Journal of Hospitality and Tourism Management xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Journal of Hospitality and Tourism Management

journal homepage: www.elsevier.com/locate/jhtm

Does causality between geopolitical risk, tourism and economic growth matter? Evidence from Turkey

Seyi Saint Akadiri[a,*], Kayode Kolawole Eluwole[b], Ada Chigozie Akadiri[c], Turgay Avci[b]

[a] College of Business, Westcliff University, Irvine, CA, United States
[b] Institute of Graduate Studies and Research Faculty of Tourism Management, Department of Tourism, Eastern Mediterranean University, Famagusta, North Cyprus, via Mersin 10, Turkey
[c] Institute of Graduate Studies and Research Faculty of Business and Economics, Department of Economics, Eastern Mediterranean University, Famagusta, North Cyprus, via Mersin 10, Turkey

ARTICLE INFO

Keywords:
Geopolitical risk
Tourism
Economic growth
Time series
Turkey

ABSTRACT

In recent times, the "Arab Spring" has seen most tourism-dependent economies such as Turkey experienced an unprecedented wave of political unrest which has impacted the outlook of the tourism industry significantly. To this effect, this study uses the modified version of the Granger causality approach advanced by Toda and Yamamoto (1995) to examine the direction of causality among the newly introduced geopolitical risk index, tourism and economic growth in the case of Turkey. To the best of our knowledge, this study is the first to examine the interrelationship between these variables in a multivariate causality study using quarterly frequency data 1985Q1-2017Q4. Empirical results indicate a unidirectional causality running from geopolitical risk index to economic growth and from geopolitical risk index to tourism. Finding also show that a one standard deviation shock to geopolitical risk has a noticeable negative impact on tourism and economic growth both in the short- and long-run.

1. Introduction

The highly sensitive nature of tourism industry has been a major factor informing main stakeholder's decision-making processes and approaches. Like most investors, tourism stakeholders invest more when industry outlook forecast suggest minimum uncertainties or risk. While the degree of uncertainty regarding future development is never constant, practitioners often seek to ascertain that uncertainty is kept at a minimal level. Understandably, events such as terrorism and political unrest impact the tourism earnings of nations as tourist naturally visit locations with track record of security and safety. Thus, tourism reacts to geopolitical events and adapt to broader political environment as it changes and evolves. In essence, the dynamic attributes of both local and international political environment holds a significant effect on the economy, tourism as well as other market agents (Antonakakis, Gupta, Kollias, & Papadamou, 2017).

Geopolitical frictions, tensions or even events such as elections creates fluctuations or uncertainties in the political scenes and can exert notable effect in tourism arrivals, tourism imports, number of overnight stays and other indicators of tourism development (Lanouar & Goaied, 2019; Sönmez, 1998). These events also exerts noteworthy effect on economic performance (Drakos & Kallandranis, 2015), equity market, portfolio allocation and so on (Omar, Wisniewski, & Nolte, 2017). While extant literatures have established that uncertainties such as terrorism, political instability, and conflict are factors that affect tourism (Saha, Su, & Campbell, 2017), the impact of geopolitical risk on tourism development have been understudied. Until recently when Demir, Gozgor, and Paramati (2019) investigated the impact of geopolitical risk on tourism inbounds for 18 countries, the nexus of geopolitical risk and tourism have been neglected.

In the ongoing discuss in empirical studies on significance of geopolitical risk, this note set out to examine the direction of causality among the newly introduced geopolitical risk index, tourism and economic growth in the case of Turkey. Using quarterly frequency data 1985Q1-2017Q4, this study investigates whether and to what degree geopolitical risk impacts on Turkey's tourism development and economic growth. To this effect, the modified version of the Granger causality approach advanced by Toda and Yamamoto (1995) was employed. To the best of our knowledge, this study is the first to examine the interrelationship between these variables in a multivariate causality

* Corresponding author.
E-mail addresses: s.akadiri.186@westcliff.edu (S.S. Akadiri), kayode.eluwole@emu.edu.tr (K.K. Eluwole), ada.akadiri@emu.edu.tr (A.C. Akadiri), turgay.avci@emu.edu.tr (T. Avci).

https://doi.org/10.1016/j.jhtm.2019.09.002
Received 4 April 2019; Received in revised form 17 August 2019; Accepted 4 September 2019

study using a span of over three decades (1985–2017).

