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Terrorism and tourism: A conjunction and ramification in Pakistan

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ABSTRACT

This study investigates the impact of terrorism activities on tourism in Pakistan by using the annual time series data from the period of 1980 to 2010. Johansen and Jeuuselius and ARDL bound testing cointegration approach confirms the valid long run relationship between terrorism and tourism. Results indicate the significant negative impact of terrorism on tourism in the long run as well as in the short run. Results of rolling window estimation method indicate that terrorism having negative coefficients throughout the sample period. Results of dynamic ordinary least square (DOLS) suggest that the results will remain the same in the future up to lead 2. Results of Granger causality test, Toda and Yamamoto Modified Wald causality test and variance decomposition test confirm the unidirectional causal relationship between terrorism and tourism, causality runs from terrorism to tourism. Hye and Khan (2012) confirm tourism led growth hypothesis for Pakistan. It is suggested that the government should play a significant role to reduce terrorism activities that should be decreased in the country to boost tourism activities that lead to increase in income from tourism in Pakistan.

1. Introduction

Many studies have been conducted on tourism activities. Some of them show the relationship between tourism activities with economic growth and found significant positive relationship between tourism and economic growth.[2]On the other hand, some studies are done on the relationship between terrorism and tourism activities and conclude the negative and significant effect of terrorism on tourism activities.[3]

In Pakistan, during last three decades, the average tourism activities have significantly increased. In the 1980's, the average tourism receipt was 41 million, in the 1990's it was 45 million and in the last decade the average tourism receipt was 196 million. In contrast, terrorist activities have also increased in last three decades. In the 1980's, the average terrorist activities was 27, in the 1990's it was 163 and in the last decade it was 251.

Fig. 1.1 shows the trend in terrorism and tourist activities. Both activities show a mix trend but in the last few years, the terrorist activities have drastically increased in the country. The question is that, are terrorist activities correlated with tourism in Pakistan? This study examines this question by using long time series data from 1981 to 2010.

The rest of the paper is organized as follows: following the introduction Section 2 reviews some selected studies, Section 3 discusses empirical strategy, Section 4 shows estimations and results, Section 5 shows results of rolling window estimation, Section 6 discusses the results of dynamic ordinary least square, Section 7 shows the results of causal relationship between tourism and terrorism and the final section concludes the study and provides some policy implications.

2. Review of literature

Most of the empirical research suggests that terrorism has significant negative effect on tourism activities. Some selected studies are reviewed below.

Cook and McCleary (1983) and D'Amore and Anuza (1986) argue that previous international experience of tourists also influences their reaction to terrorism. In contrast, Sonmez and Graefe (1998) suggest the indirect impact of past international experience on future behavior. The nature of previous travel also has impact on future travel behavior (Mazursky, 1989).

Hartz (1989) argues that tourists modify their traveling behavior to risky destination because of the risk of terrorism. Cost of experience increased due to increase in tourist perceived risk caused by the risk from the terrorism at destination resulting in the substitution of that destination with one perceived as safe (Gu and Martin, 1992). Enders and Sandler (1991), Enders et al. (1992) and Mansfeld (1996). Mansfeld (1996) claims that the country's level of involvement in security situation correlates with its visitor's number. Conversely, Mansfeld (1996), Enders et al. (1992) and Sonmez (1998) argue that tourists

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[2] Gunduz and Hatemi (2005), Brida et al. (2010) and Hye and Khan (2012).

[3] Seddighi et al. (2001), Chen and Noriega (2004), Floyd et al. (2003) and Kingsbury and Brunn (2004).

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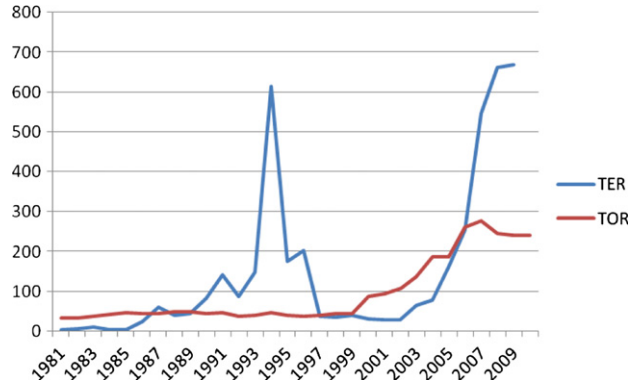

Source: Authors' Construction

Fig. 1.1. Trend of tourism and terrorism in Pakistan. Source: Authors' construction.

(Inter-Regional) generalized argument to the whole region. This is called "Generalization Effects".

Enders and Sandlers (1991) investigate the causal relationship between transnational terrorism and tourism in Spain. Monthly time series data have been used from 1970 to 1988. Vector auto regression method has been applied. Results indicate that unidirectional causality run from terrorism to tourism exists.

