADF and Phillips-Perron test is that the underlying series has unit root. In contrast, the null-hypothesis of KPSS is that the underlying series is stationary. Therefore, if the ADF and Phillips-Perron test rejects the null-hypothesis, it means that series under testing is stationary in nature. In contrast, if KPSS test is unable to reject the null-hypothesis, then the series under testing is stationary.

TABLE 3
UNIT-ROOT TEST RESULTS OF SEASONALLY DIFFERENT DATA

Country	ADF	Phillips-Perron	KPSS
Egypt	-3.54^{**}	-3.54^{**}	0.063
Jordan	-2.62	-5.17^*	0.042
Lebanon	-3.505^{**}	-3.48^{**}	0.060

*indicates significant at 1% level and ** indicates significant at 5% level

The test results of Egypt and Lebanon indicate that seasonally adjusted series is stationary in nature, which means there is no need to take further difference to make it stationary. In case of Jordan, we found that ADF test is unable to reject the null-hypothesis and this implies the presence of unit root. But the other two tests (Phillips-Perron & KPSS) indicate that the series is stationary and hence by the majority rule, we ignore the results of ADF test and accept that the underlying series is stationary in nature also for Jordan.

Once we make sure that the seasonally adjusted series is stationary, we plotted the auto-correlation (ACF) and partial autocorrelation function (PACF) to determine the order of the AR and MA process. However, we have also plotted the seasonally unadjusted series to check if there is any change in the nature of the ACF and PACF before and after the seasonal adjustment. But we did not find any change in their nature.

On the basis of ACF and PACF we have found that data generating process (DGP) for Egypt is first-order auto-regressive process i.e. AR (1) process. The DGP for Jordan includes two AR terms AR (1) & AR (2) and one MA term, that is, MA (13). Similarly, for Lebanon we have two AR terms i.e. AR (1) & AR (2). In the post estimation phase, we checked for the white noise property of the residuals of the three models applied on the pre-intervention data. The correlations among the residuals at different lag lengths were also tested using Ljung-Box Q statistic. But we didn't find any significant correlation among the residuals at different lag lengths. Being satisfied with the estimation, we proceeded for the next step to include interventions at different points of time.

The interventions for Egypt, Jordan, and Lebanon are as follows:

X_{1t}^{Egypt} = 1 for July, 2005
      = 0 otherwise.
X_{2t}^{Egypt} = 1 for April, 2006
      = 0 otherwise.
For Jordan:
X_t = 1 for November, 2005
   = 0 otherwise.
For Lebanon:
X_{1t} = 1 for February, 2005 to April, 2005
   = 0 otherwise.
X_{2t} = 1 for July, 2006 to August, 2006
   = 0 otherwise.
X_{3t} = 1 for May, 2008
   = 0 otherwise.

After specifying the intervention points we estimated the full model including the intervention variables.

TABLE 4
RESULTS OF TRANSFER FUNCTION ESTIMATION FOR EGYPT, JORDAN, AND LEBANON

Country	Mean	Estimated model	ARIMA		Estimated Transfer function				
Egypt	69.91** (34.85)	AR (1)	0.846** (0.050)	$X_{1(t-1)}$	-186.61* (59.18)	$X_{2(t-1)}$	-148.05* (59.58)		
				Denominator	0.6598** (0.291)	Denominator	0.76307* (0.306)		
Jordan	35678.9*** (21006.8)	AR (1)	0.247* (0.078)	X_{t-9}	- 152700.5* (44308.8)				
		AR (2)	0.508* (0.078)						
Lebanon	34607.4*** (20748.3)	AR (1)	0.257* (0.077)	X_{1t}	-15538.5 (38324.5)	X_{2t}	-140084* (35554.4)	X_{3t}	-99642** (52417.3)
		AR (2)	0.509* (0.078)			Denominator	0.456** (0.319)		

*indicates significant at 1%, **indicates significant at 5%, and *** indicates significant at 10%

The statistical results for the effect of political instability or terrorism on foreign tourist arrivals are presented in Table 4. The common feature between the three countries is that each country has a significant constant term in the regression and a AR (1) term. This result is quite similar to the results obtained by Enders et al. *(1992)* where the scholars obtained the AR (1) term for countries like Greece, Italy, and Austria. The presence of AR (1) term implies that system has a memory regarding the political instability or terror incidents that took place in the country and the memory of such incidents decays at the rate of the co-efficient of AR (1) term.[25] The highest value of the AR (1) co-efficient is obtained for Egypt (0.846) and least for Jordan (0.284). In the transfer function model of Egypt we included two interventions (1) 23rd July, 2005—the series of bombing attacks targeting the Egyptian resort city of Sharm-el-Sheikh in which 88 people were killed and over 150 were injured. This incident is being represented by the term $X_{1(t-1)}$ in the model of Egypt. (2) 24th April, 2006—three bomb attacks on the Egyptian resort city of Dahab which is popular with the western tourists. The term $X_{2(t-1)}$ represents the second attack in Dahab in the model of Egypt.

We have also estimated elasticity of employment with respect to visitors' export. We find that elasticity is highest for Egypt and that is 0.64 followed by Jordan and Lebanon, which are 0.46 and 0.28 respectively.