Our results reveal that real GDP and tourism industry in turkey is negatively affected by geopolitical risks. This implies that tourism activities and its associated economic contributions tend to reduce during rising geopolitical risks periods. Our study contributes to literature in a number of ways. Firstly, to the best of our knowledge, this study is the first to gauge the impact of geopolitical risk on economic growth and tourism development for Turkey. Additionally, while the only previous study that investigated the influence of geopolitical risk on tourism inbounds uses fixed-effect and least squares dummy variable corrected (LSDVC) technique; we perform a modified Granger causality analysis. We also present a country-specific perspective to the on-going debate on geopolitical risk since prior study employed a multi-country panel approach.

The rest of the study is structured as follows. Section 2 presents in brief existing work on geopolitical risk, tourism and economic growth. Section 3 focused on data and methodology. Section 4 presents results and discussion while we concluded with section 5.

2. Geopolitical risk, tourism and economic growth in brief

While it is perhaps a generally accepted norms that personality safety is highly valued by everyone and people will naturally work to adverse any danger to personal safety, the affinity for risk and specific incentive of certain touristic destination alters this assumption and tourist defer the notion of ascribed risk to visit certain destination for various reasons (Bassil, Saleh, & Anwar, 2019). It is no news that tourism has been impacted globally by political unrest, terrorism and natural disasters (Lanouar & Goaied, 2019). Arab uprising in eleven Southern Mediterranean countries which included Turkey has notably created some mixed-reactions to tourism development in the region. Specifically, in Turkey, political unrest following the Arab-spring has significantly impacted the flow of tourism to the country (Perles-Ribes, Ramón-Rodríguez, Moreno-Izquierdo, & Torregrosa Martí, 2018). Thus, in proposing policy direction for tourism managers and economic policies that offers complete strategy for managing and maximizing shocks, it is imperative to investigate the causality relationship that exist between geopolitical risk, tourism and economic growth.

Balcilar, Bonato, Demirer, and Gupta (2018) asserted that geopolitical risk is a main determinant of investment decisions as it is believed to have the capacity to alter business cycles, financial markets and economic directions. Das, Kannadhasan, and Bhattacharyya (2019) further buttress this notion as their study infers that geopolitical risk is an influential indicator of economic market reaction to shocks or volatility. The intuition of main economic scholars is that geopolitical risk drives market portfolio characterized by shocks resulting from sudden and large increase in risk (Apergis & Apergis, 2016; Apergis, Bonato, Gupta, & Kyei, 2018; Caldara & Iacoviello, 2016; 2018). For the purpose of this study, we adopt the new geopolitical risk index of Caldara and Iacoviello (2016) which encompasses global uncertainty which is not limited to terror attacks but includes events such as war risk, Middle East tension, military tension etc. Caldara and Iacoviello (2018) define the geopolitical risks as the “risk associated with wars, terrorist acts, and tensions between states that affect the normal and peaceful course of international relations” (Caldara & Iacoviello, 2018, p. 2). Given the highly sensitive nature of tourism, we believe that this index adequately capture the movement and shock that such events leaves on tourism.

As pointed out by Lanouar and Goaied (2019), scholars have established that shocks and volatility has both transitory and permanent impact on tourism demands. For instance, findings from the study of Liu and Pratt (2017) revealed that although tourism is resilient to terrorism, terrorism impacts tourism on the short run. Similarly, there has been evidence that terrorist upheavals and political instability contributes significantly to fluctuation in tourism demands in the short run rather than long run (Agiomirgianakis, Serenis, & Tsounis, 2017). On the other hand, tourism also suffers permanent impact from shocks resulting from government policies, terrorism, tensions and others events that are covered by the indices of geopolitical risk. As indicated by Gil-Alana, Mudida, and de Gracia (2014) long-range dependence exist between tourism and event of seasonality.