Drakos and Kutan (2001) discuss the regional effect of terrorism on tourism in three Mediterranean countries namely Greece, Israel and Turkey. Seemingly unrelated regression model is used by employing monthly time series data from January 1996 to December 2000. Results indicate that tourism industry in Turkey and Israel is more sensitive to terrorism than Greece.

Seddighi et al. (2001) affirm that political instability may be caused by terrorist attacks resulting to turn down in arrivals in some tourist destination. Chen and Noriegi (2004), Floyd et al. (2003) and Kingsbury and Brunn (2004) show that demand to cancel travel or holiday plan has increased after 9/11 terrorist attacks.

Alsarayreh et al. (2010) investigate the effect of terrorism on international tourism activities. Primary data has been collected from 42 different countries through a questioner. Descriptive statistics indicate that most of the respondents believe that terrorism has reduced international tourism activities.

Henderson et al. (2010) examine the effect of terrorism and tourism specifically to the hotel industry of Singapore. Four interviews have been conducted by security measures of Singapore's superior standard hotels and some are done from national security industry institute and academic experts. It is concluded that terrorist activities have unfavorable impact for destination where it happens. Hotels are attractive marks for attacks. The risks are considered and management is trying secure properties against damages.

Many time series and cross-sectional studies have been conducted on tourism. These previous researches have been divided into two groups. The first group of studies tests the relationship of tourism with economic growth. Researches in the second group identify the causal relationship between tourism and economic growth.

International tourism is considered as a source of foreign exchange earnings and if these earnings are used to import capital goods, it leads to enhance economic growth (Mckinnon, 1964). Ghali (1976) examines the role of tourism on economic growth. It is concluded that in the absence of tourism, personal income which has been recorded was 17 percent low. Balaguer and Cantavella-Jorda (2002) examine that tourism led growth hypothesis in Spain by employing quarterly time series data. Result indicates the long run multiplier effect growth. Skerritt and Huybers (2005) investigate the effect of international tourism on economic growth of 37 developing countries. It is concluded that tourism has significantly contributed to boost economic growth in developing countries.

Gunduz and Hatemi (2005) examine tourism led growth hypothesis in Turkey. Bootstrap causality test has been used. Results indicate that unidirectional causality exists, runs from tourism to economic growth exists. On the other hand, Dritsakis (2004) concludes that bidirectional causality exist between tourism and economic growth in Greece. Cortes-Jemenez and Pulina (2006) have found that supportive evidence of tourism led growth hypothesis for Spain by employing multivariate Granger causality test. Khalil et al. (2007) investigate the relationship between tourism and economic growth in Pakistan. Annual time series data have been used from 1960 to 2005. Results indicate that significant positive relationship exists between tourism and economic growth in the short run. Results also confirm bidirectional causality between tourism and economic growth.

Katircioglu (2009) re-examine tourism led growth hypothesis for Turkey by using Johansen and bound testing approach to cointegration. No causal relationship has been found between tourism and economic growth. Kreishan (2010) investigates the causal relationship between tourism earnings and economic growth. Result shows unidirectional causality run from tourism earnings to economic growth. Hye and Khan (2012) examine that tourism led growth hypothesis in Pakistan by using annual time series data from 1971 to 2008. Johansen and Juselius and autoregressive distributive lag model for cointegration are used. Results show that long run relationship exists between income from tourism and economic growth in Pakistan.

Overall, it is hypothesized that tourism has negative relationship with terrorism activities, while, most of the studies suggest that tourism has positive effect on economic growth.

3. Empirical framework

In this study, the 31-year annual time series data of Pakistan has been used from 1980 to 2010. Data of tourism is gathered from several issues of economic survey of Pakistan, while, data of terrorism activities is gathered from the Global terrorism database.[4] All variables are used in logarithm form.

3.1. Unit root test

Augmented Dickey Fuller (*ADF*)[5] and Phillip Perron (*PP*)[6] unit root test are used to examine the stationary properties for long run relationship of time series variables. Augmented Dickey Fuller (*ADF*) test is based on equation given below:

$$\Delta Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \sum_{j=1}^{k} d_j \Delta Y_{t-j} + \varepsilon_t$$

Where ε_t is pure white noise error term, Δ is first difference operator, Y_t is a time series, α_0 is the constant and k is the optimum numbers of lags of the dependent variable. Augmented Dickey Fuller (*ADF*) test determines whether the estimates of coefficients are equal to zero. *ADF* test provides cumulative distribution of *ADF* statistics. The variable is said to be stationary, if the value of the coefficient δ is less than the critical values from fuller table. Phillip and Perron (*PP*) unit root test equation is given below:

$$\Delta Y_t = \alpha + \rho^* Y_{t-1} + \varepsilon_t$$

The Phillip and Perron unit root test is also based on t-statistics that is associated with estimated coefficients of ρ^*.

[4] It is maintained by the National Consortium for the Study of Terrorism and Responses to Terrorism (START), based at the University of Maryland. Web Link: http://www.start.umd.edu/gtd/.

[5] See, Dicky and Fuller (1979).

[6] See, Phillips and Perron (1988).