Our interest mainly lies with the coefficients of the intervention term ω and δ. The coefficients associated with the $X_{1(t-1)}$ term indicate that the Sharm-el-Sheikh bombing since July-2005 resulted in a decline of about 548530 foreign tourist arrivals i.e.

$$\omega_1/(1-\delta_1) = -186.61/(1-0.6598) = -5,48,530$$

and the second incident of Dahab bombing since April-2006 caused a decline of about 6,24,868 foreign tourists arrivals i.e.

$$\omega_1/(1-\delta_1) = -148.05/(1-0.76307) = -6,24,868.$$

Given the average spending of US $929 during the period of 1997-2009, the accumulated loss in tourism receipts for the Sharm-el-Sheikh and Dahab bombing incidents are US $ 510 million and US $ 580 million respectively. Given the employment elasticity with respect to visitors export is 0.64, the loss of employment due to Sharm-el-Sheikh and Dahab bombing incident are being estimated as 56,406 (which is 3.7 percent of direct employment of 2004) and 64,148 (which is 4.2 percent of direct employment of 2005).

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[25] Enders et al., 1992.

In case of Jordan, we found that the significant impact of the incident of coordinated bomb attacks at three hotels in Amman on 9th November, 2005, was felt after nine months of the incident. In this context it is worth mentioning that sometimes ARIMA technique fails to pick up the precise lag length for transfer function, as it places high weight on parsimony.[26] In their study Enders et al. (1992) observed that impact of terror incidents in Austria is felt with seven-quarter delay. It has been found that the decline of foreign tourist arrivals in the tenth month from the incident resulted in a loss of 1, 52,700 foreign tourists. The nature of impact is temporary and lasted for one period only. Given the average per-capita spending of US $815, the accumulated loss due to that incident was US $ 124 million. Given the elasticity of employment with respect to visitor's export 0.46, the loss of employment due to this incident was 2,790 (which is 2.5 percent of the direct employment in 2004).

In case of Lebanon, we find that three different attacks have had different impacts. The first attack, which occurred in February, 2005 did not exert any statistically significant impact on the foreign tourist arrivals in the country at any lags. The impact of the July War of 2006 was felt immediately and the total decline of foreign tourist arrivals was 2, 52,507. Given the average spending of US $4,023 for the period of 2000-05, the total loss of tourism receipts was US $1,035 million. The impact of conflict of May, 2008 resulted in an immediate decline of 99,642 foreign tourist arrivals and thereby caused a loss of US $419 million. Given the elasticity of employment with respect to visitors' export 0.28, the loss of employment due to war of 2006 and conflict of May, 2008 were 11,282 (which is equal to 8.7 percent of direct employment of 2005) and 4,567 (which is 3.7 percent of direct employment of 2007) respectively.

The table below (Table 5) summarises the loss of tourism receipts and loss of employment of the three countries under investigation.

TABLE 5
LOSS OF TOURISM RECEIPTS AND EMPLOYMENT DUE TO VARIOUS
TERROR INCIDENTS IN THREE MIDDLE-EAST COUNTRIES

EGYPT		
Terror Incident	**Tourism Receipt (US $ million)**	**Direct employment (no)**
Sharm-el-Sheikh (23rd July, 2005)	510	56,406
Dahab Bombing (24th April, 2006)	580	64,148
JORDAN		
Terror Incident	**Tourism Receipt (US $ million)**	**Direct employment(no)**
Amman Bombing (9th November, 2005)	124	2,790
LEBANON		
Terror Incident	**Tourism Receipt (US $ million)**	**Direct employment(no)**
Civil War (July, 2006)	1,035	11,282
Conflict (May, 2008)	419	4,567

CONCLUSION AND POLICY IMPLICATIONS

In this paper we made an attempt to find out the loss of tourism receipts due to lesser foreign tourist arrivals caused by terror incidents or political instability in three Middle-East countries namely, Egypt, Jordan, and Lebanon. Using the monthly data for foreign tourist arrivals for the three countries, we have estimated transfer function models for each of them. It has been found from our estimations that the terror incidents or political instability caused damage to the tourism sector of these economies by reducing the foreign tourist arrivals immediately and in the subsequent periods. We have noticed that the impact of any incident of violence in Egypt is felt after one month and then declines in the subsequent periods. The Sharm-el-Sheikh incident caused a loss of 8 percent of foreign tourism receipts of 2004 and 0.56 percent of GDP of 2005. Similarly, Dahab bombing caused a total loss of 8 percent of foreign tourism receipts of 2005 and 0.53 percent of GDP of 2006. However, on contrary to Egypt, the impact of an incident is felt after nine months of the terror attack in case of Jordan. The incident of Jordan in November, 2005 caused a loss of 7 percent of foreign tourism receipts of 2004 and 1 percent of GDP of 2005. In case of Lebanon, the negative impact of terror incidents or political instability was felt almost immediately. These two significant incidents, war of 2006 and terror incident of May, 2008, resulted in a loss of 17.3 and 7.2 percent of foreign tourism receipts of the year 2005 and 2007 respectively. Moreover, these losses are equivalent to 4.6 percent of GDP of 2006 and 1.4 percent of GDP of 2008 respectively.

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[26] Enders et al., 1992.

Therefore, in order to protect the tourism sector from the negative after shocks of terror incidents or political instability government the tourism industry and the government should become more pro-active in ensuring the safety and security of the foreign tourists. In some sense, they have done so through the development of enclave tourist sites, as we found in case of Egypt and Jordan.[27] Given also that it was the intra-Arab country tourism that actually saved the face of tourism industry of the Middle East during and following the crisis periods like the Gulf War or the September 11, 2001 attacks in the United States,[28] it is advisable that these three countries also try to promote this intra-regional tourism along with attracting tourists from outside the region.

It can be concluded by saying that it can be expected that the findings of this study would be useful for the tourism authorities of these three countries in order to understand the nature of the impact of political instability and violence, including terrorism, on the tourism industries of their own countries. It would also help them to self-assess the effectiveness of the various post-terrorism/post political instability marketing campaigns and strategies that they have adopted at various points of time, to bring back the tourism sector to normalcy in the post-crisis period.

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[27] Hazbun, 2006.
[28] Al Hamarneh et al. 2004.

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