Evidence from empirical studies have established that a causal relationship exist between tourism and economic growth (Akadiri, Lasisi, Uzuner, & Akadiri, 2018; Fahimi, Saint, Akadiri, Seraj, & Akadiri, 2018; Liu & Song, 2018; Roudi, Arasli, & Akadiri, 2018). More specifically, events leading to tourism demands often contribute to the economic development of the tourism state. Due to its significance to economic growth, various stream of the relationship has been postulated. For instance, some scholars have devoted effort to investigate tourism-led growth hypothesis (Adnan Hye & Ali Khan, 2013; Brida, Cortes-Jimenez, & Pulina, 2016; Katircioglu, 2009) while others have focused on economic-driven tourism growth (Comerio & Strozzi, 2019; Wu & Wu, 2019). In all, tourism and economic growth are inseparable especially for tourism-dependent economies such as Turkey. In sum, this study aims to establish empirically, that geopolitical risk impacts tourism demands, hence economic growth of any tourist destination countries in the world.

3. Data and methodology

3.1. Data

In this section, we discuss the data and adopted methodology. As discussed earlier, this study examines the causal relationship among the newly introduced geopolitical risk, tourism and economic growth in the case of Turkey. The choice of Turkey as sampled country is based on the fact that the nation has experienced an unprecedented wave of political unrest overtime, which has impacted the outlook of the tourism industry in the region (Tekin, 2015). This study seeks to test empirically, whether there is existence of a causal relationship among geopolitical risk, tourism and economic growth or not in a multivariate causality study using quarterly frequency data 1985Q1-2017Q4. Data on geopolitical risk is obtained from the work of Caldara and Iacoviello (2018) https://www2.bc.edu/matteo-iacoviello/gpr.htm.

Geopolitical risks, is measured using the monthly index for geopolitical risks constructed by Caldara and Iacoviello (2016). The index created from searches of electronic archives of major newspapers for words related to geopolitical threats, geopolitical risks; nuclear threats, war acts and terrorist acts, war threats and terrorist threats. Monthly counts of newspaper articles with these words are conducted. The 2000-09 decade is then set to a mean value of 100 via a normalization such that values greater than 100 reflect higher levels of geopolitical risks than those recorded in the 2000-09 decade, and values lower than 100 indicate lower levels of geopolitical risk than those observed in the 2000–2009 decade. While tourism and real GDP are sourced from World Development Bank Indicators < sup > 1 < /sup > . Tourism is measured as the number of inbound tourists. Our preference for number of inbound tourists over tourism receipts is to avoid the potential endogeneity bias that could result from using tourism receipts as it is included in the computation of national income. The variables are used in their natural logarithm forms < sup > 2 < /sup > . We make use of the interpolation technique to convert the annual data into quarterly data.

[1] For empirical estimation, we make use of the interpolation technique in EVIEWS-15 to convert the annual data of real GDP and tourism inbound and monthly data of geopolitical risk index into quarterly data. This method was followed by McDermott and McMenamin (2008) and Romero (2005).

[2] *Note: LNRGDP is the* log *of RGDP, LNGPR* log *of geopolitical risk index and LNTOUR* log *of tourism respectively*.

3.2. Methodology

To achieve research objectives, this study makes use of the modified version of the Granger causality approach advanced by Toda and Yamamoto (1995) that generates robust and consistent causality Wald test statistic even when series are natural integrated at level, $I(0)$, integrated at first order $I(I)$ and/or mixed-order $I(0)/I(I)$. This approach to causality testing possesses more computational merits than the conventional causality testing. It is built on the vector regressive (VAR) structure $(k + d_{max})$, where $k$is the optimum order in the VAR system. The d_{max} on the other hand, is the optimum order of integration. For this study, we specified Toda and Yamamoto as follow in Eqs. (1)–(3):

$$\ln RGDP_t = \gamma_0 + \sum_{i=1}^{k} \gamma_{1i} \ln RGDP_{t-i} + \sum_{j=k+1}^{d_{max}} \gamma_{2i} \ln RGDP_{t-j} + \sum_{i=1}^{k} \beta_{1i} \ln GPR_{t-i} + \sum_{j=k+1}^{d_{max}} \beta_{2i} \ln GPR_{t-j} + \sum_{i=1}^{k} \mu_{1i} \ln TOUR_{t-i} + \sum_{j=k+1}^{d_{max}} \mu_{2i} \ln TOUR_{t-j} + \upsilon_{it} \quad (1)$$

$$\ln GPR_t = \beta_0 + \sum_{i=1}^{k} \beta_{i1} \ln GPR_{t-i} + \sum_{j=k+1}^{d_{max}} \beta_{2i} \ln GPR_{t-j} + \sum_{i=1}^{k} \gamma_{1i} \ln RGDP_{t-i} + \sum_{j=k+1}^{d_{max}} \gamma_{2i} \ln RGDP_{t-j} + \sum_{i=1}^{k} \mu_{1i} \ln TOUR_{t-i} + \sum_{j=k+1}^{d_{max}} \mu_{2i} \ln TOUR_{t-j} + \upsilon_{2t} \quad (2)$$

$$\ln TOUR_t = \mu_0 + \sum_{i=1}^{k} \mu_{i1} \ln TOUR_{t-i} + \sum_{j=k+1}^{d_{max}} \mu_{2i} \ln TOUR_{t-j} + \sum_{i=1}^{k} \gamma_{1i} \ln RGDP_{t-i} + \sum_{j=k+1}^{d_{max}} \gamma_{2i} \ln RGDP_{t-j} + \sum_{i=1}^{k} \beta_{1i} \ln GPR_{t-i} + \sum_{j=k+1}^{d_{max}} \beta_{2i} \ln GPR_{t-j} + \upsilon_{3t} \quad (3)$$

4. Results and discussion

In this section, we discuss the results. The non-rejection of the Jarque-Bera null hypothesis of the descriptive statistics presented in Table 1 shows that geopolitical risk, tourism and economic growth are normally distributed. The estimated correlation coefficients reported in Table 2 signifies that geopolitical risk and tourism are positively correlated with economic growth, while tourism is positively correlated with geopolitical risk.

Table 1
Descriptive statistics.

	RGDP	GPR	TOUR
Mean	9107.982	111.115	14761376
Median	8237.612	103.414	10450728
Maximum	14936.40	256.3790	39478000
Minimum	5659.401	52.993	1215000.
Std. Dev.	2592.651	38.879	12050813
Skewness	0.722	1.165	0.548
Kurtosis	2.395	4.329	1.904
Jarque-Bera	13.505	39.605	13.228
Probability	0.116	0.100	0.134
Sum	1202254.	14667.20	1.95E+09
Sum Sq. Dev.	8.81E+08	198021.8	1.90E+16
Observations	132	132	132

Note: RGDP is the real gross domestic product, GPR geopolitical risk index and TOUR is tourism respectively.

Table 2
Pearson correlation coefficient.

	LNRGDP	LNGPR	LNTOUR
LNRGDP	1.000		
t-stat	–		
p-value	–		
LNGPR	0.447***	1.000	
t-stat	5.697	–	
p-value	0.000	–	
LNTOUR	0.847***	0.361***	1.000
t-stat	33.772	4.413	–
p-value	0.000	0.000	–

Note: *** indicate significance at 0.01 percent level.

We proceed to the next step, which is to examine the stationarity properties of the variables under observation in order for us to proceed for the modified version of the Toda and Yamamoto (1995) approach to causality testing. The approach is free from time series pre-unit root testing. However, we ensure that none of the series are integrated at second order i.e. $I(2)$. The Toda and Yamamoto approach to causality testing suggest that variables are stationary either at level $I(0)$, first difference $I(I)$ or mix-order $I(0)/I(I)$. To overcome the power loss problem that researchers mostly encounter using the Augmented Dickey and Fuller (1979) approach to unit root testing, we conducted Kwiatkowski, Phillips, Schmidt, and Shin (1992) as a confirmatory unit root test. Results as reported in Table 3 shows that, all series are of mix-order.

The distinctive order of integration of the variables under observation motivate us to employ the causality econometric tools of Toda and Yamamoto approach which necessitates suitable lag length for causality model specification. Results as reported in Table 4 via several lag length criteria. For this current study, as argued by Lütkepohl (2006) that Akaike Information Criteria (AIC) is appropriate for small sample data compare to other lag length information criteria, we utilize AIC. Moreover, AIC generates consistent and efficient statistics compared to Schwarz Information Criteria (SBC), Hannan-Quinn Information Criteria (HQ) and Final Prediction Error (FPE). As reported in Table 4, based on AIC, the maximum lag is 1, for the quarterly between the periods 1985Q1-2017Q4 in the case of Turkey.

We proceed to apply Toda and Yamamoto method Granger causality testing approach that produces information about the predictive relationship among the series. Information regarding the direction of causality among the series will furnish the governments and policy-makers in the tourist destinations across the world, and in particular for Turkey, a clear picture and deep understanding of the interconnectedness between the variables under observation. We are of the opinion that, understanding the direction of causality (whether it exist or not) among the series will be a policy tools to formulate economic growth and tourism development policies, with a view to improve tourism

Table 3
Unit root tests results.

Variables	Unit root tests at level	
	ADF	KPSS
lnGPR	−5.48***	0.535
lnRGDP	0.061	1.383***
lnTOUR	−1.161	1.399***
	Unit root tests at first difference	
	ADF	KPSS
lnGPR	−15.942***	0.024
lnRGDP	−12.351***	0.040
lnTOUR	−12.042***	0.033

Note: *** indicate significance at 0.01 percent level.

Table 4
Lag selection criteria.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	−57.380	NA	0.001	0.989	1.058	1.017
1	406.704	897.738	3.110*	−6.470*	−6.194*	−6.358*
2	409.761	5.763	3.430	−6.373	−5.890	−6.177
3	413.883	7.568	3.720	−6.293	−5.603	−6.013
4	418.480	8.214	4.000	−6.220	−5.324	−5.856
5	425.515	12.225	4.140	−6.188	−5.085	−5.740
6	428.283	4.672	4.600	−6.086	−4.776	−5.554
7	431.197	4.776	5.100	−5.986	−4.469	−5.370
8	437.006	9.237	5.410	−5.934	−4.210	−5.234
9	457.156	31.051*	4.540	−6.117	−4.186	−5.333
10	462.079	7.343	4.890	−6.050	−3.912	−5.182

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Table 5
Toda & Yamamoto causality test results.

Null Hypothesis	MWald stat.	p-Value	Decision
lnGPR Does not cause *lnRGDP* (1)	3.074**	0.049	Reject
lnRGDP Does not cause *lnGPR* (2)	0.670	0.412	Fail to Reject
lnTOUR Does not cause *lnGPR* (3)	1.256	0.262	Fail to Reject
lnGPR Does not cause *lnTOUR* (4)	4.276**	0.038	Reject
lnTOUR Does not cause *lnRGDP* (5)	0.238	0.625	Fail to Reject
lnRGDP Does not cause *lnTOUR* (6)	0.029	0.863	Fail to Reject

Note: ** indicate significance at 0.05 percent level.

sector and enhance economic growth of the nation, and consequently achieve sustainable economic growth and tourism sector development in the long-run.

Table 5 presents the Granger causality test results. The long-run causality between the series is indicated by the significance of the estimated MWald Granger causality statistics. Results as reported in Table 5 shows a unidirectional causality relationship running from geopolitical risk index to real GDP (Table 5, row 1). We also found a unidirectional causality relationship running from geopolitical risk index to tourism (Table 5, row 4). We could not reject the null hypothesis of non-Granger causality relationship from geopolitical risk index to real GDP, and from geopolitical risk index to tourism at a ($p < 0.05$) significance level. Thus, we conclude that, geopolitical risk index Granger cause real GDP, and geopolitical risk index Granger cause tourism, although this is not true from real GDP to geopolitical risk index and from tourism to geopolitical risk index respectively < sup > 3 < /sup > . Geopolitical frictions, tensions or even events such as elections creates fluctuations or uncertainties in the political scenes and exert notable effect in tourism arrivals, tourism imports, number of overnight stays and other indicators of tourism and hence economic performance such as equity market, portfolio allocation and economic growth. These results are in line with the findings of (Drakos & Kallandranis, 2015; Lanouar & Goaied, 2019; Omar et al., 2017; Sönmez, 1998).

Having established unidirectional causality relationship from geopolitical risk index to real GDP and from geopolitical risk index to tourism, we conduct structural VAR impulse response function (IRF) to shows how real GDP and tourism react to a shock in geopolitical risk index. Fig. 1 reports the structural VAR impulse response function (IRF) results of the responses of real GDP to a shock in tourism and geopolitical risk index, responses of tourism to a shock in economic growth geopolitical risk index and responses of geopolitical risk index to shock in tourism and economic growth respectively. Interestingly, the IRF shows that real GDP and tourism react positively (shock 2) to a shock in tourism/economic growth and negatively (shock 3) to a shock in geopolitical risk index from the beginning of period 1 till the end of the period respectively. This result is consistent for tourism and geopolitical risk index, we found that, tourism and economic growth react negatively to a shock in geopolitical risk index from the period 1 till the end of the period. Consequently, a shock to geopolitical risk has a noticeable negative impact on tourism and economic growth both in the short- and long-run.

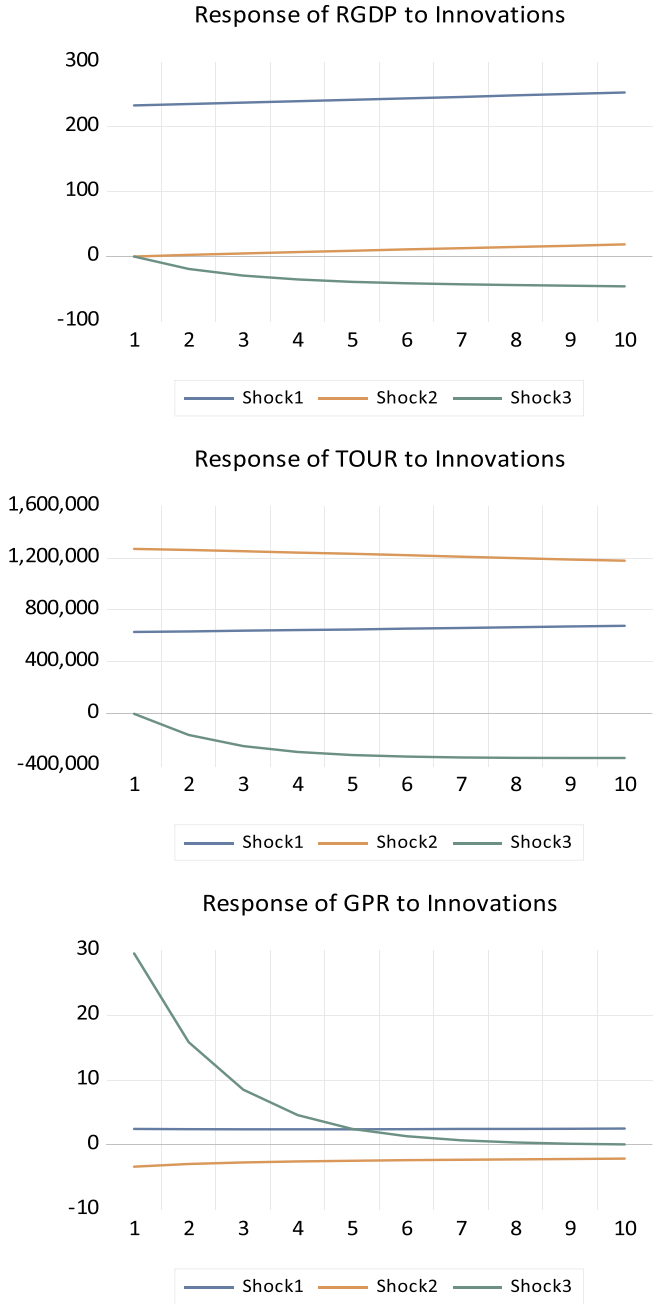

Fig. 1. Response to Structural VAR innovation for GPR_t, $RGDP_t$ and.$TOUR_t$

[3] Based on brevity (word count for note) and the fact that results do not change when we include inflation and exchange rate in the causality model, we did not alter the tables.

5. Concluding remarks

This study provides an insight into how geopolitical risk affects tourism and economic growth by using the modified version of Toda and Yamamoto approach to Granger causality testing in the case of Turkey. The empirical results confirm a unidirectional relationship running from geopolitical risk index to real GDP and from geopolitical risk index to tourism, and that real GDP and tourism reacts negatively to a one standard deviation shock to geopolitical risk both in the short-run and long-run.

If there is any lesson to be learnt from this juxtaposition it will be that, external shocks such as terrorism and political unrest impact the tourism earnings of nations as tourist naturally visit locations with track record of security and safety. Tourists reacts to exogenous events and adapt to broader political environment as it changes evolves. In essence, the dynamic attributes of both local and international political environment hold a significant effect on the economy, tourism as well as other market agents.

A number of policy implications can be deduced from our empirical analysis. Since geopolitical treat, war and transnational terrorism adversely affect tourism and impacts economic growth via increased government spending, targeted countries governments, most especially government of Turkey, must ensure that they do not overspend on offensive and defensive counterterrorism programs. Enders and Sandler (1996) and Siqueira and Sandler (2006) in their analysis show that there is a tendency for at-risk nations to spend too much on defensive countermeasures with the expectation of putting off potential attacks abroad. However, such policy measures have grievous negative influence on economic growth, which makes it even more crucial that neighboring countries cooperate in their quest to fight terrorism.

Conclusively, we suggest that, in proposing policy direction for tourism and sustainable economic growth of any tourist destination states, most especially in Turkey, policymakers should enforce overall strategies that would manage and minimize both internal and external shocks that might impact on potential tourist's decision making, and hence economic growth. This finding is consistent with the work of Antonakakis et al. (2017).

Conflict of interest declaration

There is no conflict of interest for this submission.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.jhtm.2019.09.002.

References

Adnan Hye, Q. M., & Ali Khan, R. E. (2013). Tourism-led growth hypothesis: A case study of Pakistan. *Asia Pacific Journal of Tourism Research, 18*(4), 303–313.

Agiomirgianakis, G., Serenis, D., & Tsounis, N. (2017). Effective timing of tourism policy: The case of Singapore. *Economic Modelling, 60*, 29–38.

Akadiri, S. S., Lasisi, T. T., Uzuner, G., & Akadiri, A. C. (2018). Examining the causal impacts of tourism, globalization, economic growth and carbon emissions in tourism island territories: Bootstrap panel granger causality analysis. *Current Issues in Tourism,* 1–15.

Antonakakis, N., Gupta, R., Kollias, C., & Papadamou, S. (2017). Geopolitical risks and the oil-stock nexus over 1899–2016. *Finance Research Letters, 23*, 165–173.

Apergis, E., & Apergis, N. (2016). The 11/13 Paris terrorist attacks and stock prices: The case of the international defense industry. *Finance Research Letters, 17*, 186–192.

Apergis, N., Bonato, M., Gupta, R., & Kyei, C. (2018). Does geopolitical risks predict stock returns and volatility of leading defense companies? Evidence from a nonparametric approach. *Defence and Peace Economics, 29*(6), 684–696.

Balcilar, M., Bonato, M., Demirer, R., & Gupta, R. (2018). Geopolitical risks and stock market dynamics of the BRICS. *Economic Systems, 42*(2), 295–306.

Bassil, C., Saleh, A. S., & Anwar, S. (2019). Terrorism and tourism demand: A case study of Lebanon, Turkey and Israel. *Current Issues in Tourism, 22*(1), 50–70.

Brida, J. G., Cortes-Jimenez, I., & Pulina, M. (2016). Has the tourism-led growth hypothesis been validated? A literature reviews. *Current Issues in Tourism, 19*(5), 394–430.

Caldara, D., & Iacoviello, M. (2016). *"Measuring geopolitical risk." working paper.* Washington, DC: Board of Governors of the Federal Reserve Board.

Caldara, D., & Iacoviello, M. (2018). *Measuring geopolitical risk. Board of governors of the federal reserve system.* International Finance Discussion Paper (1222).

Comerio, N., & Strozzi, F. (2019). Tourism and its economic impact: A literature review using bibliometric tools. *Tourism Economics, 1354816618793762*.

Das, D., Kannadhasan, M., & Bhattacharyya, M. (2019). Do the emerging stock markets react to international economic policy uncertainty, geopolitical risk and financial stress alike? *The North American Journal of Economics and Finance, 48*, 1–19.

Demir, E., Gozgor, G., & Paramati, S. R. (2019). Do geopolitical risks matter for inbound tourism? *Eurasian Business Review,* 1–9.

Dickey, D. A., & Fuller, W. A. (1979). Distribution of the estimators for autoregressive time series with a unit root. *Journal of the American Statistical Association, 74*(366a), 427–431.

Drakos, K., & Kallandranis, C. (2015). A note on the effect of terrorism on economic sentiment. *Defence and Peace Economics, 26*(6), 600–608.

Enders, W., & Sandler, T. (1996). Terrorism and foreign direct investment in Spain and Greece. *Kyklos, 49*(3), 331–352.

Fahimi, A., Saint Akadiri, S., Seraj, M., & Akadiri, A. C. (2018). Testing the role of tourism and human capital development in economic growth. A panel causality study of micro states. *Tourism Management Perspectives, 28*, 62–70.

Gil-Alana, L. A., Mudida, R., & de Gracia, F. P. (2014). Persistence, long memory and seasonality in Kenyan tourism series. *Annals of Tourism Research, 46*, 89–101.

Katircioglu, S. T. (2009). Revisiting the tourism-led-growth hypothesis for Turkey using the bounds test and Johansen approach for cointegration. *Tourism Management, 30*(1), 17–20.

Kwiatkowski, D., Phillips, P. C., Schmidt, P., & Shin, Y. (1992). Testing the null hypothesis of stationarity against the alternative of a unit root: How sure are we that economic time series have a unit root? *Journal of Econometrics, 54*(1–3), 159–178.

Lanouar, C., & Goaied, M. (2019). Tourism, terrorism and political violence in Tunisia: Evidence from Markov-switching models. *Tourism Management, 70*, 404–418.

Liu, A., & Pratt, S. (2017). Tourism's vulnerability and resilience to terrorism. *Tourism Management, 60*, 404–417.

Liu, H., & Song, H. (2018). New evidence of dynamic links between tourism and economic growth based on mixed-frequency granger causality tests. *Journal of Travel Research, 57*(7), 899–907.

Lütkepohl, H. (2006). Structural vector autoregressive analysis for cointegrated variables. *Allgemeines Statistisches Archiv, 90*(1), 75–88.

Omar, A. M., Wisniewski, T. P., & Nolte, S. (2017). Diversifying away the risk of war and cross-border political crisis. *Energy Economics, 64*, 494–510.

Perles-Ribes, J. F., Ramón-Rodríguez, A. B., Moreno-Izquierdo, L., & Torregrosa Martí, M. T. (2018). Winners and losers in the Arab uprisings: A mediterranean tourism perspective. *Current Issues in Tourism, 21*(16), 1810–1829.

Roudi, S., Arasli, H., & Akadiri, S. S. (2018). New insights into an old issue–examining the influence of tourism on economic growth: Evidence from selected small island developing states. *Current Issues in Tourism,* 1–21.

Saha, S., Su, J. J., & Campbell, N. (2017). Does political and economic freedom matter for inbound tourism? A cross-national panel data estimation. *Journal of Travel Research, 56*(2), 221–234.

Sandler, T., & Siqueira, K. (2006). Global terrorism: Deterrence versus pre-emption. *Canadian Journal of Economics/Revue canadienne d'économique, 39*(4), 1370–1387.

Sönmez, S. F. (1998). Tourism, terrorism, and political instability. *Annals of Tourism Research, 25*(2), 416–456.

Tekin, E. (2015). The impacts of political and economic uncertainties on the tourism industry in Turkey. *Mediterranean Journal of Social Sciences, 6*(2 S5), 265.

Toda, H. Y., & Yamamoto, T. (1995). Statistical inference in vector autoregressions with possibly integrated processes. *Journal of Econometrics, 66*(1–2), 225–250.

Wu, T. P., & Wu, H. C. (2019). The link between tourism activities and economic growth: Evidence from China's provinces. *Tourism and Hospitality Research, 19*(1), 3–14.